Comparative Study of 4 Exploratory Human-Centred Design Tools When Deployed in Participatory Health Service Settings

A thesis submitted for the degree of Doctor of Philosophy

by

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Abstract

The shift from traditional models of public service design to public-driven ones has been slow in the health service and particularly in the General Practice Consultation in the UK. This hesitation about fully adapting these design methods has been found to be motivated by a lack of evidence regarding the successful implementations of public involvement activities and the use of its tools, partial coverage of these tools, and failures to report on the use of alternative tools, among other reasons.

This research therefore aimed to propose Human-Centred Design (HCD) as an underlying philosophy and a pragmatic set of methodologies to better understand the challenges related to the application of customer involvement activities and the use typical methods when deployed in the investigation of issues and opportunities for the design of healthcare settings. This research consisted of three stages. An exploration stage, in which it was identified and confirmed several research gaps as well as a specific case for study with a degree of complexity and known for supporting customer involvement approaches. These activities involved a literature review about customer involvement processes and a qualitative interview study (with 30 participants) in which it was identified that, a suitable case for study to perform a large ethnographic investigation using representative Human-Centred Design tools could be '*Communication and relationship between GPs and patients*'. A development stage, in which it was investigated the design of public involvement activities as well as the identification and selection process of some ideal HCD tools (Focus Groups, Future Workshops / Rich Pictures. Love & Break-up Letters, and Crowdsourcing) to work with the selected case. For these activities, a total of 72 participants were recruited (n=18 per activity). Lastly, an evaluation and proposal phase, analysed these tools through a comparative study to identify several of their strengths and weakness in order to identify the best tool or combination of tools. The outcome from this comparison suggested that among the tools used for this research there was not a most optimal option or combination of options and that the success of an involvement activity relies in the careful and thorough preparation of such processes. This research concludes, that the most optimal form of helping health researchers to undertake public involvement research and to better understand the process of identifying and selecting ideal engagement tools, could be by providing a best practice informative guide containing a simplified and comprehensive version of the most commonly found steps embedded in this kind of design practices.

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Chapter 1 – Introduction

1.1 Research Background

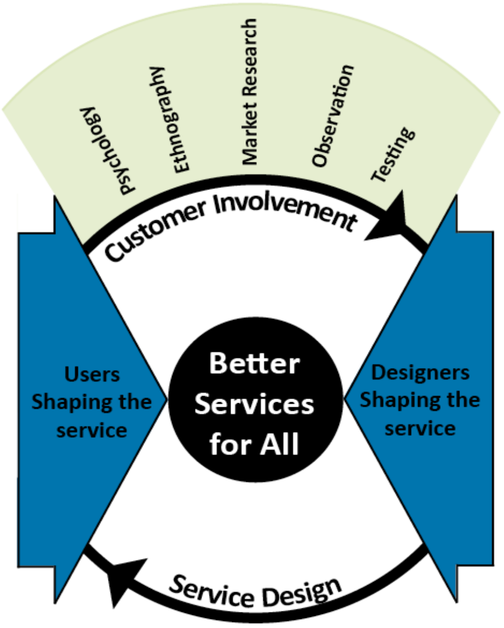
Services play a major role in the economic development and sustainability of many countries (Rao, 2007). For example, in 2010, the service industry in the UK was responsible for 73.4% of the country's GDP whilst employing 76% of the national total of workers on the market (Hollins, 2010). By 2014, the revenue from this industry increased to 78.4% of GDP, becoming the dominant economic sector of the country (Office for National Statistics, 2014). Services such as transport, finance, and telecommunications (Shostack, 1982) are some examples of these industries that are not only outperforming the manufacturing sector, but are also contributing to the enhancement and optimisation of productivity and resources (Rao, 2007).

Similar to products, services must be planned and designed in order to function adequately and deliver value to customers (Polaine et al., 2013). One way in which service-needs can be identified and services developed is through Service Design (Hollins & Hollins, 1991 & Ramaswamy, 1996). Service Design is a *'discipline that focuses on the creation of well-thought experiences'* (Stickdorn & Schneider, 2011:23) using combinations of tangible and intangible mediums intending to reach people throughout the many different touch-points over the various stages of provision (Moggridge, 2007). Furthermore, in Service Design, different methods and tools from various disciplines are used together in order to satisfy the latent needs of customers while making the service be seen as useful, usable, efficient, effective, and desirable (Hollins & Hollins, 1991).

One method that Service Design uses to identify customer needs and develop new services is customer involvement (Zeithaml, 2006). This method involves public collaboration in several ways with designers or researchers in order to *'anticipate customer needs and develop new services accordingly'* (Matthing et al., 2004:487). The importance of involving the public, emerged after private companies realised that such approaches could significantly help to improve the creation and delivery of services (Sigala, 2012), improve the seeming service quality (Bitner et al., 1997; Dabholkar, 1990; Zeithaml & Bitner, 2000), and encourage the communication between service organisations and customers in order to obtain better feedback (Lovelock and Young, 1979).

Junginger (2014:150-151) explains that the use of customer involvement has become a great necessity since the designing of services is '*no longer about organisational operations but about integrating processes, materials, functions, and form around human beings'*. However, applying customer involvement approaches in service design has been identified to create various challenges related to the recruitment of participants, project uncertainties, and that the tools currently used for involving customers are not strong enough to identify service needs (Dadfar et al., 2013; Junginger, 2014; Andersson & Hjertqvist, 2015), to mention few.

Figure 1.1 Customer involvements in service design



Source: Adapted from Moritz (2005) & House of Common (2006).

Human-Centred Design (HCD) has been suggested as an alternative to Service Design (Evenson et al., 2006; Junginger, 2014). HCD is a philosophy in which *'the needs, wants, and limitations of customers are given extensive attention at all stages of the design process'* (Berkowitz & McCarthy, 2013:287) in order to *'lead into products, services and systems that are physically, perceptually, cognitively, and emotionally intuitive'* (Giacomin, 2014:606). In Human-Centred Design, it is assumed that innovation should come from having the customer in the centre of the design process (Norman & Verganti, 2012; Sanders,

2002) and therefore designers and researchers are encouraged to cooperate with potential customers who are recognised as experts in one or more domains of the service that is being designed (Erickson, 1995; Steen, 2012:75). Steen (2008) explains that cooperation with customers does not mean simply asking people about their needs, but rather, to generate pathways of communication and joint learning which allow customers to express themselves as well as helping to conceive new ideas.

Meanwhile, Giacomin & Love (2011:14) have suggested that human-centred designers '*are relatively transparent figures that do not impose preferences on a project but, instead, convey and translate the will of the people in order to empower them through final design solutions'*. This implies that designers need several multidisciplinary skills to be able to consult and collaborate with people (Stappers, 2006) to go beyond simple reality descriptions into capturing (i) meanings, (ii) needs, and (ii) situated actions (Giacomin, 2014).

One way in which Human-Centred Designers can acquire the necessary skills while balancing usability concerns with a project's ambitions (Steen, 2012) is by borrowing tools from other disciplines such as ethnography, sociology and psychology (Berg, 2001). Giacomin (2014) explains that several of these tools can be divided into three separate categories and be used depending on the necessity and stage of the design process: *Tools regarding facts about humans and society; Tools that capture meaning, needs and situated actions and Tools that simulate possible futures.* When proactive designers use these tools, the knowledge about customers is combined with new ideas capable of helping to redefine spaces (Keinonen, 2009).

1.2 The Research Problem

In the United Kingdom, the use of public involvement approaches in design initiatives has grown considerably in recent years. The Cabinet Office (2006) explains, that such practices are the result of service organisations realising that change and better quality in services will no longer come from increasing expenditure alone, but rather through shifting traditional models of reform into considering the views of the citizens on how services should be shaped. To date, these ideas have been explored in several policy documents (Department of Health, 1989; Major, 1991; Cabinet Office 2005) and through national and international conferences (House of Commons, 2004; Cabinet Office, 2006; House of Commons, 2007), where their characteristics, benefits and challenges have also been debated.

One of many public services that currently use public involvement approaches is the National Health Service (NHS). Created in 1948, the NHS is one of the largest publicly funded health systems in the world (NHS, 2010) and one of the biggest providers of health, mental, and social care services (NHS, 2014) to the country's population. Some evidence of the commitment that the NHS has shown towards involving the public has been clearly evidenced in its constitution, in principle 4: *'The NHS aspires to put patients at the heart of everything it does'* (Department of Health, 2009: n.p.). In this principle, the NHS expresses its interest in offering individuals, their families and their carers the opportunity to manage health matters, by tailoring services around their needs and preferences (Department of Health, 2009). Several small and large-scale initiatives based on this approach have been deployed in recent years. For example, some small-scale projects include the *Community Care Navigators* (CCNs) (Windle, Francis & Coomber, 2011; Leveaux et al., 2012) and the *Expert Patients Program* (EPP) (Squire & Hill, 2006; Vadie 2012) that aimed to provide support to communities living with short-and-long term conditions through advice and assistance (Department of Health, 2001; House of Commons, 2008). On the other hand, an example of a large-scale initiative could be the *NHS Belong to the people: A Call for Action* (NHS, 2013b) in which interested stakeholders were encouraged to provide ideas and feedback on the positive and negative aspects of their local services in order to identify which of these areas would see more benefits from extra funding (NHS, 2013b).

A particular service area targeted by these types of initiatives has been the General Practice Consultation (GPC). GPC could be described as *'a two-way encounter between an individual trained in medical sciences and a patient'* (Pawlikowska et al., 2007:45), and serves as a transitional step for patients accessing hospital facilities or secondary care services (Royal Commission on the NHS, 1979). In the literature about GPC it was identified that customer involvement approaches have been used to address issues related to growing patient expectations, cuts in financial resources, and to reduce patient dissatisfaction with access to services (NHS, 2014), to name a few. Additionally, it was also identified that the same literature provides little evidence about the successful implementations of public involvement tools, partial descriptions of these tools, and it fails to report on the use of alternative tools (Gilliam & Murray, 1996; Department of Health 1999; Crawford et al., 2002; Parsons et al., 2010, National Institute for Health Research, 2012).

1.3 Key Research Questions, Aim and Objectives

Considering the aforementioned issues, the research presented in this thesis investigated the potential areas of application of HCD techniques for the design of NHS health services and the strengths and weakness of several popular HCD methods. The main questions, which the research set out to answer, were the following:

1. What is the state-of-the-art of Service Design and public involvement and how have these approaches been applied to healthcare service design?
2. Which healthcare service could offer a promising setting for the deployment of public-driven tools?
3. Which Human-Centred Design tools used for public involvement can be applied in healthcare settings?
4. What are the different strengths and weaknesses of the selected human-centred design tools and what conjectures can be drawn from these findings?

The aim of this research was *to develop a better understanding of the challenges related to the application of typical HCD methods when deployed in the investigation of issues and opportunities for the design of healthcare settings and to provide a 'best practice' information aid for its use by health researchers.* For this research, four objectives were defined:

1. To review the current literature related to customer involvement and how these processes have been applied to the public sector in the UK, with particular attention to the National Health Service (Chapter 2).
2. To identify and select a specific public service touch-point within the Health service sector with a degree of complexity and known for supporting customer involvement activities. (Chapters 3).
3. To identify and select various representative Human-Centred Design tools known for their use in the early stages of public-driven initiatives, and based on criteria typically used in customer engaging activities. (Chapter 4).

4. To develop an ethnographic study deploying the selected Human-Centred Design Tools using same the case for study and conditions such as deployment time, number of participants, and method for data analysis (Chapters 5–6–7–8).
5. To develop in-depth comparative study for all the selected HCD tools in order to identify what strengths and weaknesses these might include and what conjectures can be drawn from these findings (Chapter 9).

1.4 Overall Methodology of this Research

Prior to proposing the main activities in this research (see chapter 4), a comprehensive review of the different ways of approaching systematic investigation was pursued. This resulted in the identification and selection of a philosophical perspective, research approach and purpose of research (Neuman, 2013; Given, 2008).

A constructive (Saunders et al., 2007; Berg & Lune, 2012) and interpretive philosophical perspective (Leponiemi, 2008) were selected as these are known for emphasising the need to understand humans, their role as social actors, and how they construct meaning. The main reason for selecting these epistemologies was because all the activities in this research involved engaging directly with the public in order to identify individual attitudes and personal insights with the aim of creating practical knowledge.

Then, the principles of inductive research approach were used, since most of the data required for these activities needed to come from human experiences. Inductive approaches are commonly known for using qualitative research methods, which can help to establish areas where there is an absence of knowledge or information about a particular subject, while attempting to give sense or learn something about it (Denzing & Lincoln, 2005; Johnson & Christensen, 2008). Lastly, the purpose of research was thus largely exploratory as the researcher needed to gain familiarity with the topic of study through several qualitative methods for data collection in order to acquire familiarity with a phenomenon being studied (Darke, 1979) and explanatory because of the interest in explaining the research results rather than just describing them (Given, 2008).

Based on these approaches to systematic investigation, this research followed a process that comprised of three main stages: *exploration*, *development*, and *evaluation & proposal*. Table 1.1 offers and overview of the overall research process to which these stages were subjected.

Table 1.1 Overall research process

Stage 1 Exploration	Identification of challenges related to the selection, planning and use of public involvement tools applied to the design of healthcare settings.	Chapter 2
		Chapter 3
Stage 2 Development	Proposal of an involvement activity to explore a healthcare setting using various Human-Centred Design Tools	Chapter 4
	Focus Groups	Chapter 5
	Future Workshops / Rich pictures	Chapter 6
	Love / Break-up Letters	Chapter 7
	Crowdsourcing	Chapter 8
Stage 3 Evaluation & Proposal	Comparative study and proposal of an iformative guide summarising the most relevant outcomes found in this research.	Chapter 9

The main goal of the exploration stage was to identify and confirm research gaps in the literature about customer involvement and to recognise and select a specific case for study known for supporting customer involvement approaches. This stage employed a literature review and a qualitative interview research method. Additionally, a stakeholder model was identified with the aim to logically recruit the correct participants to approach this and other studies in this research.

In the development stage, the process of planning public involvement activities was empirically investigated through an ethnographic investigation (see section 4.1.1) and selection of Human-Centred Design tools in order to explore the issues and opportunities of the identified case for study. This study employed various qualitative approaches to data collection and quantitative and qualitative methods for data analysis.

The main goal of *evaluation and proposal* phase, was to identify the main strengths and weaknesses of the selected tools. This process followed a comparative study performed from three separate viewpoints (*planning*, *deployment* and *output*) while also using a number of criterions that were believed to be capable of evidencing the most obvious characteristics found in each of the tools. The result of this comparison was the proposal of a best practice informative guide containing a simplified and comprehensive version of the most commonly found steps embedded in public involvement activities. This decision was based on the acknowledgement that among the tools used for this research there was not a most optimal option or combination of options and that the success of an involvement activity relies in the careful and thorough preparation of a such processes.

1.5 Thesis Structure

This thesis consists of eleven chapters including this one. Chapters 2 to 11 are organised as follows:

- Chapter 2 begins with a review of the literature about the theory of services, customer involvement, and Human-Centred Design and also provides an overview of the NHS and the use of customer involvement as an alternative to improve the service provision
- Chapter 3 presents a qualitative interview study, which explores the possible areas for further research within the health service.
- Chapter 4 explains the planning process of a public involvement activity and includes the identification and selection of four Human-Centred Design tools for the investigation of the same case study.
- Chapter 5 describes the deployment process and data analysis of the first selected tool: Focus Group.
- Chapter 6 describes the deployment process and data analysis of the second selected tool: Future Workshops / Rapid Pictures
- Chapter 7 describes the deployment process and data analysis of the third tool: Love & Break-Up Letters.
- Chapter 8 describes the deployment process and data analysis of the fourth selected tool: Crowdsourcing.
- Chapter 9 proposes a comparative study between these four tools and provides a best practice informative guide containing the main conjectures from these findings.
- Chapter 10 presents the research conclusions and suggest some recommendations for future research.

Chapter 2 – Literature Review

Introduction

This chapter reviewed the main concepts involved in this research and it has been divided in five sections. The first section explains the logic followed for this literature review. Sections two to four offer a critical overview of the main theoretical concepts upon which this research was built: (i) Theory of services, service design and customer involvement, (ii) Human-Centred Design, and (iii) the NHS and its approach to health services improvement through customer involvement approaches. Lastly, section five presents some reasons suggesting the use of Human-Centred Design for public involvement in health service settings.

2.1 Literature Review

Ridley (2012:3) defines a literature review *'as the process of creating a body of referenced sources related to previous research and theory in a particular field'*. The goals of completing a literature review are (Neuman, 2013) (i) to demonstrate thorough knowledge and understanding of the subject of study, (ii) to show how a current piece of research relates to previous ones, (iii) to collect, organise and synthesise the different attitudes and opinions on an area of study, and (iv) to demonstrate how the current research can be enhanced by the understanding of previous studies. Regarding the sources for gathering information, Given (2008) mentions that these could include books, journals, conference proceedings, encyclopaedias, government reports and 'world wide web' resources, etc., although it is essential that the researcher learns to identify and critically select relevant sources within the research.

The use of a literature review was extensive during several stages of this research and its logic and structure followed some of the guidelines provided by Webster & Watson (2002) and Ridley (2012) as these helped to provide a clear organisation of all the searched materials and relevant documents. The following logic describes the process used for this review:

1. **Definition of concepts**: The literature search was initially based on keywords which covered the disciplines of 'Services', 'Human-Centred Design', 'User/customer/public involvement' and 'NHS'. To expand on these keywords, some synonyms were identified and used as part of the search.
2. **Identifying relevant sources**: Considering the number of multidisciplinary subjects approached in this research, several interdisciplinary electronic databases and library catalogues selected for this review included the ACM Digital Library, BMJ Collections (from PUBmed), SAGE, Applied Ergonomics (ScienceDirect), BMJ (ProQuest), Google Scholar, Google books and U.K. Parliamentary Papers, among others.
3. **Scanning for potential documents:** An initial search provided some 1213 different results (including all the keywords). After removing duplicates and reading the titles and abstracts in order to identify their possible relevance to this research, this number was reduced to 624.
4. **Selection of ideal documents**: A second scanning process performed to reduce the initial results, considered a full read of the found documents during the course of several months. Those documents that were considered to offer little or no new information or that deviated from the research goal were discarded, therefore reducing the number of resources to 151.

Appendix A1 shows an organisation chart based on Ridley (2012) of the full combination of (i) keywords, (ii) sources and catalogues, (iii) discipline types, (iv) results of search, and (v) citations by other authors, for the materials used in this and other chapters.

2.2 Theory of Services

2.2.1 Defining Service(s)

Several definitions of the term *service(s)* can be found in the literature (Regan, 1963; Stanton, 1974; Kotler & Bloom, 1984; Ziethmal & Bitner, 1996; Morelli, 2002). For example, one of the earliest definitions of this term was proposed by the American Marketing Association in the 1960s as those *'activities, benefits and satisfactions, which are offered for sale or are provided in connection with the sale of goods'* (In Looy et al., 2003:n.p.). Similarly, Kotler (1991:44) defines 'Services' as '*any activity that one party can offer to* *another that is essentially intangible and does not result in the ownership of anything'*. Additionally, Hollins & Hollins, (1991:7), define this concept as *'an intangible product that often cannot be stored and if it is not used during a period of time, its benefits become lost to both the customers and the organisation that sells it'*. Even though no universal agreement on a single definition of the term service(s) has been reached yet, most of these meanings appear to share a similar foundation as well as several typical characteristics.

2.2.2 What Characteristics are Services Known For?

Services have some characteristics that help to better understand (i) its meaning, (ii) what differentiates services from products and systems and (iii) the market challenges that can occur in the different service sectors (Shanker, 2002). Some of the most recognised characteristics are:

- **Intangibility**, which explains the lack of perceived physical components at the time of a service provision (Parasuraman et al., 1985). Shanker (2002) explains that this characteristic justifies the importance and use of those areas of service provision related to the quality and the experience (e.g. the attention, the personnel (staff) and the equipment (Parasuraman et al., 1985)).
- **Inseparability**, or the simultaneous production and consumption of services (Regan, 1963), requires the presence and participation of the customer (Carman & Langeard, 1980; Berkowitz, 1996), allowing components such as the 'right time', the 'right place' or the 'right way' to affect how the service is perceived (Sasser, 1976).
- **Heterogeneity**, or also referred as *'Inconsistency'* or *'Variability'*. This characteristic explains the impossibility of the same service being provided in the exact same way more than once (Kotler, 1986). Parasuraman et al. (1985), explain that the quality and essence of a service can vary depending on factors such as the day, the context, and the emotional states manifested in the producer and the consumer during the interaction (Knisely, 1979).
- **Perishability**, or the fact that services cannot be stored (Bessom & Jackson, 1975), make the coordination of demand andsupply difficult to control (Parasuraman et al., 1985). Sasser (1976), suggests that some ways to maintain the balance between these

two aspects is by offering complementary services, creating differential pricings or developing reservation systems, among others.

The other two characteristics that have been growing in recognition are: *Ownership*, which explains that because of the intangible nature of most services, these cannot provide ownership to the consumer but only a temporary sense of experience (Strydom, 2004; Rao, 2007); and *Customer Participation*, which explains that for most services to take place both the abilities and skills of the employee and a level of cooperation from a customer are necessary (Strydom, 2004) (not be confused with customer involvement).

2.2.3 Service Design

In 1980, when economic models started to change into policies supporting free competition and the concept of open markets came into existence, an era of intensified competition among various organisations (Rao, 2007) with the capacity for offering the same services began to emerge. Additionally, the recognition that differentiation between organisations could grant competitive advantage and market position (Martin, 1999), led researchers from various disciplines (e.g. design, marketing, informatics and behavioural science) to challenge their preconceptions about marketing and to define new concepts, strategies and techniques to help service companies manage new marketing problems (Rao, 2007). *Service Design* would then emerge in the 1990s as a response to these needs and challenges as a new design discipline (Moritz, 2005).

Early contributions to Service Design can be seen in works related to marketing and management disciplines such as the *service blueprints* (Shostack, 1982 & 1984). In these works, it was argued that the nature, sequence of events, essential functions and characteristics of a service interaction (i.e. touch-points) could be codified and documented in an explicit and objective way (Shostack, 1982). Nowadays, Service Design could be considered as a *'discipline that focus on the creation of well-thought experiences'* (Stickdorn & Schneider, 2011:23) using a combination of tangible and intangible mediums intending to reach people during the many different touch-points that happen over the stages of provision (Moggridge, 2007). Service Design has become an indispensable tool for those companies aiming to raise their value and to keep gaining strategic advantages over their competitors through better services and appealing experiences e to people's emotions and desires (Cottam & Leadbeater, 2004).

One method that Service Design uses in the process of developing new or improved services is *customer involvement* (Zeithaml & Bitner 2006). The practice and importance of this approach comes from businesses realising how customers can significantly help to improve the creation and delivery of services (Sigala, 2012), as well as enhancing the awareness of the experience in the customer journey through customer views (Evenson et al., 2006).

2.2.4 Customer Involvement and its Practice in Service Design

The concept of involvement has several meanings (Solomon, 2002) that follow an extensive body of literature encompassing studies in politics, marketing, psychology, and consumer behaviour (Choubtarash et al., 2013), among others. In addition, the term participation, which is often used interchangeably in similar literature (Cotterell, 2006), makes more challenging to agree on a definition of what exactly customer involvement represents. For clarification purposes, in this research customer participation will be understood as *'the active involvement of the customer in the production and delivery of a service'* (Büttgen & Ates, 2009:6). Meanwhile, customer involvement will be understood as *'those processes, deeds and interactions where a service provider collaborates with current or potential customers, to anticipate customers'* latent needs and develop new services accordingly (Matthing et al., 2004:487).

Some of the roots of customer involvement could be traced back to Eric von Hippel and his works about the *Lead User Theory* (Von Hippel, 1986, 2005, 2014). Here, he explains that although products are usually developed to cover as many needs for as many possible individuals, when the desired experience is not met, the same users make necessary adjustments to satisfy their own needs (Von Hippel, 1976). Customer involvement as an approach for service design aims to identify and satisfy customer needs (Pelham & Wilson, 1996) while also increasing the possibilities for success (Alam, 2006; Sigala, 2012). On the other hand, ignoring the voice of customers is described as one of the most common mistakes leading into failure of products and services (Wind & Mahajan, 1997, Cooper 1999). These ideas find additional support in the *Resource dependence theory*, which explains how external resources available to an organisation (i.e. customers) can affect its behaviour (Hillman et al., 2009).

For the purpose of identifying and bringing data into a design activity, customer involvement uses several methods and tools from disciplines such as ethnography (Buur et al., 2000) or market research (Moritz, 2005). These tools (Giacomin, 2014) can be used to support customers through the various stages of a design process (Kaulio, 1998) while helping design teams to understand market and client (i) needs, (ii) contexts, and (iii) relationships (Moritz, 2005).

Many studies have identified several benefits and challenges of adopting customer involvement approaches. In terms of the benefits, some examples could be found in the work of Dadfar et al. (2013), which through an extensive literature review and a case study aimed to provide empirical evidence about the effects of customer involvement in service production. These benefits are listed in table 2.1.

Table 2.1 Review of some of the benefits of customer involvement

Benefits	Key Literatures
Contribute ideas and increase the opportunities of new product and service success	Prahalad & Ramaswamy (2002);
Lead to the creation of original ideas beyond those provided by professional developers	Magnusson et al. (2003)
Help in the communication between service organisation and customers	Kelley et al. (1990); Lovelock & Young (1979)
Bring unique benefits and better values for customers while reducing cycle times	Alam (2002)
Help to improve the perceived service quality	Bitner et al. (1997); Dabholkar (1990); Zeithaml &Bitner (2000)
Increase the possibility of meeting customer expectations and benefits	Zeithaml & Bitner (2000)

Source: Adapted from Dadfar et al., (2013)

On the other hand, some of the most commonly found challenges of customer involvement have been described in the work of Nicolajsen & Scupola (2011). These challenges are listed in table 2.2.

Table 2.2 Review of some of the most common challenges of customer involvement

Challenges	Key Literatures
The identification of adequate participants and recruitment strategies	Nambisan & Nambisan (2008)
Involving customers might lead to project uncertainties	Nambisan & Nambisan (2008)
The identification and selection of appropriate channels for involving different customers and gathering required data	Nicolajsen & Scupola (2011); Andersson & Hjertqvist (2015)
Companies need to develop the competency to transform ideas into commercial innovations	Kristensson et al., (2008)
Propose goals for involvement and ensure that these can be met	Smedlund (2008)

Source: Adapted from Nicolajsen & Scupola (2011).

Junginger, (2014:150-151) explains that the use of customer involvement has been a great necessity since the designing of services *'is no longer about organisational operations but about integrating processes, materials, functions, and form around human beings'*. He then describes that this humanisation of organisational processes brings two additional challenges to current views about service design (Junginger, 2014): Firstly, there is a need to move away from seeing services as a type of good that provides some revenue and towards caring for the individuals being affected by the service. Secondly, the service design process should not only focus on the implications of specific services for the individual, but also to care for the societal context.

Considering these aforementioned issues, some authors have suggested (Evenson et al., 2006; Junginger, 2014) that the service design activity should focus mainly on human-centred and user-participatory methods, which have been known to encourage customer involvement at all levels of the design process while identifying and addressing cognitive, perceptual, and emotional needs of customers (Giacomin & Love, 2011). The following sections will now focus on reviewing what Human-Centred Design (HCD) involves, what associations can be drawn between this philosophy and customer involvement, and what tools and approaches can be offered for customer-driven design processes.

2.3 Human-Centred Design

2.3.1 Background of Human-Centred Design

The use of day-to-day products, services and systems is not always intuitive and at times can leave the user frustrated and unable to complete the simplest tasks (Abras et al., 2004). In response to this, the world of design has devised several processes that designers can implement to produce notable changes between new commodities and their previous versions. Giacomin (2012) has identified that most of these processes could be divided into: *Technology-Driven Design* that focuses on technical novelty, Sustainable Design that focuses on planetary impact, and *User-Driven Design* that focuses on human interests and their involvement in design processes.

Early notions of User-Driven Design can be seen since the 1960s as a response to a failure in community consulting that made planning systems look paternalistic and devoid of thoughtfulness for the primary 'user' (Garton & Carter, 2002). In 1965, *'the idea that the public should participate in planning decisions'* was first introduced in Great Britain (Taylor, 1998:86). Then in the 1970s, considerations about the human capabilities and characteristics (Ritter et al., 2014) for user participation in system development acquired greater importance in Scandinavian countries (Muller & Kuhn, 1993; Kensing & Blomberg, 1998). Later, these ideas would be developed into various approaches or philosophies with a central purpose of *'letting users, researchers and designers work together in the creation of tools that could enable final users to do their work better'* (Steen, 2008:37).

Early examples of these approaches are: *User-Driven Innovation* (Von Hippel, 1986), *User-Centred Design* (Norman and Draper, 1986), *Co-operative Design* (Muller & Kuhn, 1993) and *Human-Centred Design* (Rouse, 1991; Giacomin, 2014), among others. The main similarity of all these approaches is that they aim to identify the needs, wants, interests, and limitations of individuals with regards to the use of products, systems, and services (Preece et al., 2002) through user involvement in all the stages of the design process (Kahraman, 2010; Berkowitz & McCarthy, 2013).

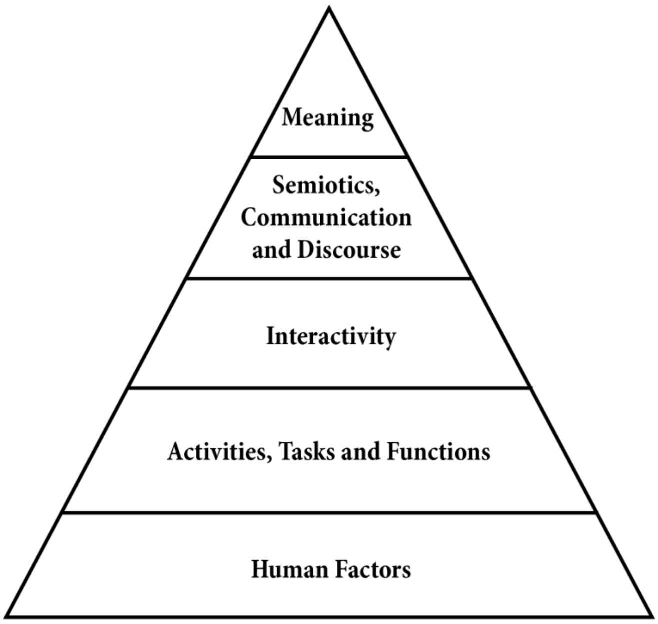
Gasson (2003:30) highlighted that a common issue among most of these methods is the *'failure to promote the human interest because of a goal-directed focus on the closure of* *predetermined technical problems'*. This means that the characteristics of products, systems and services are optimised based on predefined cognitive plans and conditions (Giacomin, 2014) which often can be comprised by limited degrees of interactivity, investigation and learning (Degani, 2004). Suchman (2007), also explains that these models do not adequately describe the coherence of human actions that result from the process of communication and learning defined or predicted within the original aims of the design.

Kripendorff (1989, 2004), while recognising such issues, suggested that the core activity of any User-Driven design process should be the identification of the meanings embedded in the interaction between individuals and different products, systems and services. Gicomin (2014) complement this view by proposing the answering of questions related to motivation, discourse and learning to then focus on the development of the channels for its application (Giacomin, 2014). Consistent with these ideas, Human-Centred Design is then defined as:

> *"... an approach that integrates multidisciplinary expertise towards enhancing human well-being and empowering people. It leads to products, systems and services, which are physically, perceptually, cognitively, and emotionally intuitive to use".*
>
> (Giacomin & Love, 2011:12).

This definition suggest that successful Human-Centred Design initiatives would answer an incremental set of questions about the relationships, behaviours and personality of the actors and their products, systems and services (Giacomin, 2014; Kelley, 2002). Giacomin (2014) have symbolised these questions in a pyramidal shape representation (see Figure 2.1), which associates rhetorical questions of antiquity with current design semantics that address from facts about human physical characteristics (at the base) and into complex metaphysical considerations (At the top). He also explains that these questions sustain that meaning can either be adapted from existing practices, as it is in the case of incremental innovation, or be defined by new observations and ideas, which arise from new interactions with people (Giacomin, 2014).

Figure 2.1 The human-centred design pyramid



Source: Adapted from Giacomin (2014:613)

2.3.2 Principles of Human-Centred Design

In 2010, the International Organisation for Standardisation (ISO) released a six-principle guide to ensure a better design process for projects related to Human-Centred System interaction. It was also implied that these principles could be complementary to similar design methodologies and should be applied appropriately and accordingly to the context of work. These principles are:

The Adoption of Multidisciplinary Skills and Perspectives

Multidisciplinary (or *interdisciplinary*) collaboration encourages specialists from two or more disciplines to work together for a specific objective (Saur-Amaral & Kofinas, 2010). This type of collaboration has proven to be beneficial as outcomes can be more complex and demonstrate higher quality, while bringing additional creativity and increasing the number of ideas produced by the different range of skills of the participants (Fleischmann & Daniel, 2010). Multidisciplinary collaboration is known for challenging researchers while providing a space where they can develop nes skills as well as a broad understanding of the advantages and limitation of the other disciplines (Fleischmann & Daniel, 2010). Conole et al. (2014), suggest five factors that should be considered in order to achieve successful interdisciplinary work: i) strong project leadership, ii) effective and supportive working culture across the team, iii) trusting relationships within the team, iv) a shared vision, and v) flexibility in the approach to work through conflicts with researchers from other disciplines.

Explicit Understanding of Users, Tasks and Environments

In Human-Centred Design, serving customers means reducing their (i) frustration, (ii) confusion, or (iii) sense of helplessness, whilst encouraging control and a sense of empowerment in their task (Norman, 2004). Since most designers have only limited contact with users, they often do not realise how users differ from each other and especially, how different they are from most designers (Gould & Lewis, 1985). For these reasons, Human-Centred Designers are recommended to select a list of relevant individuals for whom the design is intended (i.e. all possible interested stakeholders) (Brand, 2006) and to learn about the user and the interaction process that this might have with a product, system or service (Gould & Lewis, 1985; Norman and Draper, 1986).

User-Centred Evaluation Driven/Refined Design

Evaluating designs with users does not always imply that they must have design roles; they can also contribute through feedback as experts on their own daily lives and/or through their own experiences with products and services (Steen, 2008). Such evaluation allows design solutions to be verified against real-world scenarios to then gradually apply improvements. In addition, feedback can be a powerful tool for improving quality (Leape, 2003) as it helps to inform the designer about the state of the product, suggest possible user actions (Jordan, 2003), help discover hidden or unmet needs, develop further fulfilment of those needs and ultimately leap ahead of the competition (Norman, 2004).

Consideration of the Whole User Experience

In order to produce well-thought experiences, the Human-Centred designer needs to recognise the context of an intended experience. This means, to have a clear' *understanding of the perceptive and emotional characteristics of users as they relate to a proposed system'* (Gould & Lewis, 1985:302). Lastly, the designer needs to look at user's strengths, potential limitations, preferences and expectations when specifying in which activities the users participate and which functions are carried out by technological advances (Gulliksen et al., 2003).

Involvement of Users throughout Design and Development

The need to involve the user in design processes has made the design profession a complex task (Forlizzi & Ford, 2000). However, designers can not focus only on the product alone because successful design considers now other components such as '*user and context'*, in the user-product interaction (Forlizzi & Ford, 2000:422-423). Steen (2008:28) explains that involvement of users is *'not simply to ask users about their needs, but to organise a context in which users can express themselves and provide new ideas in cooperation with researchers and designers'.*

Iterative Process

Human-Centred Design is based on the principle of iteration, which stipulates that products, systems and services must pass through a cycle of testing, measurement and user/customer feedback (Gould & Lewis, 1985; Erickson, 1995). This helps to ensure that the products, systems, and services meet the intended purpose and operate as expected. Iterative processes should be used to progressively eliminate uncertainty during the development of systems (ISO 9241, 2010). It should contain a '*(i) proper analysis of the users' needs and the context of use, (ii) design phase, (iii) documented evaluation with concrete suggestions, and (iv) redesign process in accordance with the results of the evaluation'* (Gullisken et al., 2003:5). Iterative design should be used as an activity to confront *'the reality of unpredictable user needs and behaviours that can lead to sweeping fundamental changes in a design'* (Gould & Lewis, 1985:308). Iteration should involve users whenever important design decisions are going to be made (Travis, 2009).

2.3.3 Human-Centred Design Toolbox

One way in which Human-Centred Design balance user/customer concerns with project's ambitions (Steen, 2012) in involvement activities is by borrowing tools from other disciplines such as ethnography, sociology and psychology (Berg, 2001), among others. Furthermore, these tools can help to keep the '*users at the centre of the design process*'

(Sanders 2002:11) or as a source of stimulus for creative practices (Lucero & Arrasvuori 2010). Giacomin (2014) suggests that the most frequently used tools in Human-Centred Design projects could be divided into three different categories depending on their intended use (See table 2.3).

Table 2.3 Human-centred design toolkit (HCDT)

Tools Regarding Humans and Society	Tools that capture Meanings and Needs	Tools that simulate Possible Futures
- Anthropometric data sets and models - Biomechanical data sets and models - Psychophysical data sets and models - Cognitive data sets and models - Emotional data sets and models - Psychological data sets and models - Sociological data sets and models - Philosophical data sets and models	**Verbally based** - Focus groups - Ethnographic interviews - Questionnaires - The five whys - Be your customer - Customer journey - Personas - Future Workshop **Non-Verbally based** - Remote research - Crowdsourcing - Cultural Probes - Love & Break up letters - Customer Shadowing - Body language analysis - Facial coding analysis - Rapid Pictures	- Word concept association - Role playing - Focus groups - Co-design - Experience prototype - Real fictions - Para-functional prototypes

Source: Adapted from Giacomin (2014:616)

Tools Regarding Facts about Humans and Society

The Tools related to Facts about Humans and Society can help to find data and information about the anthropometrics, biomechanics, cognitive, emotional, psychophysical, psychological, and sociological aspects of the individual. This type of data tends to be related to areas of knowledge such as Ergonomics or Human Factors and helps to solve problems related to specification of user-behaviour, software interaction and desired performance (Long & Whitefield, 1989).

Tools that Capture Meaning, Needs and Situated Actions

The need for tools that go beyond initial users' *reality descriptions* have been justified in studies conducted by Von Hippel (1986,1999, 2005), Lindstrom (2008) or Hill (2010), in which the importance of cognitive, perceptual and emotional needs in the design of products is reflected. This category of tools can help in the detection of data related to meanings, desires and needs (Giacomin, 2014) and when proactive designers use these tools, the knowledge about customers is combined with new ideas and new concepts (Keinonen, 2009). These types of tools can also be of a verbal or non-verbal nature.

Tools that simulate Possible Futures

The aim of these tools is to immerse individuals in possible futures and to provide instances for social experimentation with imagined products, systems, or services (Giacomin, 2014). These tools also provide support for creative processes that elicit requirements, ideas and solutions (Gulliksen et al., 2003), which in turn provide the participants with a sense of ownership and better appreciation for the final solution (Nehal, 2009).

A further literature review has identified at least three subcategories in which tools from this category can be allocated:

1. **Scenario(s) for Quantitative Evaluation:** Quantitative Evaluation tools can be used when the simulations of possible futures are based on physical aspects (e.g. performance, time taken and different workloads) of the task that can be measured through observational means (Gould & Lewis, 1985).
2. **Scenario(s) for Qualitative Evaluation:** Qualitative Evaluation tools can be used when the simulations of possible futures are based on mental aspects (e.g. emotion elicitation, experiences, meaningful encounters) of the task that can be measured through empirical means (Gould & Lewis, 1985).
3. **Open-Ended Simulation and Design:** This subcategory clusters all activities that are meant to provide open-ended simulations. These types of methods are based on behavioural and attitudinal studies, which help design teams to acquire a much deeper connection with the final user.

2.3.4 Human-Centred Design as a Businesses and Involvement Strategy

The importance of addressing cognitive, perceptual and emotional needs of customers has become noticeable in business strategies looking to include the customer as an active partner in the design or improvement of products or services (Von Hippel 2005; Lindstrom 2005; Holt & Cameron 2010). Giacomin (2014) has explained that Human-Centred Design is neither consistent with technology-push paradigms (Verganti, 2009) known for their focus on the technology and optimisation of products, systems or services, nor with *market-pull paradigms* that encourage a much more significant interaction with customers. Human-Centred Design is more of a *Hybrid Market-Pull* that relates to the user's expectations or needs to encourage businesses to propose *'new meaning and possible futures'* (Giacomin, 2014). It is then suggested that in terms of business strategy, this philosophy involves:

- a change of traditional strategy (Hatch and Schultz 2008)
- identification and integration of ethical challenges (Brown 2005);
- better communication of the vision (Temporal and Alder 1998);
- greater communication within the business (Gray et al., 2010);
- greater interaction with the customers (Von Hippel 2005); and
- greater communication between customers (Cesvet et al., 2009)

(Taken from Giacomin, 2014: 618)

Additionally, some study cases that could demonstrate the adaptability and successfulness of this philosophy and some of its tools could be for example, IDEO (2009) and the '*HCD Toolkit'* in which it is explained several involvement tools through their application in a number of projects supporting necessities such as, storage, transportation, farming, basic medical treatment and marketing, etc. Another example could be the extensive restructure process of the Australian taxation system based on '*conversations with customers/users'* that allowed senior managers to use design-thinking in order to approach proactively various strategic issues (Buchanan, 2001). Lastly, the PLEX cards, could be another example to demonstrate how HCD tools were applied to create playful experiences in order to explore issues related to the environment and technology development, among others (Lucero & Arrasvuori, 2010).

Other cases, this time in a smaller scale could be for example "*Net Neighbours*" (York) – and online shopping scheme aiming to improve online access to older people through telephone intermediary volunteers – (Blythe & Monk, 2005). As well, it could be found, a project proposed by Unilever and known as '*clean team*' which through the use of interviews and prototypes aimed to bring clean water and sanitation to scarce resources areas in Ghana (Narracot & Norman, 2011).

Although Human-Centred Design and its tools could be applicable to several areas of knowledge (as seen in the previous examples), for this research, this philosophy was only used to explore its possibilities and opportunities in the health sector. This decision was made based on the believe that understanding how to improve health services through the participation of patients could help to generate better relationships with them, increase productivity and reduce costs.

2.4 The National Health Service and its Approach to Public Involvement

2.4.1 The NHS

The National Health Service (NHS) was created in 1948 as a single organisation and is known today as four different and independent public healthcare systems in the UK (NHS England, NHS Scotland, NHS Wales and Health and Social Care in Northern Ireland). The NHS oversees the provision of an extensive series of health, mental and social care services to the population of the UK and it has grown to become one of the World's largest publicly funded health service providers (NHS, 2010) with the potential of becoming one of the safest healthcare systems in the world (Williams, 2013). By 2014, the NHS was employing over 1.7 million people, including 39,780 general practitioners (GPs), 370,327 nurses and 18,687 ambulance staff to cope with the more than *'1 million patients' visits every 2 days'* (NHS, 2014: n.p.), in a free accessible way to all residents in the United Kingdom (NHS, 2013).

The commitment of the NHS towards delivering high quality health and care services has been evident since its creation in the late 1940s (NHS, 2014). These efforts were praised, in The Commonwealth Funds Report (2014), "Mirror, Mirror on the Wall" in which the NHS was ranked as the best healthcare provider of the year, among 11 of the most influential healthcare providers around the world. However, as with many services, there can always be room for improvement and proof of this can be found in the annual reports from the Health & Social Care Information Centre survey (HSCIC, 2013; 2014). For example, between the years 2012 and 2014, written complaints to NHS hospitals and community health services in England alone increased by 4.6% (109,000 complaints between 2012-13 and 114,000 complaints between 2013-14). The areas receiving the biggest number of complaints were: clinical treatment (2013-14), *attitudes from the staff* (Campbell & Meikle, 2011; Patients Opinion, 2011; HSCIC, 2013; HSCIC, 2014), *miscommunication between patients and staff* (Campbell, 2011; Patients Opinion, 2011; BBC News, 2009; Francis, 2013; Keogh, 2013; HSCIC 2013; HSCIC, 2014), *information to patients* (HSCIC, 2013) and *appointment delay or cancellation* (HSCIC, 2013-14). Other areas showing some problems, although mentioned with less frequency, were: *professional disengagement* (Francis, 2013), *wrong priorities* (Francis, 2013; Williams, 2013), and *insufficient level of care and compassion* (Campbell & Meikle, 2011; Patients Opinion, 2011). More importantly, one characteristic that many of these areas have in common is their relation to concepts such as the doctor-patient rapport (Balint, 1957; Kaplan et al., 1989) and their mediums of communication (Huges, 1983; Caccavo et al., 2000; Taylor, 2009).

The Health Foundation (2016) explains that a possible cause for these issues is the shortage in funding that this service has been subjected in recent years, which have resulted mostly in reductions of staffing levels in hospitals and care centres (Triggle, 2013), as well as in an increased workload for every remaining NHS employee (Smith, 2012). Since demand and expectations for high quality health services continues to raise, the NHS under the regulation of the Department of Health (2009) have resorted to increase the use of public involvement activities to improve some of these services (Department of Health, 1989; House of Commons, 2004; Cabinet Office, 2006; House of Commons, 2007).

Proof of the commitment that the NHS has shown about involving the public has been clearly evidenced in its constitution, in principle 4: *The NHS aspires to put patients at the heart of everything it does* (Department of Health, 2009). In this principle, the NHS reflects its interest in helping individuals, their families and their carers to manage health matters by tailoring services around their needs and preferences (Department of Health, 2009). This implies that health representatives should actively include individuals not only in decisions about care and treatment, but also in the planning of how health services would be shaped and delivered (NHS, 2013).

2.4.2 UK Government's and NHS Approaches to Public Involvement

The UK government and the NHS have explored the notions of public involvement (House of Commons, 2004; Cabinet Office, 2006; House of Commons, 2007) for several years already. For example, one of the most prominent governmental initiatives aiming to improve public services by taking into account public insights was the *Citizen's Charter Initiative* (www.parliament.uk, 2008). Here, the idea of empowering the citizens by defining their rights to public services aimed to place the individual *'at the heart of public service delivery'* (House of Commons, 2008:2). This initiative was considered a shifting point in thinking how public services should be provided (www.parliament.uk, 2008) and it was the foundation for subsequent reforms of this kind. Additional documents published in the following years would structure this approach further by:

- supporting the use of the public as an alternative to the traditional reform and re-structure approaches (Cabinet Office, 2006),
- suggesting and encouraging the use of communication and service delivery tools such as the internet, public forums, face-to-face, and telephone tools to reach people and deliver services to the them (HM Government, 2006); and
- enhancing the understanding of involvement, its various forms, levels and extent, and their potential implication in the development of public services (House of Commons, 2004; House of Commons, 2007).

On the other hand, the NHS approach to public involvement for the development and delivery of better health services would first relate to the considerations about people been offered an active choice in service delivery (Foot et al., 2014). Further documents would reinforce this view and state a series of patients' rights such as (i) the maximum length of waiting times, (i) the right to have a complaint investigated and (iii) the choice to be involved in informed decisions about health matters (Department of Health, 1989; Department of Health, 1991; Thompson, 2007). While acknowledging some of these rights, the *General Medical Council* in 1995 (General Medical Council, 2013) outlined further indicators for service delivery based on the *doctor-patient relationship*, such as:

- to give patients the necessary information about their condition, treatment and prognosis;
- to give this information in a way which can be easily understood; and
- to respect the rights of patients to refuse treatment or refuse to take part in medical teaching or research.

In 2000, the NHS put in place *The NHS Plan*. This reform aimed to redesign the health services to be more patient-centred and to offer more personalised services by 2010. Here, patients were given the opportunity to raise their concerns to the Patient Advocacy and Liaison Service (PALS) located in every trust (NHS, 2000). Within this reform, some small-scale initiatives using patient involvement were undertaken, such as:

- **The Expert Patients Programme (EPP):** Formally recognised by the Department of Health in 2001, the Expert Patients Programme is a six weeks' course designed to help people to self-manage their long-term conditions. Although some positive outcomes of this training have been identified, there are reports that suggest that initial expectations of self-efficacy and self-management are not always met and that the need for medical care is still required by some of its members (Vadie, 2012).

- **Community Care Navigators (CCNs):** This programme was designed by the NHS London Leading Workforce Transformation programme (Leveaux et al., 2012) in 2009. Here, the staff (care navigators) are trained to support people in community settings by providing them with help and advice on their health conditions (House of Commons, 2008). The interventions of these care navigators use methods for approaching individuals, such as face-to-face meetings, regular visits, telephone conversations, or information accessible through the Internet (Windle et al., 2011).

More recently, other example of an initiative aiming to consider the voice of the customer has been the *NHS Belongs to the people: A Call for Action*, in which patients, staff and other interested stakeholders are invited to provide ideas and feedback on how to face challenges regarding (i) the increasingly aging population in UK, (ii) the increasing costs of health, (iii) the rise of the population's expectations about the quality of care, and (iv) positive or negative aspects regarding local services (NHS, 2013). This data in return helps to identify which services require immediate attention and could see more benefits from funding (NHS, 2013).

2.5 Opportunities for Public-Driven Innovation in Healthcare Settings Based on Human-Centred Design

Some examples of the efforts that the UK government and the NHS have made to improve the performance and delivery of public and health services through public-driven initiatives (House of Commons, 2004; Cabinet Office, 2006; House of Commons, 2007; Department of Health, 1989; Department of Health, 1991; NHS, 2000; NHS, 2013) have been reviewed in the previous section. However, not all these initiatives have been successful and several challenges facing the use of customer involvement approaches have been identified in the literature. Some of these challenges have been grouped in table 2.4.

Table 2.4 Identified issues of public involvement initiatives

Issues	Key Literatures
Some public involvement projects have shown (i) a lack of empirical evidence about their effectiveness, (ii) a lack of understanding about the level of public involvement and form this should take, and (iii) an absence of proof that these approaches offered better value for money.	The House of Commons (2007)
User involvement is still seen as a defiant approach to traditional reform methods and many professionals seem to be reluctant to share their power with users and their communities.	Foot et al. (2014); Bovaird (2007)
People can be easily distracted if involvement activities are not well organised and they are now listening to new models of authority instead of traditional ones.	Davey (2010)
Public involvement brings certain challenges related to time and resources, the recruitment of participants and the management of researchers that are employed.	National Institute for Health Research (2012)

In tables 2.2 (rows 1 and 2) and 2.4 (rows 1, 3 and 4), it can be evidenced various statements that suggest some issues related to a lack of understanding about the selection, planning and implementation process of the tools used in public involvement approaches. Therefore, Human-Centred Design paradigm and principles, will be proposed as an alternative methodology to Service Design in order to explore on these challenges.

Summary

This chapter presented a selection of literature about the most fundamental concepts related to this research. First, some aspects of the theory of services and service design were reviewed and it was found that the use of customer involvement approaches has a central role in the service design process. Second, Human-Centred Design was defined and some of its principles and characteristics were discussed. Third, the NHS and the use of public involvement approaches in the design of healthcare services were reviewed. Furthermore, it was identified that although the use of public involvement approaches is widely encouraged by the NHS, there seem to be various challenges related to the selection, planning, and use of the tools deployed in these approaches. This chapter therefore proposes the use of representative Human-Centred Design tools in the investigation of issues and opportunities for the design of healthcare settings in order to address these identified challenges in public involvement approaches.

The following chapter will explore several of the services provided by the NHS through an activity conducted via qualitative interviews in order to identify a specific case for study with a degree of complexity and known for supporting customer involvement activities. This case for study is expected to serve as an adequate setting in which to focus further activities of this research.

Chapter 3 – Identification of a Healthcare Case for Study

Introduction

In chapter 2 it was identified that the design and improvement of healthcare services through public involvement approaches bring some challenges related to the selection, planning, and use of engagement tools. Based on these findings, it was proposed the use of representative Human-Centred Design tools for the investigation of issues and opportunities for the design of healthcare settings

This chapter proposed a qualitative interview study to explore the opinions of the public about various service areas of the NHS. The main goal of this activity was to identify a specific case for study with a degree of complexity and known for supporting customer involvement approaches on which to focus further activities in this research. The outcome from this activity was expected to provide an answer to the second question of this research – *Which healthcare service could offer a promising setting for the deployment of public-driven tools?*

3.1 Activity Approach

For this study, the research tool of *qualitative interviews* was selected due to its ability to collect thoughts and opinions about specific phenomena (Easterby-Smith et al., 2002). Although there are several limitations identified in this method, such as time consumption, reliability of data, and replication (Holloway, 2005), it is considered to be an effective technique for collecting a wide range of information (Stanton et al., 2005) and transforming implicit knowledge into accurate explanations of phenomena (Arksey & Knight, 1999).

3.1.1 Target Population

Prior to selecting the instrument for data collection, a stakeholder model was identified in order to logically recruit the correct type of individuals to approach. *‘Stakeholders can be* *described as those parties who will be affected by, or will affect [the organisation's] strategy'* (Nutt & Backoff, 1992:439). Although, stakeholder models have been criticised as lacking theoretical content (Key, 1999), they can provide visual reference to improve the planning of user research and project development activities (Martin & Hanington, 2012).

There are several techniques to identify stakeholders (Bryson, 2004), although it was found that the *NHS Institute for Innovation and Improvement* in 2008 created a useful checklist known as the '9 Cs' (See figure 3.1), to help ensure the inclusion of all relevant stakeholders (Gibson, 2012) in customer-driven healthcare activities. Even though this model was initially intended to aid NHS practitioners to identify, prioritise, understand, and better manage those individuals within the context of health services, it is suggested that it could also be applied in private and other public-sector organisations (Balogun, 2014).

Table 3.1 9 C's model for stakeholder's identification

Stakeholders	Their role in the NHS
Commissioners	The people that pay the organisation to do things
Customers	The people that acquire and use the organisation's products
Collaborators	The people with whom the organisation works to develop and deliver products
Contributors	The people from whom the organisation acquires content for products
Channels	The people who provide the organisation with a route to a market or customer
Commentators	The people whose opinions of the organisation are heard by customers and others
Consumers	The people who are served: i.e. patients, families, users
Champions	The people who believe in and will actively promote the project
Competitors	The people working in the same area who offer similar or alternative services

Source: Copied from OPENEDU (2014: n.p.).

The use of this stakeholder model and two additional unstructured interviews (Ferrante, 2012) with an expert in *clinical ward and rehabilitation management* helped to form a non-probability sampling strategy (David & Sutton, 2011) to recruit stakeholders considered as the most direct actors in the health service scenario and able to provide a clear picture of the context in investigation. Although not all the categories proposed by this stakeholder model were useful in the identification of stakeholder groups, it helped to visualise all the possible types of participants and to reduce possible sampling bias at the moment of selecting interviewees.

3.1.2 Interviews Type, Format, and Questions

Edwards & Holland (2013) explain that two of the most common *types* of qualitative interviews used across social sciences are unstructured and semi-structured interviews. In unstructured interviews participants are encouraged to talk about areas of interest using their own frames of reference, which allows the exploration of information that could had not been previously considered (Bailey, 2006; Edwards & Holland, 2013). Meanwhile, in semi-structured interviews, the researcher asks the participants a series of predefined open-ended questions about particular topics and additional questions can be asked if the answers lack of enough depth or clarity (Miles & Gilbert, 2005; Given, 2008). While unstructured interviews allow flexibility in the interaction (Edwards & Holland, 2013) and encourage inductive approaches to discussions (Given, 2008); semi-structured interviews can provide detailed information (Flin et al., 2013), standardisation for reliability purposes, validation for previous research, and the opportunity of acquiring new knowledge (Klenke, 2008).

In terms of interviews *format*, Opdenakker (2006) evidenced at least 4 different ways in which people could be approached in order to collect data: face-to-face, telephone, MNS messenger, and email. While face-to-face interviews has been found to help (i) identify social cues (e.g. behaviours) (Wyse, 2016), (ii) gather more spontaneous answers (Opdenakker, 2006), and (iii) build rapport between the interviewer and the interviewee (Bryman, 2004); all the other methods can be particularly useful to reach respondents that are '*widely geographically distributed'* (Mathers et al., 1998:4). The choice of one or more of these formats will depend on the advantages and disadvantages of selected type of interviews (Opdenakker, 2006).

When constructing interview *questions*, it is important to consider the form in which they will be outlined and what is going to be asked to the participants. In terms of their form, questions can be, open-ended, close-ended, or nominal (Bernhardt & Geise, 2009), to mention a few options. More importantly, selecting any of these forms will most likely affect the length of the collected data at the end of the activity (Walsh & Brinker, 2015). On the other hand, Patton (2005) explains that interview questions could ask the participants about their (i) opinions and values, (ii) feelings, (iii) experience and behaviour, (iv) knowledge, (v) senses, and (vi) background or demographic information. He also explains that distinguishing between these different types of questions can help researchers to be clear about what information they require and for respondents to answer appropriately (Patton, 2005). Lastly, having different types of data can help analyse phenomena from different angles (Merriam & Tisdell, 2015).

3.2 Activity Design

For this activity, the use of semi-structured interviews was proposed as to enable the participants to elaborate on their answers and in order to lead this research in new but related directions (Given, 2008). Additionally, a face-to-face format was used to maintain coherence and uniformity and because of its potential to gather tacit knowledge and non-verbal information from the participants (Patton, 2005).

A total of 14 questions (10 open-end and 4 close-end questions) were proposed based on the following four criteria and their connection to the literature found in section 2.4 (Chapter 2) (See questions in appendix B2):

- The overall views of the public on the NHS and their services provision (Gershlick et al., 2015).
- The emotional responses individuals can encounter and experience through service provision (Mattila & Enz, 2002).
- The views about the doctor-patient rapport and communication in several NHS services (Goold & Lipkin, 1999; Bakić-Mirić & Bakić, 2008).
- The views about user involvement in activities aiming to design/redesign health services (House of Commons, 2008).

These questions were evaluated through cognitive probing techniques such as Spradley (1979) criteria, Osgood et al. (1978) Semantic Differential (rating scale that helps measuring cognitive meaning in concepts), and Brown (2009) 5 W's from design (set of question that answer design issues related to who, what, when, why, and what) to ensure a well-structured consistency and a higher chance of extracting relevant data from the participants.

Simultaneously an *operations coordinator and expert in health affairs* from the *Healthwatch Hillingdon* reviewed all the questions to guarantee a higher level of sensitivity.

Sampling, Recruitment, and Data Collection Procedure

Prior to starting the interviews, a research ethics approval was sought and granted by the University Research Ethics Committee. The result of the stakeholder model and interviews in section 3.1.1 indicated that the suitable participants for this study needed to be patients and health service providers, as they were identified as the most direct actors in the health service scenario. Then, a sample of 30 participants, or until reaching data saturation, was selected, based on Ritchie & Lewis (2003) suggestions about the number of subjects to involve in interviews. The agreement of this sample also followed a non-probability sampling theory (David & Sutton, 2011) and the chosen participants were required to reflect a range of the total study population and diversity in age, sex, geographic background and risk, in order to encourage an equitable selection. The sample size dictated by the theoretical sampling frame is provided in table 3.2.

Table 3.2 Theoretical sampling frame for the interviews

Model of data Collection	Type of participants	# of participants	Settings	Total of participants
Interviews	Patients and health service providers	15 males/15 females	Brunel University	30

In respect to the recruiting strategies, these were adapted from studies of Arcury & Quandt (1999) and Dworkin et al. (2016), and included the distribution of flyers in permitted areas of Brunel University and the creation of participation groups on social network sites such as Facebook. In addition, a collaborative association with the *Healthwatch Hillingdon* branch was agreed in order to obtain better access to patients and health service providers and to receive advisory and supporting recommendations for this and other activities during this research. With more than 150 local authority areas, Healthwatch England is a *'statutory body whose purpose is to understand the needs, experiences and concerns of people who use health and social services and to speak out on their behalf'* (Healthwatch, 2016).

Regarding to the data collection process, this happened between the months of April and July 2015, through individual thirty-minute sessions. In each interview, the participants were explained the purpose of the activity, given the option to ask questions (if needed), and consent forms were delivered to be signed by all of them prior to starting the questions (See appendix B1).

3.3 Data Analysis

At the beginning of the data collection phase, this activity proposed to involve a same number of patients and health service providers (15 per stakeholder group, 30 in total). Nonetheless, due to unanticipated reasons (e.g. no time or willingness to participate) only 2 health service providers did participate and the missing numbers had to be substituted by patients instead. While this situation reduced the possibility of exploring the thoughts and views of health service providers about the topic in research, it is believed that the final results were not affected as this issue, allowed the gathered data to be analysed as a single dataset. Furthermore, it is believed that the data provided by the health researcher interviews helped to support and complement the answers given by the patients since the questions of both (patients and health service providers) interviews were carefully planned as to be able to gather the same type and form of information.

At the end of the data collection phase, approximately 120 pages of narrative text were produced. The whole data set was then analysed, first using *thematic analysis* (Guest et al., 2012) and then *word frequency checks* (Weber, 1990). The following subsections cover the review of both methods and will present and discuss the results found in each of them.

3.3.1 Thematic Analysis

Thematic analysis is a flexible method that not only identifies repetitions in the data but also recognises implicit and explicit ideas derived from the findings (Guest et al., 2012). Various pieces of literature explain how this type of analysis can be performed (Fereday & Muir-Cochrane, 2006; Alhojailan, 2012), although for this study, the steps proposed by Clarke & Braun (2006, 2013a, 2013b) were followed.

The first step in this analysis was to familiarise with the data through the review and transcription of all the recordings. Powers (2015) advises that when completing data transcriptions, this should be in a true verbatim form, so as to have an accurate image of the activity events and to find hidden cues behind hesitations or repeated words. The second step was to regroup various pieces of information into descriptive and interpretative codes (Saldana, 2009) in order to reduce the amount of data, while focusing on useful information that could help to answer the activity question. In a similar way, these subthemes were then grouped into main themes (Guest et al., 2012) to identify further meanings implicit in the data. Lastly, an interpretation and a hierarchical organisation of the themes were performed.

In order to reduce subjective bias and to ensure impartiality, both validity and reliability measures were pursued in this analysis through the method of *triangulation by multiple coding* (Ritchie and Lewis, 2003) and *member checking* (Creswell, 2007). Multiple coding was carried out by the author with the help of two design researchers with previous experience in qualitative analysis. The raw transcripts of the interviews were distributed to the other team members to create individual themes. Subsequently, these themes were compared and the results were drawn through several interpretative sessions. Meanwhile, member checking was used to provide confirmation of the results.

3.3.2 Thematic Analysis Results

The results of this analysis were organised into 11 subthemes and 5 main themes (See table 3.3). This section will describe each of the themes while also discussing their similarities with relevant literature.

Table 3.3 Results identified in the interviews thematic analysis

Codes	Subthemes	Themes
· Data · Same Language · Language	Language in consultation	Aspects of communication
· Clear information · Terminology · Misinterpretation of information	Terminology used in the consult	
· Rude attitudes · Poor communication with desk staff	Front-desk staff	
· Alternative aids · Clear information	Alternative channels of information	Information Management
· Way GPs Manage Patient information · Access to patient information · Transfer of patient data between GPs	Access, management and protection of patient data	
· Waiting areas · Consultation rooms · A&E waiting rooms · Clean facilities		Rooms and waiting areas in care centres
· Integration between the different areas of the service · Duty of Prevention · Duty of Social Service	Consolidation between health, mental and social services	Governance Controlled Areas
· Organisation · Performance of care centres · Professionalism · Good clinical practice	Patient safety	
· Diagnosis · Availability · Enough consultation times · Treatment · Emotional connection · Long term illness patients · Patient education · Provision of Care & health Services	Time in the General Practice Consultation	Service divisions in General Practices
· Waiting times in waiting areas · Short waiting times · Waiting times on the phone · Waiting times in A&E	Waiting Times	
· Consistency on behalf of health Staff · Same physician visits	Same physician Consistency	
· Appointment booking · Phone bookings · General practice bookings	Appointments Booking	

3.3.2.1 Aspects of Communication

Aspects of communication refer to the means in which patients and carers communicate to each other.

Language used in the consultation

Language used in the consultation was found to be problematic for some of the participants whose first language was not English: *"Language is important, I mean not just in terms of using good English but also in term of using language that the patient is going to understand"*. They also expressed that not been able to communicate adequately to their physicians was not always beneficial in the doctor-patient communication process: *"My language is very far from perfect, I have no idea about medicine so I expect doctors to explain to me in the way I will understand"*

Terminology used in the consultation

There was a mixture of opinions regarding this subcategory. While some participants had no issues with understanding the terminology used by the doctors, others suggested that occasionally it was 'very difficult' to understand the medical jargon and therefore they felt excluded from the conversation: *"I think they probably get used to their own terminology and forget that most people don't speak in the same way they do"*. Some of the participants stated that this issue was related to their literacy level or doctors overestimating their language proficiency: *"I kind of know some medical terminology from family but in the most part, the people have no idea what some words that doctors use mean"*.

Front-desk staff

Communication between patients and front-desk staff was mentioned as a recurrent issue in several practices and hospitals and it was mentioned that there was a disregard for quality customer service coming from staff in these positions. Recurrent complains about this service were also related to the attitude of receptionists in terms of phone-lines being constantly engaged or the lack of available appointment slots: *"Sometimes receptionists appear to be a bit obstructive and that sort of things, which can be annoying"*.

3.3.2.2 Information Management

This category groups some aspects related to the methods used to transmit information and manage it between doctors, patients and other staff.

Alternative channels of information

The participants mentioned the use of search engines such as Google and peer-to-peer information sharing as alternative channels for investigating issues related to illness and alternative treatments, or to find support from others with same or similar health conditions: *"Somebody like my wife, she will hear things like that and want to go onto the internet looking it up and start reading more into it"*. Some other participants also explain that the use of these channels would serve to complement the information provided in consultations by their doctors: *"the NHS has excellent Internet resources, which explain different pathologies, services and technologies"*

Access and management of patient data

Participants raised several concerns about the accessibility and management of their medical data: *"You go and see many people and none of them knows who you are and they don't seem to have the data"*. Most of them seem to be unaware whether they were allowed to access their data, what the channels for accessing it are, and the potential costs involve in this request: *"We don't have access to the data and they don't give it to us. Sometimes they make us pay for the data if we needed to show it to somebody"*

3.3.2.3 Rooms and Waiting Areas in Care Centres

Some of the comments from the participants pointed out that some of the areas (e.g. waiting room, consultation rooms, etc.) where health and care services are provided are not adequate to support the high demand: *"For example, when people stay in hospitals the rooms are almost prison like and very out-dated"*. Furthermore, some comments identified this subcategory as a measurement of patient and service satisfaction.

3.3.2.4 Governance Controlled Areas

Governance controlled areas refer to those sections or services where patients or medical staff have very little influence on how they are organised. In the UK, authorities such as the CCG's or the Department of Health control and regulate the functions of these areas.

Consolidation between health, mental and social services

Participants mentioned the efforts that the NHS has been making to consolidate health, mental and social care services and highlighted the necessity of this process due to the rapid increase in the number of elderly people in the UK. Patients and health professionals are seeing these efforts in a positive light as they believe that unifying these areas could help the NHS to provide a better, more complete and more comprehensive range of services: *"I would be interested to see how the integration of social services and medical services would be"*.

Patient safety

Some participants raised concerns about not always feeling safe while accessing, receiving, and delivering health and care services, blaming a lack of doctor professionalism in terms of their training: *"I think the main patient safety indicator is to be asked by the clinician whether you have understood what they told you and if you have not understood then to explain you again"*. It was also recognized that achieving high levels of patient safety is not an easy task and that the complexity of organisations such as the NHS can sometimes be overwhelming and disorientating. However, respondents also appreciated and approved of the persistent efforts that the NHS makes to improve their services.

3.3.2.5 Service Divisions in General Practices

This category approaches and consolidates several of the services provided in the general practices in the UK

Time in the General Practice Consultation

Some respondents expressed discontent with some of the services provided in the general practice consultation, which they believed were caused by the short time allotted to each appointment. They also expressed a concern about this time been too short for patients to adequately explain their issues to their GPs: *“I think the length is of 7 minutes at the moment, which is a problem because apparently now you are only allowed to come with only 1 question or something”.*

Waiting Times

Waiting times was identified as one of the indicators used by individuals to measure the quality of health services and many participants associate long waiting times with lower patient satisfaction and frustration with these services: *“I think one of the main issues is waiting to be seen…it just does take too long”*. Other comments show that the most common waiting time complaints were not only related to the GP practices, but also to other areas of the service: *“The waiting times...yes – At my age, I would expect to be seen on the day that I want to be seen in any kind of service I am trying to access”.*

Same physician consistency

Several comments from the participants suggested a preference for receiving health and care services from the same treating physician every time: *“So sometimes I might get sick and I don’t go to the doctor because I know I get there and the person is a different doctor anyway”*. It was also found that being treated by the same doctor every time helps patients to build better communication and a stronger relationship with their physician

Appointments Booking

Most of the complaints in this subset related to the number of appointments that are offered within a certain timeframe, the difficulties in obtaining an appointment, getting through on the phone or the delay or cancellation of existing appointments: *“There should be some flexibility for us patients to be able to book appointments”*. The flexibility of appointments booking was also identified as an issue related to service access: “*the next appointment it’s* *going to be two weeks and by the time I get there its already too late because I have found the solution a possible solution".*

3.3.3 Word Frequency Checks

While thematic analysis helped to reduce the length of the initial data, it did not help to reach the activity goal. The next step in identifying the required case for study was to do a *word frequency check* to find which words were repeated the most as well as their relevance in relation to the whole data set (Weber, 1990; Namey et al., 2007). NVivo 11.2 software was chosen as a suitable tool to help in these types of analysis. A cut-off criterion based on Weber (1990) methodologies was used to remove those words considered irrelevant to the activity question. Furthermore, some additional conditions that were added to the checks were (i) the removal of articles such as *a, I, and, the, is,* etc., (ii) the inclusion of stemmed or similar words and (iii) limiting the selection of words to those with a weighted percentage equal to or higher than 2.0 % per the total words counted. Table 3.4 shows the most frequently used words found in the interview data.

Table 3.4 Most frequently used words found in the interviews data set

Word	Count	(%)	Stemmed Words
GP	156	18.93%	General practitioner, doctor
Information	61	12.03%	Information, informing, informed
Experience	51	10.05%	Experiential, experiences
Communication	44	8.08%	Communicate, communicated, miscommunication
Relation	33	6.50%	Relationship
Satisfaction	29	5.71%	Satisfaction, dissatisfaction
Quality	19	3.74%	Quality
Attitudes	17	3.35%	Behaviour
Safety	15	2.95%	Safeness

The word *GP* and all it stemmed versions were found to be the most frequently used words throughout the whole data set, and by a large margin in comparison to the other words. These keywords were then used to perform a second search to identify in which of the subthemes these would appear the most. Table 3.5 shows all the subthemes in which the searched keywords were found.

Table 3.5 Subthemes in which word GP and all its stemmed versions were found

Subthemes	Count	Themes
Time in the general practice consultation	28	Service divisions in general practices
Treating physician consistency	13	
Language used in the consultation	10	Aspects of communication
Terminology used in the consultation	9	
Access, management and protection of patient data	9	Information management
Alternative channels of information	8	
Waiting times	7	Service divisions in general practices
Appointments booking	5	
Patient safety	3	Governance controlled areas
Front-desk staff	2	Service divisions in general practices
Total	94	

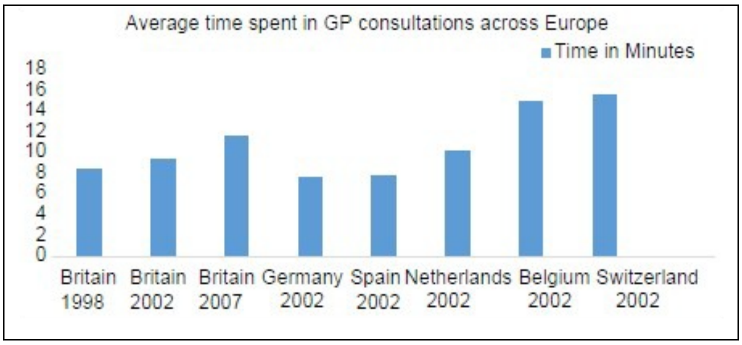
3.3.4 Word Frequency Checks Results

The result of this second search identified that out of the 156 initial results shown in table 3.4 only 94 referred to different ideas or contexts within the subthemes in which they were found. The remaining 62 results that were not included in these statistics may have been overlooked because they were used as connectors between irrelevant comments. Lastly, the results shown in table 3.5 suggested that the subcategory '*time in the general practice consultation*' had a great importance throughout the whole data set, therefore, the discussion section only emphasised on this area of the health and care services.

3.4 Discussion

Regarding to the findings in the data, the participants seemed to suggest that the general practice consultations are mainly i) short and ii) not empathically enough to fully discuss with the GPs the various issues required to be reviewed. This information also agrees with the literature as, first, the consultation time in the UK although changed several times in the past decades, is still considered among the shortest when compared to other countries in Europe (Knapton, 2017) (see figure 3.1).

Figure 3.1 GP Consultation time in different European countries



Source: Adapted from Lemon & Smith, (2014)

Second, although there have been several studies about the benefits that longer consultation times can bring to patients, such as reduction in prescriptions and referrals, influence on early returns and associations with higher patient satisfaction (Buchanan & Richardson, 1973; Huges, 1983; Baker, 1996), participants explained that most times, GPs only consent to be asked about one or two health issues per consultation, do not provide adequate explanation to the issues, and send them home with only over-the-counter medicines.

Other important findings on the data suggested that, factors such as i) poor management, ii) low funding, iii) number of allocated practitioners and nurses per practice and iv) a lack of GP skills, were of great influence on the issue of short consultation time. These findings seem to agree with finding by Heaney et al., (1991) and Limb (2016), which suggested that in terms of the general practice management the size of the surgery and the number of patients booked per physician per day, could affect the appointment length. Other studies have also suggested that physician's as well as patient's factors influence the length of this time. For example, in terms of physician factors, the most commonly found ones are GP's gender, age, level of experience and emotional exhaustion (Orton & Pereira, 2016) while with patients the most predominately ones seem to be their age, gender, background and their educational level (Deveugle et al., 2002).

In regard to the GP skills, interviewees explained that some physicians lacked basic relationship and communication abilities which are believe essential for building good rapport between both parts. Now, in term of physician skills, the literature explains that some of most recognised ones are, *Doctor-Patient Communication* (Fong Ha et al., 2010) and *Doctor-Patient Relationship* (Gupta, 2011). More importantly, these skills can be developed and exercised through some consultation styles (e.g. *Pendleton et al, model* (1984), *Brown,* *Stewart and Tessier model* (1995), and the *Calgary-Cambridge Method* (1996), etc.) that have been designed to address the various scenarios that can be encountered in the general practice profession.

An additional finding related to this issue of short consultation times was the use of public involvement activities. Several interviewees explained in here that although public involvement approaches are used by General practices to improve strategic issues in some services, (e.g. identify levels of satisfaction among patients, develop better communication with the GPs and practices, and improve service provision, etc.), most of them tend to feel poorly planned, have a limited range of tools or are overseen by people with little experience in their planning and implementation. Contrary to some of these believes, in the UK, there are several organisations such as *Local Involvement Networks* (LINks) (House of Commons 2007), *Local Healthwatch's* (Department of Health, 2012) and *Patient Participation Groups* (PPG) (Department of Health, 2010) that help to oversee or support the various phases required for these activities.

Regarding the use of involvement tools, a number of reports have recognised that although there are several activities that can help in this task (see table 3.6) (Local Government Management board, 1996; Barker et al., 1997), general practices and other organisations seem to use typical tools such as questionnaires, interviews and surveys, etc., while dismissing the possibility of alternative or innovative ones. This lack of initiative, could help to explain why reports about these types of tools only make reference to limited success (Gilliam & Murray, 1996), have gaps about the use of alternative options (Crawford et al., 2002) and show a lack of evidence about planning and implementation processes and their effectiveness when applied in different contexts (Department of Health, 1999; Crawford et al., 2002; Parsons et al., 2010, NIHR, 2012).

Table 3.6 Tools used for public involvement in the general practice

· Public Meetings · Focus Groups · Meetings with careers and user groups · Targeting interested people · Various sorts of interviews · Self-completed questionnaires · User Panels	· The Press · Participatory observation · Ethnographic enquiry · Community development · Health Panels · Feedback from staff · Surveys

Source: Adapted from Local Government Management board, (1996); Barker et al., (1997)

Summary

In this chapter, a qualitative interview study was proposed to explore the opinions of individuals about various service areas of the NHS in order to identify a specific case for study on which to focus further activities in this research. For this activity, 30 participants (Patients and health service providers) were interviewed and after a thematic analysis, 5 different themes related to issues with the delivery of health services were identified: Aspects of Communication, Information Management, Rooms and Waiting Areas in Care Centres, Governance Controlled Areas, and Service Divisions in General Practices. Following a word frequency check performed on the data, emphasis was given to the category of *Service Divisions in General Practices* and the *Time in the General Practice Consultation*.

Whilst reviewing the findings about the time in the general practice consultation in the discussion section, three conclusions were drawn:

1. The satisfaction of patients with the length of time in consultation is not only related to the amount of time available, but also to the skills and ability of GP's to encourage effective communication and a strong relationship with the patient during the visit.

2. In the past decade, the use of public involvement initiatives has grown in general practices.

3. Although several studies provide information on some tools that could be used in public involvement activities, many of these only seem to provide partial descriptions of their overall processes, while also neglecting the investigation of alternative options.

Considering these conclusions, this research suggests the use of *communication and relationship between GPs and patients* as a setting for the deployment of patient-driven tools. The main purpose for identifying this setting was to establish a case for study to perform a large ethnographic investigation using representative Human-Centred Design tools to address challenges in public involvement approaches related to the selection, planning, and use of such.

Chapter 4 – Planning of an In-depth Comparative Study

Introduction

In chapter 3, a qualitative interview study identified: '*Communication and relationship between GPs and patients*' as a case for study, to perform a large ethnographic investigation using Human-Centred Design methodologies with the purpose of addressing some challenges related to the selection, planning and implementation of tools used in public involvement activities.

In order to develop the intended investigation, this chapter activities started by providing an explanation of what is ethnography and why it was used for this research. Additionally, a review the existing literature about the most common steps used for planning public involvement activities was performs to then apply this information into the identification and selection of adequate Human-Centred Design tools given the selected case for study. The activities described in this chapter were expected to provide an answer to the third question of this research – *Which Human-Centred Design tools used for public involvement can be applied in healthcare settings?*

4.1 Using ethnographic investigation

Ethnography is a philosophy used to cluster empirical studies of people and cultures which was initially suggested for studies related to biology, anthropology and social sciences (Malinowski, 1922; Evans-Pritchard, 1940; Mead, 1959). Initial ethnographical techniques were based on information drawn from first-hand experiences from fieldworkers in some setting (Hughes et al., 1995), therefore, requiring academics to immerse themselves into studied communities and establishing social intimacies to allow them to capture and to participate in any relevant practices (Salvador et al., 1999).

Recently, ethnography has been applied in other research areas such as consumerism and product and service research (Salvador, 1999; Bell, 2003; Ladner, 2014). This is the result of some business corporations recognising the potential of this approach for revealing people real ways of interacting with products and services and finding unarticulated needs and emotional connotations that that user itself would not even be aware of (Patnaik & Becker, 1999; Martin et al., 2006).

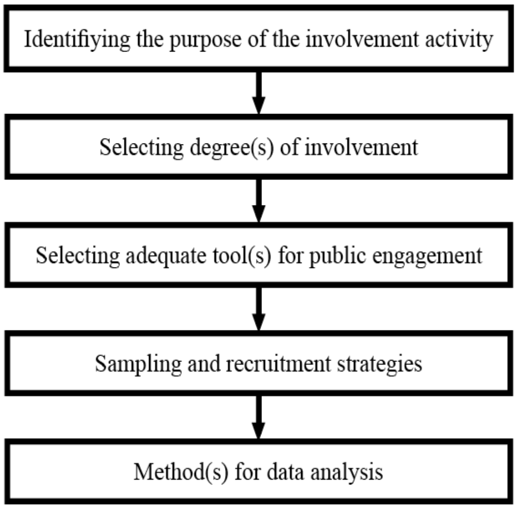
Since ethnography has the ability to collect and find meaning behind people actions and because it can help researchers engage and relate with the different individuals (Spradley, 1979; Ladner, 2014), it seemed adequate to be proposed as an investigative approach for the following research activities as these involved various levels of public engagement in various forms and depths.

4.2 Activity Approach

The methodology for this ethnographic activity followed a literature review and selection of the most commonly used steps in public involvement activities (Alam, 2002; Criegthon, 2004; DSE, 2005b; Guijt, 2014; Robinson, 2014; BMA, 2015:3-4), as it is argued that customer involvement approaches should be tailored to each project as no single plan or tool can be applied to all situations (Criegthon, 2004; Krishnaswamy, 2011).

While this section will care to review those steps or parameters believed to be the most relevant to this research (Figure 4.1). In section 4.2 it will be explained how each of these steps were adapted according to the requirements of this activity.

Figure 4.1 Public involvement parameters map



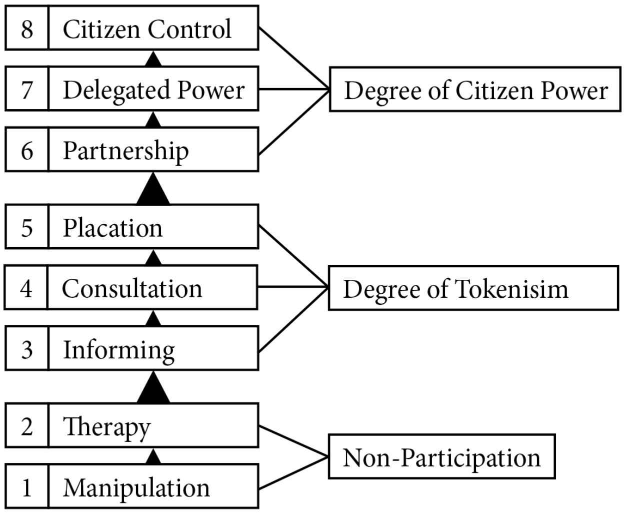
4.2.1 Identifying the Purpose for a Public Involvement Activity

Krishnaswamy (2011) explains that the planning process of a public involvement activity starts by defining the need or purpose for involvement. In addition, several authors describe this process mainly as (i) clarifying the issue requiring a public involvement activity (ii) establishing which benefits will come from using this approach and (iii) identifying the goals of the activity (DSEb, 2005; Criegthon, 2004; Miskowiak, 2004). This step ensures that a well-defined and clear purpose for involvement is developed before continuing into planning the next steps of the required activities (Hayes et al., 2012).

4.2.2 Selecting an Adequate Degree of Involvement

The level of involvement could be understood as the degree of interaction required from the participants (Ridley & Jones, 2002). Distinguishing between these levels of involvement can help researchers to not only improve a research study (Robinson, 2014), but to make a more critical decision about selecting the appropriate tools to use. An early framework for classifying different types of interaction with the public in which the power and control of participants over required decisions was considered was Arnstein's (1969) ladder of participation (See figure 4.2).

Figure 4.2 Arnstein's ladder of participation



Source: Adapted from Arnstein, (1969)

Decades later, Charles & DeMaio (1993), while suggesting participation policies for the healthcare sector, reduced Arnstein's ladder into three levels of participation: 1) *consultation*, 2) *partnership* (also known as collaboration) and 3) *lay control* (also known as user control). In *consultation*, individuals are asked their views, although these could or could not be taken into consideration to inform decision-making (Charles & DeMaio, 1993; Hayes, 2012). This makes consultation the lowest form of participation, since researchers do not need to continue further contact with any of the participants (Robinson, 2014). In *partnership*, individuals and researchers redistribute the power through an on-going partnership, so planning and decision-making involve collaboration (Charles & DeMaio, 1993). Partnership offers greater levels of involvement that can extend to the many stages of a research project (Hayes, 2012). Finally, in *lay control*, researchers give all the power of decision-making to the participants, who are seen as an independent authority. In lay control, the researchers might be able to access *'skills, perspectives and experiences that may be highly relevant and were not accessible at the beginning of the research'* (Robinson, 2014:319).

4.2.3 Selection of Adequate Tools for Engaging with the Public

The selection of adequate tool(s) is a critical step in any involvement activity as these are the mechanisms for engaging with people and gathering data (DSE, 2005). Several reports suggest that this process should consider the purpose for involvement and be based on criteria relevant to the (i) project context, (ii) community context, (iii) project objectives, and (iv) project teams (Beckley et al., 2005; DSE, 2005b; Krishnaswamy, 2011).

Rowe & Frewer (2000) recommends that when planning involvement, researchers should learn about the characteristics of various tools as well as their strength and weaknesses in order to have a better understanding of what they can offer to the involvement process. Nevertheless, having a comprehensive knowledge of several tools for public involvement can be a difficult task due their great and constantly increasing number (Beckley et al., 2005).

4.2.4 Sampling and Recruitment Strategies

Selecting an adequate number of subjects to involve can benefit the research by providing useful answers to the questions (Creswell, 2007). Robinson (2014) explains that in public-driven activities in health services, while the wider community should be involved, this does not happen very often and researchers result in overseeing potential skills, perspectives and experiences from those missing subjects. One-way in which an adequate level and type of participation can be ensured is through planning sampling and recruitment strategies.

Given (2008) explains that sampling requires to define the population with the most adequate information and the number of participants that will be involved in research. The most typically used samples are the *probability sample*, which is a method that uses randomised techniques to ensure that all participants have an equal opportunity to be selected, and the *non-probability sample*, which is a method where participants are selected according to methodological decisions adjusted to the research (Kothari, 2004). The sampling process usually consists of two steps: (i) defining the possible data sources or population and (ii) selecting a sample or number of participants (Given, 2008). It is also explained that when defining the population, each project needs to consider its own sources by having a range of eligible criteria based on the nature of the research and research question (David & Sutton, 2011). In sampling, when the necessary population is too large to involve, then a representative group or fraction should be selected instead.

Within nonprobability sampling, there are several methods that can be applied to any research project: convenience sampling, snowball sampling and purposive sampling (Given, 2008). More importantly, the choice between these three techniques depends on the researcher's decision about which individuals will and will not participate (Given, 2008).

After deciding on the sampling strategies, the next step is to start recruiting participants. Given (2008:743) explains that the recruitment of participants is where the researcher identifies and invites people to join a study, and this can be done by identifying and selecting some recruitment channels. Some of the most common strategies are advertisements, notices or the use of media channels (e.g. Facebook) (Research.uci.edu, 2017). Other additional actions that researchers can take include telephone or email reminders (Treweek et al., 2013).

In health research, some of the most commonly found issues with regards to the recruitment of participants are: obtaining consent, working with gatekeepers and accessing participants (Namageyo-Funa et al., 2014). Furthermore, Given (2008) complements this by explaining that participants might not trust the researchers, or the researcher might have a lack of knowledge about the community to be approached. In order to overcome these issues, a recruitment plan must be responsive to the population and to the requirements of the research

(Salkind & Rainwater, 2003). Moreover, it is also important to consider the adequacy of the sample and if the collected data will have sufficient depth to answer the research question. If the second consideration has not been meet then further revisions to the recruitment strategies must be arranged (Given, 2008:743).

4.2.5 Methods for Data Analysis

Data analysis is an essential step that helps connect the collected data with the expected results (Given, 2008). When analysing data, researchers can find that there are quantitative and qualitative methods. Quantitative methods use standardised techniques, investigate numerical and precise data sets, provide objective measures and test hypothesis (Babbie, 1990; Neuman 2013). Instead qualitative methods are often non-standardised, investigate socio-behavioural studies and the purpose is to determine the qualities of entities and meanings which cannot be quantified (Denzin & Lincoln, 2005).

In quantitative analysis, there are four different measurements commonly used in data sets: *nominal, ordinal, interval* and *ratio* (Lewis-Beck, 2003). Through these measurements, it is common to find graphs, tables, and other non-textual elements that synthesise the data to help others better understand it (Labaree, 2009). Baker (2008) explains that a further measure also used in quantitative analysis is corpus-based or corpus-linguistics techniques, which can be used to identify and quantify meanings in the data. He also explains that these approaches analyse corpora (or ‘large bodies of (language) data stored in computers’) to find frequently used words and patterns able to explain how language is used in discourse building. Corpus-linguistics is usually combined with computer-based tools that (i) conduct complex forms of data analysis (Bennett, 2010; Nesselhauf, 2011), (ii) cost nothing to use, (iii) can be applied to standard text formats and (iv) come with relatively easy-to-use interfaces (Gries, 2009). Some of the most commonly used programmes are AntConc, Concorder, Corpus Wizard, Multilingual Concordancer, WordSmith, etc.

On the other hand, in qualitative analysis some of the most common types of methods can include: *unique case orientation, inductive analysis, deductive analysis, and context sensitivity*, among others (Denzin & Lincoln, 2005). When two or more techniques are applied to the same data set, different aspects of these can be evidenced (Punch, 2013). While there are several methods that can be used for analysing qualitative data, Mays & Pope

(1996) explain that there are three broad approaches that can be used particularly in healthcare-related research: thematic analysis, grounded theory, and framework.

The use of quantitative or qualitative methods depends on the type of data that has been gathered by the activity. Nevertheless, it is suggested that the use of a mixture of methods should be pursued as the weakness of one method of analysis could be compensated by the strength of the other (Onwuegbuzie & Combs, 2011).

4.3 Activity Design

Regarding to the selected parameters for this ethnographic activity, this research considered the findings from the review in section 4.1. In addition, independent parameters (e.g. questions) of each of the selected HCD tools will be addressed in their respective chapters.

4.3.1 The purpose for conducting a public involvement activity

In respect to the identification of a purpose for conducting a public involvement activity, this was divided into immediate and long-term purposes. For this activity, the immediate purpose was to identify and select representative Human-Centred Design tools to explore the issues and opportunities in the c*ommunication and relationship between GPs and patients*. On the other hand, the long-term purpose was to observe the process and results that each of the selected tools produced, in order to address challenges related to the selection, planning, and use of the tools in public involvement approaches.

4.3.2 Selected Degree of Involvement

Considering that the purpose of the activity required to develop an analytic construct based on people's knowledge, experience, and opinions about the *communication and relationship between GPs and patients*, from the three levels of participation (Charles & DeMaio, 1993) identified in section 4.1.2 only consultation was selected.

4.3.3 Selection Process of Human-Centred Design Tools

The process of identifying and selecting the human-centred design tools for this activity started by creating a set of criteria based on the purpose for involvement and the project's objectives (Beckley et al., 2005; DSE, 2005b; Krishnaswamy, 2011). These criteria were divided into two categories to cover immediate and long-term requirements and expectations:

Criteria for tool selection according to the selected healthcare setting (immediate):

1. **Able to gather various types of information for service research design.** This criterion suggested that the tools should make it possible to gather various types of user/customer data such as to meanings, desires and needs (Giacomin, 2014).

Criteria for tools selection according to the project objectives (long-term):

2. **Able to reach the public in different modes.** This criterion was constructed based on the Beckley et al. (2005) framework, which suggested the selection of tools able to reach people in a direct way (or face-to-face) indirect way (or non-face-to-face) or using emerging technologies.
3. **Able to encourage limited or broad representation.** This criterion was also constructed based on the Beckley et al. (2005) framework, and suggested that the tools should make it possible to engage with people either individually or in groups.
4. **Able to formulate different forms of questions.** This criterion suggested that the tools should make it possible to formulate different forms of questions (e.g. open-end, close-end, Likert scale, etc.) (Patton, 2005).

The following step was to review several of the tools listed under the category *Tools that Capture Meaning, Needs, and Situated Actions*, from Giacomins' (2014) tools framework (See table 4.1). This review had the purpose of filtering some of those tools with similar i) planning procedures, ii) forms of public engagement (e.g. Groups, individual, face-to-face, online), and iii) types of potential data. From this literature review (which considered several books and publications such as Rowe & Frewer, 2000; Beckley et al. 2005; Stickdorn & Schneider, 2011; Martin & Hanington, 2012; Kumar, 2013, DSE, 2005c) and with the support of two unstructured interviews with an expert in Human-Centred Design activities from Brunel University, a list of eight potential options was assembled: *Focus Groups, Images Sorting, Crowdsourcing, Storytelling, Five Whys, Love & Break-up Letters, Future Workshops*, and *Rich Pictures Resources*. The main reasons for having selected these tools were because they were identified as having various representative planning and implementation processes and because it was believed that these tools had the higher probability of identifying several forms of data relevant to the exemplar case for study.

Table 4.1 Tools that capture meanings and needs in Giacomin's (2014) HCDT

Tools that capture Meanings and Needs	
Verbally based	**Non-Verbally based**
· Ethnographic interviews · Questionnaires · Story Telling · Cognitive task analysis · The five whys · Think aloud analysis · Customer journey · Personas · Scenarios · Focus groups · Future Workshop	· Remote research · Crowdsourcing · Cultural Probes · Love & Break-up letters · Customer Shadowing · Facial coding analysis · Rich Pictures · Game Playing · Visual journals · Error analysis · Fly-on-the-wall observation

Source: Adapted from Giacomin (2014)

Following the identification of these eight options, an evaluation step was performed. In here the most relevant characteristics of each of these tools were confronted to the selected criteria to identify which would be the most ideal options to use in this activity. Additionally, for this evaluation, relevant literature about each of the tools was considered as well as four unstructured interviews (two interviews with an expert in Human-Centred Design activities from Brunel University and two interviews with an expert in health affairs from the Healthwatch Hillingdon). The results of this review were the selection of four different Human-Centred Design Tools, one of them being a combination of two methods (see table 4.2). These tools were:

1. *Focus Groups,* as it was the only tool found to be capable of gathering data related opinions and values (Martin & Hanington, 2012; Berg, 2001; Spohrer & Freund, 2013) from groups of participants through open questions that promote debate (Gibbs, 1999).

2. *Future Workshops / Rich Pictures,* as these tools when used in combination can promote creative thinking (e.g. drawing or organising data) through personal

experience (Horan, 2000) as well as to encourage future scenarios for products, systems or services design (Löwgren & Stolterman, 2004).

3. *Love & Break-up Letters,* as this was the only tool found to be capable of gathering data related to personal feeling and emotions towards a product or service (Martin & Hanington, 2012).

4. *Crowdsourcing*, as the versatile nature of this tool can help to gather knowledge and big data, by reaching people via emergent means (online platforms) as well as to allow individual and group participation (Howe, 2008; Estelles-Arolas & Gonzalez, 2012).

For those tools that were not selected, the main reasons were that: *Image Sorting* mostly allows items categorisation which can provide sometimes inconsistent results (Kumar, 2013). *Story Telling* although encourages creative thinking (Saunders, 2000), only proposes description of activities which not always is helpful in the identification of needs and opportunities for service research design (Kumar, 2013). *Five Why's,* although offers the possibility to identify cause and effect based on public opinion (Stickdorn & Schneider, 2011), it does not offer the possibility to formulate different question types besides of the question *'why?'* (Nguyen, 2012).

Table 4.2 Evaluative table of each of the pre-selected tools against the selected criteria

Tools / Criteria	**Focus Groups**	**Image Sorting**	**Future Workshops**	**Rich Pictures**	**Story Telling**	**Crowdsourcing**	**Five Why's**	**Love & Break-up Letters**
Able to gather various types of information for service research design (e.g. needs, meanings, desires, etc.)	Opinions and values	Opinions	Creative Thinking	Experience and factual information	Creative thinking	Knowledge and big data	Opinions	Feelings and emotions
Able to reach people in different modes (direct, indirect or emerging)	Direct	Direct	Direct	Direct	Direct	Emerging	Direct	Direct, Indirect and emerging
Able to encourage limited or broad representation	Group	Individual	Groups	Individual and Groups	Individual	Individual and groups	Individual	Individual and Groups
Able to formulate different question types (e.g. open-end, close-end, Likert scale, etc.)	Ask mainly Open-end quesitons to promote debate	Invites to categorise items acording to predefined criteria	Propose the development of new ideas and solutions	Suggest tasks in order to collect data about complex scenarios	Invites to propose descriptions of activties	Formulate several types of questions (e.g. open-end, close-end, Likert scale, etc.)	Invites to identify cause and effect of a problem	Ask questions that explore emotional conections or relationships

* Some alternative sources used for these evaluations were (Stickdorn & Schneider, 2011; Martin & Hanington, 2012; Kumar, 2013)

4.3.4 Selected Sampling, Recruitment and Ethic Approval Strategies

The selected sampling strategy for these activities followed a non-probability sampling theory (David & Sutton, 2011) and the participants were required to represent a range of the total study population and diversity in age, sex, geographic background, and risk, in order to encourage an equitable selection. In addition, the number of participants per activity was chosen to be 18 (72 in total) and none of the participants was allowed to contribute to more than one activity. Lastly, the stakeholder framework described in chapter 3 (section 3.1.1) was considered in order to better identify the type of participants required for this activity (General Practice Users).

In terms of the recruiting strategies, these were adapted from studies of Arcury & Quandt (1999) and Dworkin et al. (2016). These strategies included the distribution of flyers in permitted areas of Brunel University and Healthwatch Hillingdon, the use of web technologies such as an E-mail Listserv (managed directly by Healthwatch Hillindgon), and the creation of participation groups on social network sites such as Facebook.

Prior to starting the data collection procedures, a research ethics approval was sought and granted only by *Brunel University Research Ethics Committee* as it was advised not to reach the *NHS research committee* since the nature of these activities were considered non-invasive. Data collection was implemented between the months of October to December 2016.

4.3.5 Data Analysis Methods

Before starting with the proposed activities, a review and selection of some quantitative and qualitative methods adequate enough for analysing the data from the respondents was performed. This process started by reviewing several methods such as, *Cross-Case Pattern Analysis* (Given, 2008), *Thematic Analysis* (Clarke & Braun, 2013), *Content Analysis* (Holsti, 1968), *Deductive Analysis* & *Inductive Analysis* (Patton & Patton, 2002), *Frequency Lists, Concordance Analysis, Collocate Analysis* and *Keynes Analysis* (Baker, 2008).

From these review, only four methods were selected: Frequency Lists (quantitative), Concordances (quantitative/qualitative), Collocates (quantitative/qualitative) and Thematic

Analysis (qualitative). The main reason why the corpus-linguistics quantitative methods were selected was because they are known for been able to ‘analyse large pieces of naturally occurring language’ (Baker, 2008:1). On the other hand, Thematic Analysis was selected because it can help to not only identify repetitions in the data but also to recognise implicit and explicit ideas derived from the findings (Guest et al., 2012). Additionally, the purpose of selecting quantitative and qualitative methods was to first, identify what differences in terms of results each of these methods could yield, and second, to identify which of these methods would provide more complete results in relation to the selected case for study.

Method 1: Frequency Lists

Frequency lists is a quantitative method that encourages the creation of lists of words using computational techniques (Archer, 2009). The results from word counting can be used as part of research related to areas of psychology, language teaching, software production, and others (Popescu and Altmann, 2009). Baker (2008) suggests that when creating frequency lists, researchers should keep in mind, (i) the use of considerable amounts of raw data, (ii) a clear aim and (iii) be careful to avoid presumptions about the way words are used within the data.

1. Some of the steps that were used to perform this activity analysis were adapted from Baker (2008) and are as follows:
2. To create or find a corpus.
3. To select a programme with the option of running frequency checks on the data collected.
4. To look for words with higher patterns of repetition in order to select some clusters (or frequency derivations). Clusters can help to see in which ways words are used (Kutter & Kantner, 2012) and to identify in which parts of the data set they repeat.
5. To identify whether the cluster of words relates or not to the initially proposed hypothesis.

Method 2: Concordances

Concordance analysis is a quantitative method (with qualitative qualities) for data visualisation that lists all the lines of a text in which a specific word might repeat (Baker,

2008) in order to find patterns around them (Lüdeling & Kytö, 2009). When analysing concordances, it is important to remember that the larger the data sets, the more likely the researcher will be able to find patterns of repetitions in the selected words (Baker, 2008).

Some of the steps that were used to perform this activity analysis were adapted from Baker (2008) and are as follows:

1. To choose a term or terms (also known as key word in context (KWIC)) to use in the concordances search.
2. To run a test to obtain concordances using the tools provided by the software of choice (Lüdeling & Kytö, 2009).
3. The concordances need to be cleaned by removing repetitions or irrelevant references. This can be done by using parameters, such as 'regular expression (regex)', which allows the software to look for all the different ways in which the chosen terms appear in a corpus and search window sizes.
4. To look for linguistic patterns in language use and to interpret why they exist. This operation can be related to what is known in qualitative analysis as creating codes (Baker, 2008).

Method 3: Collocates

Collocates analysis is a quantitative method (with qualitative qualities) that examines those words that have some statistical significance based on their position in the data set (Baker, 2008). Carter (1998) explains that collocates are often evaluated through Mutual information (MI) or T-score equations (Stubbs, 1995), although these are only used to rank the result, as the nature of language allows most collocations to be significant.

Some of the steps that were used in this analysis were adapted from Baker (2008) and are as follows:

1. To select some search terms, believed to be relevant to the data set.
2. Parameters such as 'window of words span' and 'words pattern of repetition' can be selected to identify the number of times the selected terms appears in the data (these results are known as collocates).
3. To look at the concordances of those collocates to see if there are any discourse patterns within the context.

4. Finally, the researcher can attempt to explain those patterns around the identified collocates.

Since the four data sets were varied in quantity and quality of content, to some of the parameters of the analysis needed to be made in order to identify relevant concepts in the data. These changes will be explained in the respective chapters where they happened.

Method 4: Thematic Analysis

As explained in chapter 3, thematic analysis is a flexible qualitative method that not only identifies repetitions in the data but also recognises implicit and explicit ideas within it (Guest et al., 2012). The process for doing thematic analysis followed a similar number of steps to those explained in section 3.3.1 (chapter 3), although variations on the number of external coders were necessary in order to adapt to the requirements of the study. This process was as follows:

Phase 1 entailed the creation of a preliminary list of codes:

1. To created a list of codes from the raw data for each of the activities
2. An external coder (C1) was also asked to create a list of codes from the raw data for each of the activities.
3. A second external coder (C2) was given both lists of codes to review and synthesise them into one list. The purpose of this step was to identify and remove any conflicting results from the first two lists (Miles & Huberman 1994).

Phase 2 identified four external coders (one per data set and different from those in phase one (C3, C4, C5, C6)) to work separately in the coding of each of the data sets from the raw data. All the coders in this phase were either experts or had done data analysis in the past)

1. All the created lists were then synthesised in one big list of codes.

Phase 3 entailed the identification of a set of eight external coders (two per data set and different from those in phase one and phase two (C3, C4, C5, C6, C7, C8, C9, C10)), this time to work in couples to create themes from the lists of codes. In this phase, the researcher provided detailed instructions to the coders on how to create the themes. (See appendix G2).

2. For each data set, the selected external coders, met with the researcher to discuss their findings and suggest final arrangements for the results.

Phase 4 entailed identifying data excerpts (from the raw data) that could support the details in these themes. These themes were then taken back to some of the participants of the activities, who were asked to check and confirm their consistency with the data sets.

In order to reduce possible subjective bias and to ensure impartiality, both validity and reliability measures were pursued through the method of triangulation by multiple coding (Ritchie and Lewis, 2003) and member checking (Creswell, 2007). Multiple coding was carried out through the selection of multiple coders, while member checking was used to provide confirmation of the results.

Summary

This chapter started by reviewing the most common steps used for planning public involvement activities and it was discovered that this is process must be tailored to each project, as no single plan or tool can support all situations. From this process, several parameters related to the planning of the ethnographic activity were identified and selected in order to allow each tool to be deployed under the same conditions. Additionally, it was found that the selection of adequate public involvement tools should follow certain criteria according to the purpose of the involvement activity. From this process, four representative Human-Centred Design tools were identified and selected: Focus Groups, Future Workshops / Rich Pictures, Love & Break-up Letters, and Crowdsourcing. Lastly, four different methods for data analysis to be used in each of the activities were reviewed.

In the following four chapters, the implementation process of each of the selected Human-Centred Design tools will be described, and evidence will be provided of their anticipated strengths, weakness, and the results will be provided

Chapter 5 – Focus Groups

Introduction

This chapter addressed the planning, implementation and results of the first Human-Centred Design tool selected to perform a large ethnographic activity to explore the challenges and opportunities when proposing public involvement activities: Focus Groups.

This chapter was divided into four sections. Section one covered the most relevant literature related to Focus Groups activities. Section two explained the activity design and decisions related to the planning of the tool. In section three, the results derived from the investigation of the case for study – *Communication and relationship between GPs and patients* – are described. Lastly in section four, these results are discussed.

5.1 Activity Approach

5.1.1 Introduction to Focus Groups

Focus Groups are described in this thesis as a *'form of qualitative interview style research in which a small group of people are asked about their perceptions, opinions, beliefs, and attitudes towards a product or a service'* (Martin & Hanington, 2012:91; Berg, 2001:100; Spohrer & Freund, 2013:96). Its origins could be traced back to the 1940s, even though it was not until 1960s and 1970s that this tool started to gain popularity (Greenbaum, 2000) and be employed (Greenbaum (1998:167) as a method for data collection. In these years, Focus Groups would be mostly used for market research purposes such as the exploration of issues related to brand, packaging and purchase decision by private sector organisations (Ritchie & Lewis, 2003; Kumar, 2013). Presently, some of the areas in which focus groups are used include, general research (Greenbaum, 2000), social sciences research (Marshall & Rossman, 2010), engineering (Neilsen, 1993) and medical research (Kitzinger, 1995), among many others.

One key feature that differentiates Focus Groups from other methods of qualitative data collection (e.g. observation, one-to-one interviews or questionnaire surveys) is that the information is gathered through group interaction (Morgan, 1988, Gibbs, 1997). This process allows communicative synergies (opinions, questions, comments on others' inputs, etc. (Ritchie & Lewis, 2003)) between the participants, that help to investigate how perception and decision-making process happen or change throughout the discussion (Duggleby, 2005).

Another characteristic of focus groups is that they facilitate the investigation of human thinking (e.g. why and how) and behaviour (Kitzinger, 1995:299; Lakshman, 2000:359), which can help in the recognition of meaning behind group assessments (Bloor et al., 2001). Furthermore, focus groups can provide data for creative-thinking, provision of solutions and more importantly, help engage with groups of people that might have been neglected within the society (Given, 2008).

In terms of their application, focus groups can be used during several steps within research projects. For example, they can be used during preliminary or exploratory stages when a hypothesis needs to be proposed or explored (Powell & Single 1996). They can also be employed in the development stages (Race et al., 1994), when questions need to be developed and explored (Litosseliti, 2003), and, finally, they could be used to assess the developments and their possible impact (Gibbs, 1997).

Advantages and Limitations of Focus Groups

Whether focus groups are proposed as a single tool or in combination with other methods for data collection, it is important to be aware of their advantages and limitations. In terms of advantages, Kitzinger (1995) explains that this tool for example, can help to encourage participation of individuals that might not feel comfortable being interviewed on their own. At the same time, the interactive nature of the method, which supports the multiplicity of views and emotional processes, allows the participants to assess and reconsider their thoughts and to relate to the experiences of others (Gibbs, 1997). Additionally, focus groups can be a relatively economical method for the collection of information in a quick manner and when the time available for research is limited (Lakshman, 2000; Creswell, 2007). Focus groups can also allow the exploration of issues as a group and not as individuals (Kitzinger 1995) and they can help in the identification of issues and concerns that were not previously identified in other studies (Lakshman, 2000).

Other advantages of Focus Groups are that it can promote acceptance among peers (Martin & Haninton, 2012) and when used as part of research projects associated with decision-making process, it can encourage empowerment (Race et al., 1994; Gibbs, 1999) by making participants feel that they are heard and their opinions have value.

Regarding to the limitations in Focus Groups, these ones can include for example, that the participants will not always be willing to travel to designated locations (Stewart & Shamdasani, 1990) or that last minute cancelations might occur. In terms of the process, it is important to have skilful moderators, preferably with some previous training or experience in conducting focus groups as this can help avoid unfair or shallow discussions (Blackburn & Stokes, 2000) or the addition of bias to the activity by influencing participants thoughts (Lakshman, 2000). A limitation regarding to the analysis of the collected data is that this process can be slow and time consuming (Schmidt, 2001) since adding reliability and validity to the results might require the involvement of additional people in the research (Krueger & Casey, 2000). Special attention is required at this stage since in here is where the success or failure of the activity can become apparent to the researcher.

Conducting focus groups can sometimes be difficult to organise (Gibbs, 1999), and if researchers foresee that the views of the participants will not achieve the desired outcome or if the participants do not want to discuss the proposed topic, then focus groups should be avoided (Morgan, 1998). Knodel et al. (1990), suggest that one way to avoid issues when conducting focus groups could be by having a limited number of ideas or concepts to encourage in-depth discussions. Additionally, the use of a recording machine or a transcriber could help the researcher to review the activity as many times as needed to avoid missing any crucial pieces of data (Gibbs, 1999).

The Role of the Moderator

An important factor in any focus group is the selection of a moderator, as this individual will be influencing the way the participants interact with each other and provide their input (MarketLink, 1989). A moderator's role requires a person with several interpersonal skills and personal qualities, including a good capacity for listening and a non-judgmental and open attitude (Gibbs, 1999). This in return can encourage trust among the participants and promote a more open dialogue (Litosseliti, 2003). Additionally, a moderator should have an adequate knowledge of the topic and a mildly-unobtrusive control over the participants and the activity (Kruger, 2002), while still being able to promote debate, challenge the participants and keep the session focused on the topic under discussion (Gibbs, 1999).

In some cases, there should be a pre-selection process to ensure that the moderator has the adequate experience (MarketLink, 1989). Finally, Gibbs (1999) explains that the control and direction provided by the moderator should depend on the goals of the research and that having two moderators would be an ideal practice since one of them can manage the activity, while the second one can take notes.

5.1.2 Typical Format of a Focus Groups

The literature offers many guidelines on how researchers could plan a Focus Group activity (MarketLink, 1989; Berg, 2001; Gibbs, 1999; Ritchie & Lewis, 2003; Eliot & Associates, 2005). Some of the most basic considerations needed to plan a focus group activity could be divided into the following two steps:

1. To clarify all kinds of necessary preliminaries. MarketLink (1989) explains that preliminaries, are all those questions related to the identification of a clear research purpose, which includes goals, expected outcomes, sampling, budget considerations, and deployment time.
2. To consider logistics such as: (1) selection of an ideal number of questions, (2) selection of a duration time per activity, (3) selection of a number of iterations, (4) deciding a number of participants, (5) selection of the type of participants, (6) identifying a location for the activities, and (7) selection of a moderator (Eliot & Associates, 2005).

5.2 Activity Design

The planning process for this research Focus Groups followed various considerations mentioned in section 5.1.2 as well as some additional logistics to enhance its adaptability to the project objectives:

1. Preliminaries such as the *goals, expected outcomes* and *sampling* have been explained in section 4.2.1 in chapter 4. In terms of the budget considerations, since there was no funding to support these activities, an expense of no more than £10 per activity in drinks and snacks for the participants was made. Additionally, there was no remuneration for the participants time or contributions as this has sometimes been found to be a counterproductive measure for the development of involvement activities (Head, 2009). In terms of the deployment time, all the participants were approached and agreed to take part in the activities ahead of their implementation and these were proposed to finish 45 days after the selected starting date in order to maintain standardization with the other three methods.

2. Regarding the *logistics*, these were approached in the following way:
    a. Duration time per activity: Each focus group was proposed to last no longer than one hour, after considering Kruger's (2002) planning methodology.
    b. Number of activity iterations: After having considered the activity requirements (Burgess, 1996), the number of iterations for these Focus Groups was agreed to be three.
    c. Number of questions: Several authors suggest that the number of questions in a Focus Group activity should be based on the intended duration of the activity (Morgan, 1998; Hennink, 2014). Considering that this activity was proposed to last just one hour, this number was agreed to be seven and divided between engagement questions (3), explorations questions (3) and finishing questions (1). All the questions proposed in this activity were reviewed by an expert in health policy prior to their deployment to ensure their adequacy and appropriateness (See appendix C2).
    d. Demographics: As mentioned in section 4.3.4 (chapter 4), the selected sampling strategy was chosen to be non-probability sampling (David & Sutton, 2011) as these activities were only interested in finding information from a specific case of study. A sample of 18 participants was selected in order to i) match the same number of participants among all the activities and ii) evenly divide the number (6 participants) and sex (3 males and 3 females) of participants among all three Focus Groups iterations. In each Focus Group iteration, the participants were explained the purpose of the activity, were given the option to ask questions (if needed), and consent forms were

delivered to be signed by all of them prior to starting the activity (See appendix C1).

e. Type of participants to involve: The participants were selected based on their relevance to the research purpose (*General practice users*) (MarketLink, 1989).
f. Identifying a location for the activities: The locations this activity was either the student rooms in Brunel University or the meeting area in the offices of Healthwatch Hillingdon. These places were selected in order to provide a comfortable space and to reduce possible negative associations with the space (Powell & Single, 1996)
g. Selection of a moderator: After having considered the main research requirements, the moderator was chosen to be the researcher himself.

Table 5.1 Summary of the Focus Groups logistics

Number of questions	7 questions
Duration of each activity	60 minutes
Number of activity iterations	3 iterations
Type of participants	General Practice Users
Number of participants	6 participants per activity evenly divided in 3 males and 3 females (18 participants in total)
Setting / Place	Healthwatch Hillingdon / Brunel University
Selection of a moderator	The researcher himself

Additional protocols selected for this activity (e.g. used recruitment strategies and data collection procedures) have been described throughout section 4.2 (chapter 4).

5.3 Data Analysis

At the end of the data collection phase, approximately 11,726 words of narrative text were produced. As mentioned in chapter 4 this data set was analysed using Frequency Lists Analysis, Concordances Analysis, Collocates Analysis (Baker, 2008) and Thematic Analysis. The following subsections will present and discuss the results found in each of them.

5.3.1 Frequency Lists Results

The frequency lists analysis (Baker, 2008) for the focus groups started by grouping all three data sets into a single corpus in order to increase the number of words. After conducting the frequency checks on the data sets, which included a stemming word option of a minimum word length of two letters and synonyms terms, the total number of words was reduced to 825. Table 5.2 shows the first 10 lexical lemmas identified in this analysis.

Table 5.2 Lexical lemmas found in the focus groups data set

Word	Count	%	Stemmed Words
GP	200	4.02%	doctor, doctors, doctors, GP, GPs
think	134	2.70%	think, thinks, thought, thoughts
going	120	2.41%	go, going, goes, gone, went
like	111	2.23%	like, liked, likely
time	86	1.73%	time, times
just	84	1.69%	just
know	80	1.51%	know, knowing, knows, knew
get	68	1.37%	get, gets, got
thing	64	1.29%	thing, things
really	62	1.25%	really

Whilst Baker (2008:56) explains that at this point, some of the most important concepts of the corpus should have already been revealed. This was not entirely evident in this analysis. For example, while words such as *GP, think, go, like, time* and *know* could signify references to aspects of the GP-patient relationship, other words such as, '*just', 'get', 'thing'* and *'really'* did not infer any manner of suppositions.

In order to make a much more accurate assessment of the role of these words in the data set, the use of clusters was sought. This cluster analysis used the first 10 words with a percentage higher than 2% with three additional words allocated on the left and on the right of the selected lemmas, as using a shorter word combination did not provide any evident results. In terms of the results, the most common patterns for the word 'GP' were found to relate to *reasons for going to the GP* and *the access to the general practice* (8 occurrences), *the professionalism* (including also empathic behaviour) (5), *continuity and discontinuity of the same professional* (3) and *rating of the service* (2). For the word 'think', despite of its higher frequency in the clusters (21), there was no evident pattern of repetition; instead this word was mainly used as a connector for expressing personal beliefs, thoughts or ideas. This was a similar case for the words ‘going’, ‘just’, ‘know’, ‘thing’ and ‘well’.

The word ‘like’ showed a small pattern related to the *insensibility of the system towards the patient* (2). The most common patterns for the word ‘time’ were found to relate to *consultation time* (11) and *waiting time* (2). The most common pattern for the word ‘get’ referred to *getting an appointment* (10). The patterns seen in the word ‘really’ suggested a use of this term for expressing *strong agreement or disagreement with the GP and their service provision* (11) or the *way practices are managed* (3).

5.3.2 Concordances Results

The terms selected for doing the concordance analysis (Baker, 2008) were ‘GP’ and all the stemmed possibilities (doctor, doctors and GP’s). The main reasons for this choice were that these words had the highest number of counts and statistical frequency throughout the whole corpus and that they had a direct correlation with the main activity questions.

This analysis produced a list of 200 lines of text with 123 of them showing associations to several concepts related to: *GP’s attitude* (5), *use of time* (9), *patient experience* (6), *medicines and prescription* (6), *GP professionalism* (6), *GP knowledge* (8), *sentiments of appraisal* (3), *information* (2), *personal feelings* (2), *diagnosis* (2), *preference in gender* (2), *understanding of GPs working circumstances* (3), *access* (4), *communication between GPs* (2), *referrals* (2), *perceived level of GP training* (2), *preference in age* (2), *reasons for going to the GP* (28) and *issues with the lack of GP continuity* (25). An additional isolated association found in the corpus was related to a suggestion of *encouraging GP continuity* (1). A partial visual representation of the first 20 lines of results from the focus groups concordance analysis can be found in Table 5.3.

Table 5.3 Concordances results found in the focus groups data set

Line	Context Horizon Left	KWIC	Context Horizon Right
1	of rude I would say because the	GP	told me “if you keep talking I can't
2	using the right words…I think	GP’s	should get more time for this kind of
3	3: I said it was brief because the	doctor	was just rushing, probably because he had
4	and I diagnosed myself then the	doctor	simply agreed without any detailed observation
5	there was this one time when the	doctor	did not even sit down, literally just didn't
6	do any good. politeness of the	GP	1: Yes, I think doctors are polite...yes 2: Ye
7	any good. politeness of the	doctor	are polite...yes 2: Yes, they are 3: They
8	I had really bad experiences with	GP	in the last year and just to be clear
9	just said ok we can treat so the	doctor	gave me really strong painkillers and I said
10	take medicines so I don't mind if	GPs	are not giving me medicine but at the same
11	lying condition 1I don’t think the	GP	does…not really 2: I'm trying to think about
12	stubborn so whenever I go to the	doctor	It's always after months of pain so they
13	most of the times when I go to the	GP	it is because of my daughter and they are
14	to spend on each person and	GPs	have to get it sorted and also the thing
15	is if my reason for going to the	doctor	is not that important, they're not going to
16	people that waste the time of the	Doctor	The NHS runs campaigns in which you
17	to your pharmacist instead of you	GP	for a cold and things like that…I think
18	all kind of trouble in terms of the	doctor	then have to basically almost pushed you o
19	lack of continuity because if the	doctor	has seen you before that helps them with the
20	pay that much attention 4: the	GP’s	make a judgement very quickly unless they

5.3.3 Collocates Results

Similar to the concordance analysis (Baker, 2008), the lemma ‘GP’ and all the stemmed possibilities (doctor, doctors and GP’s) were selected as the search terms. Additionally, parameters such as a span of 5 words on the left and on the right of the search term (as it is the default setting of the software) and a minimum word pattern of repetition of 3 counts were also selected. The initial list of results produced 106 types of collocates which, after eliminating grammatical words and using only lexical words, were reduced to 15. Table 5.4 shows the list of collocate types found in this analysis.

Table 5.4 Collocates results found in the focus groups data set

Rank	Collocate	Total Freq	Freq(L)	Freq(R)	Stat
1	saw	4	3	1	7.26837
2	believe	3	2	1	6.26837
3	seeing	4	3	1	6.33548
4	having	8	7	1	6.14284
5	interaction	3	1	2	5.92044
6	find	3	1	2	5.85333
7	spend	3	2	1	5.72780
9	give	5	2	3	5.06673
10	going	5	4	1	4.50283
11	go	10	7	3	4.44240
12	time	8	3	5	3.97291
13	get	5	1	4	3.82091
14	see	4	3	1	3.78528
15	feel	3	1	2	3.68340

From this analysis, it was possible to evidence several comments related to concepts such as: *Access to the General practitioners* and more importantly to t*he possibility of having the same GP*. Additionally, there were some complaints about the *length of time the GPs would dedicate to each patent*. Other comments also pointed some of the reasons why patients would visit their GP (e.g. feeling sick, getting a referral, asking for prescriptions). A third discourse was found to be related to the *professional skills of the GP* (e.g. the provision of options for treatment and referrals) and the *attitude some GPs might show towards patients*. One final discourse was found to be related to the amount of *appraisal that some patients would have towards their GPs or their service*. Figure 5.2 displays the relationship emerging between the types of collocates identified in this data set.

Figure 5.1 Collocation networks identified in the Focus Groups data set

5.3.4 Thematic Analysis Results

During the course of three focus groups, participants shared their experiences and opinions about the general practice consultation. This data was useful for identifying issues with the general consultation and opportunities for improvement. The following section outlines the main themes and subthemes emerging from the thematic analysis (Clarke and Braun, 2006) of the resulting transcripts. The results of this analysis were organised into 11 subthemes and 3 main themes (See table 5.5).

Table 5.5 Results identified in the focus groups thematic analysis

Codes	Subthemes	Themes
· Not looking for underlying causes · No understanding of patient's idea of the problem · Not checking real reason for visit · Patients do not like GPs looking googling information · GPs do not deal with more than one issue per consultation · GP do not do check-ups · GPs give treatment quickly · GPs do not demonstrate competency · GPs do not demonstrate confidence · Female GPs have better listening skills than male GPs · Friendly GP does not mean competent GP	Professional Approach	GP-patient relationship
· Various GPs offer various opinions · Different GPs does not build confidence · Close observation is important for good practice · Same GP builds doc-pat trust · Lack of knowledge about medicine is hard to trust · Lack of trust produces issues with communication	Trust	
· No human connection is a big issue in GP consultation · Preference for female GPs over male GPs · Preference for older GPs over newcomer GPs · GP was caring · GP was a good person · GP is nice · GP was an engaging person · GPs are good at putting people at ease · GP was polite · GP was considerate · Some people would like to feel they are treated seriously · Patient feeling like a number	Empathy	
· GPs have good listening skills · GPs hear but do not listen to patients · Problems in doc-pat communication · GPs have a good level of language skills · Some patients have difficulties talking to GPs · GPs sometimes give more information than required · GPs do not provide enough information	Communication	

· Interaction with GPs is fine		
· No concise diagnosis, patients not reassured · Some patients do not need reassurance · Some patients need reassurance about their medications	Reassurance	
· GP not taking the time to explain the reasons for the issue · GPs are rushed because they have a lot of patients · GPs are pressured to discharge people faster · Issues are not the GP's fault but the number of patients · Patients would like to have more time with their GPs · Sense that the consultation was short · Sense of consultation been brisk · Sense of feeling rushed	Duration of Consultation	Resources
· Some people believe general practices have good access · Some patients believe that waiting lists are too long · Not enough access to the service · Access to GP's is hard if issue are not emergencies · Some people do not agree with time slots that some general practices provide · Too few doctors · Too many people waiting for doctors · Booking appointments can take a long time · Encourage GP continuation · No GP consistency causes frustration in patients · Able to choose gender of the GP · General practice access is easier if organised in advance · General practice access is not always patient friendly	Service Accessibility	
· GPs do not have an incentive to go the extra mile · Some new GPs are more engaging · GPs become desensitized after seeing so many patients · Sense that some GPs try hard · New GPs are more motivated to be friendlier	Motivation	
· Low number of resources make GP's job more difficult · Lack of resources for GP services · GPs do not have communication channels between them · GPs ask engagement questions to patients to find ways around the poor internal communication · GPs are under a lot of pressure from the system	Systematic issues	Management
· Development of software tools for bookings · Development of software tools for patient information · Patient records should be better organized and regulated · Better online way to book appointments · Better ways to keep personal files of the patients · Have more specialised GPs · Systems should replace patients repeating themselves · There should be a better system at the reception	Administration	
· Service provided is good · Service is not good enough · Feeling satisfied with the consultation · Feel disappointed · Sense of a pleasant experience · Acknowledgement of good customer service · Feeling frustrated · Service is pointless	Service Quality	

GP-patient relationship

This theme includes five sub-themes and suggested some aspects of the interaction during medical appointments between GPs and patients.

(1) Professional Approach

The professional approach suggested certain tasks or actions GPs undertake in consultation. For example, there were some comments suggesting that GPs often do not look for the underlying causes of illness: *"if you explain it to them they will try to treat the symptoms rather than try to find what is actually wrong with you...never the underlying cause"*. Another particular issue that patients found disconcerting and confusing was that some GPs seemed to 'Google' information on their computers, therefore making patients unsure about the GP's real knowledge: *"wait…you said before that they Google things, so you trust their judgement but why are they Googling things…"*. Another participant explained that 'googling' information made GPs look less competent: *"but effectively when GPs Google stuff, I feel it doesn't demonstrate their competency"*. Finally, a participant pointed out that some GPs do not make any effort to physically check patients: *"I don't know if this is only my experience but a GP has never really done a check up on me, they never touched me, they just only asked me questions"*.

(2) Trust

Participants believed that building trust was related to continuity of the GP and at the same time this was positive as it helped patients to develop trust in the understanding of their issues: *"if I have seen them five times and they gradually have seen the symptoms develop, they understand the progress of the problem, then they can give you a good answer"*. One of the participants believed that not having GP continuity would not help to build trust, *"seeing the same doctor builds your trust: "if you were treated by this doctor in the past then you are more likely to like this doctor again"*. Additionally, other participants correlated the GP knowledge with trust: *"they have to look like they know otherwise how you are going to trust them"*.

(3) Empathy

In terms of empathy, participants believed that this attitude was encouraged if GPs were found to be good people, caring, nice, engaging, polite or considerate: *"when I go to the GP, it is for my daughter and they are always very caring with her"*. Additionally, a participant believed that female GPs were more empathic than male GPs: *"anytime I have dealt with any of my female GPs the interaction is much more engaging and I feel they are listening"*.

(4) Communication

When participants described their experiences of communication with GPs they identified aspects such as their listening skills: "*there is a difference between listening and hearing...they hear you but they don't listen to you"*. Also, a participant commented on having difficulties with communicating in the same language with some GPs: *"I mean the language with the GP as not been able to explain things"*. Some other participants referred to the communication as part of the interaction and described this as a way to improve the overall experience: *"you could improve people's overall experience by interacting with GP"*.

(5) Reassurance

In terms of reassurance, some participants believe this was important mostly for medications: *"for example I am lactose intolerant and, they gave me a medicine that contained this substance so it was worse for me... so you know, when I go there I have to ask them if it is going to be fine because I already had allergic reactions in the past with similar components"*. On the other hand, some other participants believed this was not that important: *"like whatever they tell me I just take it on board there is no need to remain standing for any longer than that... I don't need to feel special"*.

Resources

This theme includes three sub-themes and suggested some considerations about the human and non-human resources required in a practice.

(1) Duration of consultation

The participants made several observations regarding the length and management of consultation time. In terms of length, for example, a participant commented that some GPs did not allowed him to properly explain the symptoms: *“I had a bad experience because there was not enough time to explain what is wrong”*. Another participant suggested that the short consultation had an influence on the check-ups been superficial: *“I think that these things correlate between each other the shortness, the prescriptions and the superficiality of the GP”*. In terms of the management of the consultation time, a participant explained that GPs would rush patients out of the consultation because of the high number of patients in each practice: *“I don't think rushing is the GP’s fault. I think it is the fault of the NHS who is sending too many patients to one GP per day*”. Another participant complemented this by saying that the GPs would behave like this because they were under pressure from the system: *“there's a huge pressure on GPs to get you out of the door in 10 minutes”*. Another important remark about this issue was made by a participant who suggested that engaging with the GP was more important than the actual time: *“I think it's more about the quality of the impact of engaging with your GP than the amount of time that you actually get to spend with them”*. Finally, many participants made comments that suggested having more time in the consultation: *“I would like to have more time with my GP and not feel I've been rushed out at all”*.

(2) Service Accessibility

The accessibility to the service was another area of the general practices that was heavily discussed and with different points of view among the participants. For example, some participants suggested that the access was relatively easy for them: *“I think I'm positive here...there are multiple places where I can go near to my living place...the waiting list it's not too long and mostly I can get an appointment for the same day”*. Instead, those participants that did not agree with this view associated bad accessibility with complaints related to the waiting lists: *“I know that waiting lists in here are something that is incredibly unsustainable”*. Another participant criticised the accessibility of time slots available to patients: *“so you need to go very early in the morning if I want to see a doctor”*.

An additional part of this discussion also focused on suggestions to these issues. For example, a suggestion made by one participant was related to the encouragement of GP continuity: *"I will say to have one personal GP to the patients and all the problems will be solved"*. Another participant expressed a wish to be able to choose the gender of the GP: *"I want to say, if you have a female problem to have an option to see a female doctor"*.

(3) Motivation

The motivation of GPs for doing a good job was also related to the resources. For example, a participant believed that general practices do not incentivise their GPs enough to do more than the minimum required: *"part of the problem is that if you go to the doctor and they give you bad treatment they don't lose anything… it is not like a business, there is no incentive"*. Another participant associated the loss of motivation with GPs becoming less sensitive to patients' problems over time: *"doctors in their daily interaction deal with a huge volume of patients and they do become desensitised to most of the issues because they deal with them every day"*.

Management

This theme includes three sub-themes describing some observations about the management of some General Practices.

(1) Systematic Issues

In this sub-theme participants mentioned how issues external to the consultation could affect the performance of the service. For example, a participant associated the lack of resources with GPs having greater difficulties in performing their jobs: *"so the doctor is under a lot more pressure to be able to look after the patient because they don't have the resources"*. Other participant suggested that the practices do very little to help GPs to communicate between each other which in turn, it increases the waste of consultation time by asking 'unnecessary' questions: *"effectively what they are trying to do is to circumvent that lack of internal communication by using engaging questions like, how are you? What is going on with you? and why are you here?"*.

(2) Service Quality

This subtheme reflected comments of some participants that were happy with their GPs, while others expressed dissatisfaction and unhappiness with their service. Many related the service quality to successful treatments: *"the fact that the treatment worked really quickly makes me look back at the visit and say that is great"*. Additionally, there was also a link between being given prescriptions and the satisfaction with the visit: *"there was no prescription when I wanted one*".

(3) Suggestions to Management

In terms of suggestions for improvement, participants mentioned, for example, the development of software tools for bookings appointments: *"I think it would be easier to go more and more digital…for example making the booking more transparent so if we do it from the internet we can see all the time slots"*. Another suggestion was a better organisation of patient records between GP's: *"general practices should have a much better database system where patient information is passed onto each other and then tag those patients according to their need"*. One participant suggested having more specialised staff on site: *"…what about having specialists? So, if you want pills then you go straight to see the specialist"*.

5.3.5 Differences in Results Between the Various Methods for Analysis

Frequency lists Analysis: This analysis identified 10 different discourses that uncovered issues, 1) within the general practice consultation (e.g. *GP professionalism*) and 2) within the management of general practices (e.g. *waiting times or getting an appointment*). It was also evidenced that most of these issues were related to the 'management of the practice and the resources availability' (at least 7 of them) than to the 'doctor-patient communication and relationship during routine visits'. Additionally, some other discourses that were not mentioned in the other quantitative analyses were: *Rating of the service, Insensibility of the system towards the patient and strong agreement or disagreement with the GP and the service provision*.

Concordances Analysis: The concordances provided a much higher number of results (20 discourses) than those observed in the other methods. Additionally, in this analysis there were at least 12 discourses that were not mentioned by the other quantitative analyses. This could be because the nature of the concordances allowed the researcher to see in which ways the selected word(s) were used in the data set. Some of the discourses identified made references to the actions of GPs (e.g. *prescriptions, referrals* and *diagnosis*), patient's emotional responses towards the service provision, patient's perception of the training and knowledge of GPs in consultation and additional resources that practices should encourage further (e.g. *choice of gender and age*).

Collocates Analysis: This analysis found 6 different discourses, all already identified either in the frequency lists or the concordances. The most relevant discourses from this analysis that were found to be related to the search question of this activity were the *professional skills of the GP* (such as the provision of options for treatment and referrals), *the attitude some GPs might show towards patients,* and a *sense of appraisal towards the GPs or their service*. It is believed that, although strong correlations were found between the identified discourses, it was not possible to draw a fully comprehensive picture of the results.

Thematic Analysis: In contrast to the quantitative analyses, this analysis provided three large themes (*GP-Patient Relationship, resources* and *management*) that re-grouped several of the identified concepts and were helpful in trying to explain several comments the participants made during the focus groups. Additionally, this type of analysis recognised several concepts that were not previously identified and helped to, firstly, complement the overall picture of the relationship between the GPs and patients during routine visits (e.g. *communication* and *patient reassurance*) and secondly, complement the views about how participants perceive the current management of practices (e.g. *Systematic issues, Suggestions to Management, Service Quality* and *motivation for GPs*).

5.4 Discussion

The focus groups identified several problems in the general practice that can be divided into issues related to the *GP-patient relationship and issues related to the general practice management.*

With regard to the issues related to the GP-patient relationship, there was a further division into the *professional skills exhibited by the GPs and the personal relationship* they would try to build with their patients. Professional skills would refer to some consultation activities such as check-ups, prescriptions, treatments, referrals and the inquiry beyond superficial reasons to explain why patients would access the service. Here, a variation in comments was discovered suggesting both competent and incompetent performance of their jobs, although this perception would be connected to the real need for patients to access the service and the expectation they have of the service. As it was explained in chapter 3, most of these activities are a vital part of the role that GPs have to perform (Gregory, 2009). Additionally, these roles help patients to evaluate the satisfaction, the quality, and the performance of the health service (NHS England, 2016) that has been provided to them.

Meanwhile, the concept of personal relationship would be related to the attitudes and behaviours that the GPs would show towards their patients. Here, a difference in comments was discovered suggesting positive and negative attitudes from GPs that would result in an influence on the trust that patients have towards them. The literature has shown that the GP-Patient relationship is understood as the '*terms of mutual respect, knowledge, trust, shared values and perspectives about disease and life'* (Gupta, 2011:2) and that GPs could better develop this kind of personal skills by following the aforementioned consultation models explained in chapter 4. The importance of encouraging trusting relationships between GPs and patients is that this can help in the communication between both parties (Little et al., 2001), the reduction of referral rates (Howie, 2004) and better perception of healthcare delivery (Safran et al., 1998), among other advantages.

On the other hand, the association with the general practice management, helped to better understand the behaviours and dispositions that some people develop before entering the consultation. The most mentioned issues with regard to this area of the service were the booking of appointments, waiting times, the length of consultation time and the almost impossibility of being treated consecutively by the same GP on separate visits, to mention a few. The literature has shown that these issues are also used as indicators for patient satisfaction (Thiedke, 2007) and that practices could avoid them by readjusting the process, culture and physical environment in which these activities are currently organised (Reiling et al., 2008).

Summary

In this chapter, a Focus Group activity was implemented to explore the issues and opportunities of *Effective communication and relationship between GPs and patients*. The purpose of this activity was to describe the planning and implementation process of this tool as well as to evidence its anticipated strengths, weakness, and the results that were found after using selected methods for data analysis.

Chapter 6 – Future Workshop / Rich Pictures

Introduction

This chapter addressed the planning, implementation and results of the second Human-Centred Design tool selected to perform a large ethnographic activity to explore the challenges and opportunities when proposing public involvement activities: Future Workshops / Rich Pictures.

This chapter was divided into four sections. Section one covered the most relevant literature about what is Future Workshops / Rich Pictures. Section two explained the activity design and those decisions related to the planning of the tool. In section three, the results derived from the investigation of the case for study – *Communication and relationship between GPs and patients* – are described. Lastly in section four, these results are discussed.

6.1 Activity Approach

6.1.1 Introduction to Future Workshops / Rich Pictures

According to Giacomin (2014:614) Human-Centred Design not only borrows tools from other disciplines, but it can create '*new approaches which can emerge from various design practices'*. This is the case of 'Future Workshop / Rich Pictures'. On the one hand, Future Workshops allow people to be involved in the decision-making process of public planning (Jungk & Müllert, 1987). On the other hand, Rich Pictures is a technique known for encouraging the identification of problems and conceptualisation of solutions or plans through flexible graphical drawings (Checkland, 1981; Horan, 2000).

Future Workshops

Future Workshops, is a technique developed by Jungk & Müllert in 1987, to enable more participation from citizens with various backgrounds and scarce resources. The initial goal of this activity is to allow people to influence future decision-making through collective problem solving (Lauttamäki, 2014) that encourages, individual intuitions, synergies between groups and their potential to contribute to the creation of alternatives (Valqui, 2006).

Future Workshops has been applied in several practical areas of knowledge more often than in academia, therefore, there is a current lack of reported results in publications (Valqui, 2006). Some of these areas are, social sciences (Lauttamäki, 2014), software development, product design, and user experiences (Wilson, 2011), as well as other topics. Lauttamäki (2014) explains that when Future Workshops are implemented in projects related to the social sciences, they can provide a mean for collecting and refining data that might be directly relevant to the participants. Meanwhile, when used in product development, this tool can become a *transformational method* which allows issues to be identified, solutions to be provided, and then a produce chain of steps between those problems and their solutions (Löwgren & Stolterman, 2004).

The current uses of this tool are no different from other participatory tools that allows the participants to gain shared understanding of a problem, learn how other individuals perceive these problems and then build a structure or a plan in which these issues are expressed and solved (Bodker et al, 2014). Lastly, Future Workshops is a tool known for being used in association with other tools such as mock-up techniques, Focus Groups (Ihlström et al, 2005) and Brainstorming since, it encourages an empathetic-design process that finds solutions for specific problems through observation and graphic representation of possible solutions (Leonard & Rayport, 1997; Berkowitz & McCarthy, 2013).

Rich Pictures

Rich Pictures is a tool proposed by the *Checkland Soft System Methodology* to represent in a graphic manner a problem or a concept (Horan, 2000). In this design method, the use of drawings helps to understand human actions and to uncover sentiments and conflicted understanding of an issue (Bell & Morse, 2012) through the interaction between the actors and the particular system (Monk & Howard, 1998).

A rich picture is commonly constructed while interviewing people (Monk & Howard, 1998) and this will usually be done as part of the development process as well as in the beginning of it (Bell and Morse, 2012). In rich pictures, there are no constraints or rules and the nature of these can be of graphical representation, text or symbols that represent a need or situation (Horan, 2000). These representations will continue to follow an iterative process in which people's understanding are refined through a broad view of the situation being studied (Monk & Howard, 1998). Horan (2000:258) explains that the pictographic nature of this tool does not require participants to be experts in drawing; providing a better option to other graphical techniques such as flow diagrams.

Since there are no restrictions in Rich Pictures, Flood & Carson (1993) explain that it is important to have annotations or explanations. In return, this helps all the participants to have a clear image of the discussion and to see the different perspectives among them (Monk & Howard, 1998). Furthermore, if small drawings are used, this can allow the group to identify several problems in a single picture (Berg, 2014). Some alternative methods used with rich pictures include brainstorming, storyboard and paper prototyping (Monk & Howard, 1998).

Lastly, when doing Rich Pictures, researchers should keep in mind to i) only observe and not speak to the group until the activity is completed, ii) not comment on the work of the participants, and iii) move from one point to another to see the group from different angles (Bell & Morse, 2012).

Although Future Workshop and Rich Pictures have different elements and processes, using both methods as a single tool could benefit the design research process by identifying and exploring all the possible issues of a particular situation and then proposing solutions (i.e. envision the future) that could not be identified without the help of the physical elements provided by the graphical representations, text or symbols (Dunning-Lewis, 1992; Wilson, 2011).

Advantages and Disadvantages of Future Workshop / Rich Pictures

Future Workshop and Rich Picture have advantages and limitation of their own. For example, Wilson (2001) explains that Future Workshops can help to gather the knowledge of different stakeholders in one place while allowing them to be involved in the process. Also, future workshops allow other tools (e.g. brainstorming, rich pictures) to work in combination for better results.

Another advantage is that Future Workshops are based on *Social Learning*, which can help people to find new solutions and present them in different forms (Apel, 2004). Additionally, social learning can encourage confidence through collaboration by helping others to understand complicated issues, while also improving communication (Ditrichova, 2015).

Regarding to the limitation of Future Workshops, a target audience needs to be gather together in one place, and it requires a facilitator with good social skills (Wilson, 2011). Additionally, the facilitator should ensure that an enough number of ideas are provided in each of the phases of the activity before moving onto the next steps (Valqui, 2006). Wilson (2011) explains that other limitation of Future Workshops could be for example the difficulty in scheduling sessions which can make this activity become costly and increase its implementation time.

Regarding to the advantages in Rich Pictures, Johansson & Linde (2005) explain that the graphical aspect that this tool provides a playful element to the activity, making it less of a task that needs to be completed (Johansson & Linde, 2005). Additionally, there are no restrictions on the content allowed in the drawings, participants can make amendments at any point of the activity and there is no need for a high level of expertise to interpret the data (Horan, 2000).

On the other hand, typical limitations of rich pictures are: A difficulty in representing everything visually, it can be a time-consuming activity requiring many revisions; and some elements, issues and aspects could be left out of the picture or might be difficult to characterise (Monk & Howard, 1998).

6.1.2 Typical Format of a Future Workshop / Rich pictures

In terms of conducting Future Workshops, the literature has not yet reached an agreement on the number of steps required to plan the activity. Some authors have initially suggested only three steps (Jungk & Müllert, 1987; Bødker et al., 1993; Tollmar et al., 1996), although others believe there should be between four or five steps (Schuler & Namioka, 1993; Wilson, 2011), depending on the purpose of the activity. The three basic steps for planning a Future workshop are (Jungk & Müllert, 1987): (1) *The preparation phase*: Where details such as defining the goal, identifying and gathering the participants and other preparatory arrangements have to be organised; (2) *The critique phase*: Where the participants are asked to critically investigate and examine all possible issues concerning the proposed problem; and (3) *The implementation phase*: Here, the group will discuss and evaluate the feasibility of the solutions and will propose an action plan.

The other additional steps are (4) *A fantasy phase*: Here, participants will be asked to visualise future possibilities to solve the identified issues. This step would usually be performed after step two; and (5) *The follow-up phase*: This would be the final step, where the proposed action plan (if used) would be adjusted according to the new requirements of the project (Schuler & Namioka, 1993; Arvidsson et al., 2002; Bødker et al., 2004; Wilson, 2011; Valqui, 2006).

Similar to Future Workshops, Rich Picture do not have a universal standard on how they should be planned (Monk & Howard, 1998). Instead, various guidelines can be found in the literature for researchers to follow according to their needs. For example, OpenLearn (2014) suggests that since rich pictures attempt to provide a detailed description of a proposed situation, it is important to make drawings or to use words (that could not be represented by a sketch) as much as possible, even if the participants are not certain about them.

Additionally, if sketching or drawing is not a skill found among the members of the group, the researchers could provide some visual aids, such as symbols or descriptions of actions (Waring, 1989). Providing these aids is not always ideal, but they are a good way to help participants start the conversation (Checkland, 2000). Monk & Howard, (1998) also seem to corroborate these guidelines, whilst suggesting elements such as including a structure and process, discussing concerns, and using understandable language and any pictorial or textual cues that suits the activity purpose.

6.2 Activity Design

The planning process which was followed when organising the Future Workshop / Rich Pictures for this research were based on the steps described in section 6.1.2 of this chapter:

(1) The research purpose, expected outcomes, the length of the activity and the number of iterations can be found throughout section 4.2 (Chapter 4).
(2) Stationary materials (e.g. pen, papers, markers, etc.) and textual description of actions were provided to the participants, in an attempt to reduce the times required to complete the activity whilst trying to get the most valuable data.
(3) The participants were then asked to organise written descriptions of the steps in a GP consultation based on their experiences and to add or remove necessary descriptions in order to complete the picture (See appendix D2). For this task, they were given 15 minutes.
(4) The participants were asked to review the steps once again, whilst adding issues believed to come up in a GP consultation. For this task, they were given 20 minutes.
(5) The participants were asked to provide solutions to these issues. For this task, they were given 20 minutes.
(6) Finally, the participants had to explain the whole picture, they created including the identified issues and proposed solutions, to the moderator. For this task, they were given 5 minutes.

Table 6.1 Summary of Future Workshops / Rich Pictures logistics

Number of questions	1 task / 3 questions
Duration of each activity	60 minutes
Number of activity iterations	3 iterations
Type of participants	General Practice Users
Number of participants	6 participants per activity evenly divided in 3 males and 3 females (18 participants in total)
Setting / Place	Healthwatch Hillingdon / Brunel University
Selection of a moderator	The researcher himself

As mentioned in section 4.3.4 (chapter 4), the selected sampling strategy was chosen to be non-probability sampling (David & Sutton, 2011) as these activities were only interested in finding information from a specific case for study (Lucas, 2014). A sample of 18 participants was selected in order to i) evenly divide the number and sex of participants among all three Future Workshop / Rich Pictures iterations and ii) match the same number of participants among all the activities. In each Future Workshop / Rich Pictures, the participants were explained the purpose of the activity, were given the option to ask questions (if needed), and consent forms were delivered to be signed by all of them prior to starting the activity (See appendix D1).

Additional protocols selected for this activity (e.g. used recruitment strategies and data collection procedures) have been described throughout section 4.2 (chapter 4).

6.3 Data Analysis

At the end of the data collection phase, approximately 8,557 words of narrative text were identified, making it the second largest data set of all four activities. As mentioned in chapter 4 this data set was analysed using Frequency Lists Analysis, Concordances Analysis, Collocates Analysis (Baker, 2008) and Thematic Analysis. The following subsections will present and discuss the results discovered through each of them.

6.3.1 Frequency Lists Results

The frequency lists analysis (Baker, 2008) for the Future Workshops / Rich Pictures activities started by grouping all three data sets in a single corpus in order to increase the number of words. After doing the frequency check on the data sets, the number of words was reduced to 470, which also included at least 18 words with a frequency above 1%. Table 6.2 shows the first 10 lexical lemmas identified in this analysis.

Table 6.2 Lexical lemmas found in the Future Workshops / Rich Pictures data set

Word	Length	Count	(%)	Similar Words
GP	2	170	4.26	GP, GPs, Doctor, Doctors
think	5	108	2.4	believe, consider, guess, think, thinks, thought
patient	7	89	2.37	patient, patient', patients
ask	3	111	2.29	ask, asked, asking, asks, demand, demand', need
go	2	122	2.1	become, becomes, becoming, fail, get, gets, getting, go, going, last, lead, leave, leaves, lived, move
issue	5	91	1.66	consequence, effective, effects, issue, issues, number, proceed, proceeds, public, result, results, subjective
check	5	78	1.54	agree, agreed, check, check', checked, checking, checks, condition, conditional, confirms, determined,
like	4	58	1.43	care, like, potential, potentially, probably, similar
get	3	121	1.23	beginning, cause, come, comes, coming, experience, experiences, find, finding, get, gets, getting, let, lets
know	4	54	1.18	bed, bed', experience, experiences, know, knowing, learn, letters, lived

From this table, the words *GP, think, patient, ask* and *go*, were the lexical lemmas with the highest number of counts and percentages from the whole data set. Similar to all the previous analyses of the same kind, these words, although potentially relevant to the activity question, did not imply concepts that could be used to make educated guesses about the context in which they appeared.

A subsequent cluster analysis used the same words appearing in table 6.2. Additionally, a window size of four words allocated on the left and on the right of the lemma was used. The reason for this change was that there were no evident results when using smaller sized clusters or when placing the cluster solely on one or the other side of the lemma.

The most common patterns for the word 'GP' were found to relate to *reasons for patients going to the GP* (6 occurrences) and *patients discussing or asking questions to the GP* (5). The words 'think', 'issue' and 'like' did not show any evident patterns of repetition, since these terms were used mainly as connectors for expressing personal beliefs, thoughts or ideas. The main context, in which the word 'patient' was used, was to describe actions or steps taking place in the consultation (e.g. patient comes into the room, GP checks the available files of the patient). The word 'ask' showed small patterns related to *GPs asking patients to make another appointment* (4) and *GPs asking the patients enough questions* (3). The word 'go' was mainly used to explain several reasons why patients would go to visit a GP. The recurrent context, in which the words 'check' and 'get' were used were to describe other actions or steps happening in the consultation (e.g. GPs do a physical check if needed, GP checks the available files of the patient and GPs ask you to make another appointment). Finally, the word 'know' was mainly used in relation to a *lack of understanding*.

6.3.2 Concordances Results

As with the other analysis of this kind, the terms selected for conducting the concordance analysis (Baker, 2008) were 'GP' and all the stemmed possibilities (doctor, doctors and GP's). Additionally, the parameters used in this concordance analysis also used a search of all the selected words and a window size of 45 characters. The analysis produced a list of 170 lines of text, which also confirmed the frequency lists results for the selected words. A partial visual representation of only the first 15 lines of results from the concordance analysis conducted on this data set can be found in Table 6.3.

Table 6.3 Concordances found in the Future Workshops / Rich Pictures data set

Line	Context Horizon Left	KWIC	Context Horizon Right
1	are 4: When I enter into the room, the	GP	is just looking into the file 2: Every
2	time I go in there is a different	GP	, even if I book with the same.
3	case if I want to book the same	GP	they try to allocate it to me 2: Yeah
4	Again, for the fourth time to the fourth	doctor	the same problem and why she was
5	5 1: sure 6: then it could be "	GP	checks the available files of the patient"
6	wasted…well is not an issue if the	GP	does not have your files because you
7	am saying, the first one is saying the '	GP	check the available files', but if there
8	is an interesting question because some	Doctor's	are introducing telephone consultation
9	For example, I already had one with my	GP	, not a Skype visit but a telephone
10	had telephone consultations with the	GP	… PR: OK, in person. So, then I think
11	person. So, then I think is "Patient and	GP	great and that patient sits down" 1: then
12	sits down" 1: then I think it would go "	GP	ask engaging questions for the visit" 6:
13	some doubts about this one because	GP	sometimes are just 'what do you want'
14	they just ask you some questions…the	GP	are 'what do you want? Why are you
15	issue. 1: So we could say sometimes	GP	don't ask engaging questions or do not

From the i170 lines of text that resulted from the concordance analysis, only 64 showed patterns that allowed further associations. For example, some of the patterns found were related to *professional skills* (13), *attitude* (10), *resources* (10), *continuity* (7), *access* (4), *referral* (4) and *empathy* (3). Other associations (with less numbers of repetition) suggested *appraisa*l (2), *patient experience* (2), *communication* (2), *reason for going* (2) and *management* (2).

This analysis also found some isolated fragments of data suggesting issues such as: *Issues with patient files* (1), *GP stress* (1), *few treatment options* (1), *issues with the consultation time* (1), *issues with the prescriptions* (1), *perception of patients* (1), *preference about GP's Gender* (1) and *perceived GP knowledge* (1). Finally, some comments related to potential solutions that were also found included *more resources* (2), *better incentives for GP's* (1), *GP's given support* (1), *patient satisfaction surveys* (1) and *standardised services* (1).

6.3.3 Collocates Results

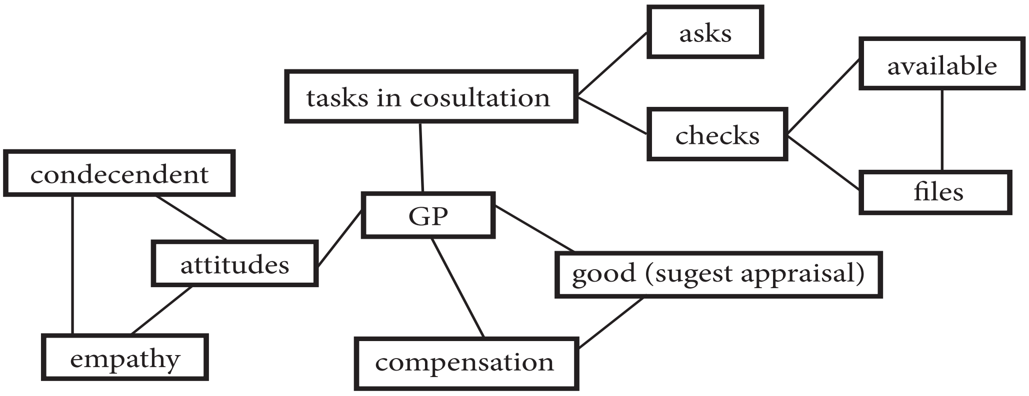
The lemma GP and all its stemmed possibilities (doctor, doctors and GP's) were used for this collocate analysis (Baker, 2008) as the key words in context (KWIC) due to their relevance to the research topic and to maintain consistency with all the other analyses. Additional parameters such as a window span of five words on the left and right of the search term, only using words with a minimum of three frequency counts, and the use of lemmas with a statistical measure higher than 5% (no grammatical words) were also used. The result of these filters narrowed down the initial list of 98 collocates to just 9 (see table 6.4).

Table 6.4 Collocates found in the Future Workshops / Rich Pictures data set

Collocate	Total Freq	Freq(L)	Freq(R)	Stat
condescending	3	1	2	6.63940
compensation	3	2	1	6.63940
attitude	3	1	2	5.63940
good	5	3	2	5.56901
asks	5	0	5	5.56901
available	6	0	6	5.46947
empathy	3	2	1	5.31747
checks	5	1	4	5.20644
files	11	3	8	5.05443

The next step was to look at the discourse patterns in these words. Here, it was found for example that lemmas such as ‘condescending’ and ‘empathy’ had a *negative connotation* and were related also to the lemma ‘attitude’. The lemma ‘compensation’ was used to suggest *compensation or reward schemes in General Practices*. The pattern found for the word ‘good’ suggested an *appraisal of GPs and their services*. The word ‘ask’ was used in reference to the *GP’s action of asking patients questions about the reason for their visit*. A final discourse that was also found related to the words ‘available’, ‘check’ and ‘files’, suggested various actions that the GPs would take during a consultation. Figure 6.1 shows the relationships believed to exist between the types of collocates found in the Future Workshops / Rich Pictures (FW/RP) data set.

Figure 6.1 **Collocation networks identified in the FW/RP data set**



6.3.4 Thematic Analysis Results

During the three future workshops/rich pictures, participants provided their views on how they believed general practice consultations were carried out. They also identified a number of psychological and physical challenges involved in the delivery of this service and suggested ways in which some of these problems could be improved if an unlimited number of resources were made available. Some of these concepts were found to overlap across themes. The following section outlines four themes and nine subthemes emerging from a thematic analysis (Clarke and Braun, 2006) done in these workshops. The results of this analysis were organised into 8 subthemes and 4 main themes (See table 6.5).

Table 6.5 Results identified in the Future Workshops / Rich Pictures thematic analysis

Codes	Subthemes	Themes
· Different GP every time · New prescription means new appointments · Not receiving information from GP · No consistent level of service · Negative. Impersonal course of treatment · Feeling of being lost in the system · GP personality is linked to Quality of service · GP shows lack of knowledge · Condescending attitude towards patient · Lack of standard procedure at GP practice · Lack of services available at the GP practice · Lack of relationship with GP · Lack of knowledge displayed by GP	Problems Faced by Patients	GP and Patient problems
· No willingness to wait for services	Problems Caused by Patients	
· High level of GP stress due high volume of work · People don’t comply with physical checks if they don’t like the GP	Problems Faced by GPs	
· GPs will suggest pain killers for everything · GP jumping to diagnostic conclusions · GP condescending · Lack of engagement with patient · Lack of empathy from GP · Lack of communication from practice · Poor time management · Poor patient service · Poor course of treatment · Poor communication	Irresponsible Behaviour of GPs	GP issues and recommendations for better service
· Enough information given on patient’s condition · Impersonal service from GP · Quality of GP service is linked to job satisfaction · Positive. Engagement with patient · Privacy important during consultation	Improvement by GPs	

· Specify the kind of GP you want before consultation · Giving patients a voice in the practice seen as a positive · Level of communication with GP linked with confidence patient has in the service · Order of procedure dependent on patient · Opinion of kind of checks GPs should conduct		Enhanced Patient Involvement
· Longer appointments · Be able to call GPs from another centre · Contact patient · Post or email a summary of the consultation · NHS could use more specialists · Hiring more GPs · Having nurses on site all the time · Have more human-driven training · More proactive approach to patient issues · More specialists' consultations · Waiting at GP service · Use of reviews in choosing GP practice · Training could improve service · Technology improving efficiency in the NHS · Tailoring GP service to individuals · Support services for GPs · Speed of referral · Situation where procedural step is not possible · Rewarding GPs · Reward practices · Communication of data improves the service · Distance consultation · Incentives for GP to attend support service · More preventative treatment options · Personalised service	Possible Improvements to the System	System Analysis and Recommendations
· Not enough diversity among GPs · Sometimes the results get lost in the systems · The long wait for referrals is an issue · The GP's knowledge about diseases is not always as good as patients would like · Prescriptions are not based on what is best for patient · Bad service due to demand exceeding the supply of available GPs · Concern for patient privacy · GP service affected by time constraints · Lack of infrastructure · Lack of information received · Level of service affected by under-staffing · Level of service affected by time constraints	Problems in the System	
· Improved patient satisfaction platform · Inefficient system · Inefficient service/poor course of treatment · Patient's lifestyle linked with impersonal service	Ineffective Options in the System	

GP and Patient problems

This theme includes three sub-themes and suggests problems that patients and GPs can face during consultation:

(1) Problems Faced by Patients

As the name suggests, this subtheme covers issues that patients would experience during a consultation with their general practitioner. For example, some participants complained about the poor service accessibility: *"I think the biggest problem is that there are a small number of GPs for the great demand that is currently in place"*. Other participant's complaint about the unlikeliness to see the same GP every time they go for a consultation: *"every time I go in there is a different GP, even if I book with the same one"*.

Other comments related to the fact that some GPs would not allow patients to explain more than one medical issue in the same consultation: "*they don't deal with 2 problems at the same time even if it is a quick one"*. In addition, GPs would not provide an adequate level of information about the prescriptions they suggest to their patients: *"even when they give you a prescription they won't tell you what it will do to you and the possible side effects"*. Likewise, some participants related this lack of information with the knowledge of the GPs: *"I think the issue is more that they never know the why of your issues"*.

Other issues grouped in this subtheme were related to the attitude of some GPs: *"I would also add that the GPs sometimes have a condescending attitude"*; or their lack of engagement: *"we more or less believe there is not much engagement on a personal level"*.

(2) Problems Caused by Patients

This subtheme was found in one comment related to the patients' unwillingness to wait for other services: *"I got charged like £15 for a referral to a private specialist…this happened because I did not want to wait 6 months for the NHS specialist"*.

(3) Problems Faced by GPs

This subtheme consisted of two comments: the first one was about the high levels of stress that GPs develop because of the high number of patients: *"maybe the GP gets stressed because of the amount of people they have to see in a day"*. The second comment was related to those patients coming to the consultations with their own agendas and disregarding the

GP’s advices: *“I really don’t care about what you are going to say to me’ and all I want is a referral to the specialist I want”.*

GP issues and recommendations for better service

This theme includes two sub-themes and suggests some irresponsible attitudes by the GPs that cause problems in the system and the possible enhancements they could make to improve the service:

(1) Irresponsible Behaviour of GPs

Some comments from the participants suggested that GPs would not offer any continual appointments: *“unless you ask for another appointment they will avoid giving you one*”. Other participants agreed that some GPs would refuse to give referrals: *“I think we should also add that sometimes the GP refuses to give you a referral”*. Additionally, there were comments criticising that some GPs would suggest nothing but paracetamol as treatment: *“the GP gives you like a general response such as ‘go and take paracetamol’ for everything”*. A final comment related to this subtheme was that GPs would provide diagnosis without looking for the underlying causes of illness: “*It has happened to me many times that I go to the GP, he just jumps to a conclusion and without most of the time giving me a prescription or doing any kind of examination”*.

(2) Improvement by GPs

Some of the improvements that participants believed GPs could make to their service were related to: (i) GPs trying to provide preventative care rather than treatment: *“maybe they should instead promote more prevention, but it is more a change of mentality*”. (ii) GPs trying to ask more questions: *“then GPs should try asking more questions perhaps*”. (iii) Finally, GPs should be more empathetic with their patients and their needs: *“GPs should be more empathetic to the patient’s needs and demonstrate ability to understand”.*

Enhanced Patient Involvement

This theme groups two comments related to the involvement of the public in order to provide a better service. For example, a participant commented that patients should have more opportunities to express their satisfaction: "*give people the chance to express their feelings with regard to the satisfaction"*. Other participants suggested the opportunity to be able to select the kind of GP you wanted to see: *"like if for example you are a particular religion and then you need to see a female GP then they should find you one"*.

System Analysis and Recommendations

This theme includes two sub-themes and suggests some considerations regarding issues, inefficiencies and improvements to the system:

(1) Possible Improvements to the System

Some of the suggestions that patients made to tackle the issues identified have been listed here: (i) patients should have more opportunity to do more things without booking appointments: *"if you could do more things without having to make an appointment with them all the time that would be better, so like repeat prescriptions and referrals"*; (ii) patients should also be able to make online appointments: *"if we could do online appointments to explain what the issue is and then they can read that at their own time";* and (iii) there should be longer appointments: *"longer appointments because most of the problems we identified are because they don't have enough time to speak to you*".

In terms of the management of the practices, some suggestions were associated with being able to choose your GP: *"So a solution would be if you could specify what GP you want"*. Another solution pointed to the possibility of providing psychological support for GPs who are working long hours: *"maybe some psychological support for the GPs"*. Additionally, practices should try to employ more people: *"hiring more GPs and having nurses on site all the time"*. Furthermore, practices should be rewarded for showing a good level of service: "*practices should be rewarded for showing the highest levels of service*".

(2) Problems in the System

Problems in the system identified certain issues happening in the consultation. For example, one participant complained about not having enough diversity of GPs: *"not enough diversity of GPs in some practices*". Another participant mentioned issues related to the language barrier in the consultation: "*So if you are from another country not always you have the right words to explain what it is that you are experiencing or feeling… it is like a language barrier"*. A third participant mentioned the poor management of the test results: "*your results get lost in the system"*.

(3) Ineffective Operations in the System

Regarding this issue, three comments stood out: one comment was related to inefficiencies in the communication with the GPs: *"Normally I have to spend at least 5 minutes of my 10 minutes explaining again for the fourth time to the fourth doctor the same problem and why she was supposed to do a blood test or what the particular test was supposed to be"*. The second comment was related to the unnecessary provision of prescriptions: "*it is like they feel obliged to give a prescription and sometimes you only want to know if you are OK"*. The third comment was related to how patients had to change GPs every time they had to relocate: "*but it is not because you keep changing houses therefore changing GPs. For example, I have lived in 5 different houses before and every time I had to change my practice they do not keep track of my file*".

6.3.5 Differences in Results between the Methods for Analysis

Frequency Lists Analysis: Although this was the second largest dataset, only 4 discourses were identified through this form of analysis (*reasons for patients going to the GP, patients discussing or asking questions of the GP, GPs asking patients to make another appointment* and *GPs asking the patients enough questions*). Additionally, an interesting finding was that even though the number of results were small, 3 of the them were only identified using this tool. These 3 discourses were related to *patients asking questions to their GPs or the other way around*.

Concordance Analysis: This analysis produced the highest number of results out of all the other quantitative forms of analysis in this chapter (25 in total). It is interesting to note that from this total, only 12 results were found to have a pattern of repetition while the rest of them appeared as a single mention in the data. This suggests that although concordance analysis can be helpful in finding discourses based on patterns of repetition, attention should be paid to the lines of text showing isolated occurrences as they might contain relevant information to help respond to the activity questions. Finally, from these results, further associations related to *issues in the consultation, issues with the management of the practices, issues with the resources provided to the practices* and *support for staff could be made*.

Collocates Analysis: The collocates analysis in this data set initially revealed many lemmas, although after a filtering process it only highlighted 10 important results. A further analysis performed on each of these lemmas discovered 3 discourses. The first discourse was associated with negatives attitude that *GPs could have towards patients*. The second discourse suggested two activities which usually happen in a general practice consultation (*asking questions and checking patient's available files*) and the third discourse suggested an *appraisal for the GP's good work*, as well as suggesting that GPs or general practices should be compensated based on patient appraisal. Although these results have revealed some important concepts to help improve the understanding of the key issues in General Practices, it is believed that the results were incomplete since other patterns that were not identified here did show up in other analyses of this data set.

Thematic Analysis: This type of analysis provided four large themes (*GP and Patient problems, GP issues and recommendations for better service, Enhanced Patient Involvement and System Analysis* and *Recommendations*). Similar to other forms of analysis of this kind, these themes grouped several discourses that displayed high levels of association between them and provided a much richer picture of the issues and opportunities in the GP consultation. With respect to the activity question, it was found that this form of analysis provided a large number of suggestions as well as a more creative process on behalf of the participants.

6.4 Discussion

Although there were several discourses in the quantitative forms of analyses that pointed out issues in the general consultation, the results from the thematic analysis revealed a more structured and a more creative task-based results. The main issues that were found in this data set related to the activity question were *professional skills, attitudes of GPs, issues with referrals to specialists or other doctors, low number of treatment options, issues in communication* and *issues with prescriptions*.

One interesting finding from this analysis was that participants believed that General Practices do not adequately support their GPs and the service they provide and in several instances GPs would find themselves working in difficult conditions. These findings support previous reports in which it was evidenced that in some areas of London GPs would have to work in isolation or General Practices would have a very low GP-patient's ratio (Raleigh et al., 2012).

Another interesting finding was that besides mentioning suggestions on how GPs could improve the provision of their services (e.g. *promoting more prevention, asking more questions or being more empathetic*), there were also suggestions on how general practices could improve external issues to the general consultation (e.g. *patients having more opportunity to do more things without booking appointments, access to online appointments,* and *summaries of consultations,* etc.). This demonstrates the need for practices to readjust their processes, culture, and physical environment in which their services are currently organised (Reiling et al., 2008).

Summary

In this chapter, a Future Workshops / Rich Pictures activity was implemented to explore the issues and opportunities relating to the *communication and relationship between GPs and patients*. The purpose of this activity was to describe the planning and implementation process of this tool as well as to evidence its anticipated strengths, weakness and the results that were found after using selected methods for data analysis.

Chapter 7 – Love & Break-up Letters

Introduction

This chapter addressed the planning, implementation and results of the third Human-Centred Design tool selected to perform a large ethnographic activity to explore the challenges and opportunities when proposing public involvement activities: Love & Break-up Letters

This chapter was divided into four sections. Section one covered the most relevant literature related to the Love & Break-up Letters activity. Section two explained the activity design and decisions related to the planning of the tool. In section three, the results derived from the investigation of the case for study – *Communication and relationship between GPs and patients* – are described. Lastly in section four, these results are discussed.

7.1 Activity Approach

7.1.1 Introduction to Love & Break-up Letters

For centuries, writing letters has been one of the most prevalent activities in human society that has extended almost all over the globe (Barton and Hall, 2000). This mechanism of communication has been commonly used to pass information from one party to another (Vanad, 2012) in forms such as *'letters, postcards, memos, electronic emails, etc.*' (Barton and Hall, 2000:1). There are two main types of written letters: formal and informal (Barton and Hall, 2000). For example, Iyebote (1994) explains that formal letters frequently use an impersonal style of writing, which includes academic or technical language as well as an order or structure. Instead, in informal letters, the writing style tends to be more colloquial and these are commonly used to communicate with relatives or friends (Iyebote,1994).

One example of an informal letter is the Love & Break-up Letter. This form of communication can be found either as a long explanation of sentiments and emotions or as a short note (if on paper) or text (if through a digital medium) conveying feelings (Sfetcu, 2014). Some examples of expressed emotions in letters can be '*devotion, disappointment, grief, self-confidence, ambition, impatience, self-reproach and resignation'* (Radice, et al., 1977:55). Sfetcu (2014) has found that the process of writing letters allows an easier expression of some of these emotions than if these were expressed orally and in the presence of the affected subject.

In 2009, Smart Design proposed the Love & Break-up letters as a design research tool (Martin & Hanington, 2012), while resembling the form of a typical romantic letter. The intention behind this research tool is to explore how the relationships between a person and a product or service are formed and what kind of sentiments and emotional connections can be developed from use or interaction (Martin & Hanington, 2012). By understanding these dynamics, researchers can identify issues with current ‘products or services’ and develop strategies for improving or extending the relationship (Cooper, 2010; Wilkinson, 2015).

Martin & Hanington (2012) explain that while love letters have the potential to show moments of connection and decision-making between one product or another; break-up letters can provide a description of the moment or the reasons that lead individuals to stop wanting a product or a service. These claims can justify the use of this tool as a potential alternative in qualitative research projects aiming to explore the benefits and issues of a phenomenon without having preconceived expectations of the possible research outcomes.

Advantages and Limitation of Love & Break-up Letters

While the literature contains some statements about the benefits of using Love & Break-up letters as a research method, very little effort has been made to identify possible limitations. The limitations that will be mentioned here are reflections of challenges that similar tools have and could also appear when using this tool.

In terms of advantages, the literature demonstrates that love & break-up letters can help to uncover the relationship between individuals and objects or services (Martin & Haniningto, 2012). By understanding these relationships, researchers can have an account of the values and expectations that people might have about the everyday products or service they use (Gains, 2012). Another advantage of this method is that it can help to identify the circumstances leading to the elicitation of fondness or dislike towards a product or service (Martin & Haninington, 2012). Identifying the influencing reasons for the choice of a product or service can provide assistance for building customer loyalty in terms of competitive advantage (Pearson, 1996). Promoting customer loyalty can also bring benefits to a company such as higher revenues, increased referral and a continuous flow of profit, among others (Reichheld & Teal, 1996). Finally, the humanistic approach that these tools offer allows the participants to share their stories while revealing the meaning behind something in their life (Martin & Hanington, 2012). Giacomin (2014) has explained that identifying meaning can lead to a certain degree of incremental innovation. Incremental innovation is known for simultaneously supporting competitiveness, affordability, and easier communication of ideas (Fullagar, 2015).

Some of the disadvantages of using Love & Break-up letters are that it can become a rigid method if the participants are not creative enough (Wilkinson, 2015). Additionally, and as with any other engagement activity, it might be difficult to find participants and motivate them to take part (Rowley 1996). Furthermore, participants might not feel confident enough to discuss their experiences and emotions openly, which could result in an incomplete picture or a lack of collaboration with the designers (Wilson et al., 1997).

7.1.2 Typical Format of a Love & Break-up Letters

The planning of a Love & Break-up letter activity can be conducted in two ways. One way can be via face-to-face interaction and the second way can be through a web-based programme. MediaLABamsterdam (2012) suggests that when planning love & break-up letters via face-to-face interaction, researchers should follow these five steps:

1. Identify the purpose of research and number of letters to be produced.
2. Organise a meeting where all the participants could be reunited.
3. Ask the participants to write a break-up letter about a product or service they do not want any more.
4. Ask the participants to write a love letter about a product or service they like.
5. Ask the group to read all the letters in order to find commonalities between them.

Martin & Hanington (2012) suggest that face-to-face versions of this tool could be used in combination with workshops, group interviews and icebreaker sessions, and that the researchers should use a recording device (e.g. video camera) to capture non-verbal cues given by the participants.

In terms of planning Love & Break-up letters through web-based programmes, the literature does not provide a guide on how to do this. Matthews & Cramer (2008) explain that, when approaching the activity in this manner, the researcher might miss non-verbal cues from the participants, although this can be compensated by being able to access hard-to-reach populations through web-based media.

7.2 Activity Design

This research proposed using an online medium for Love & Break-up letters, regardless of the lack of guidance on how to do this. In order to plan this activity, some of the steps mentioned in section 7.1.2, were followed:

(1) Demographics: As mentioned in section 4.3.4 (chapter 4), the selected sampling strategy was chosen to be non-probability sampling (David & Sutton, 2011) as these activities were only interested in finding information from a specific case for study (Lucas, 2014). A sample of 18 participants was selected in order to i) evenly divide the participants by their gender (9 males and 9 females) and ii) match the same number of participants among all the activities. For these activities, the consent form was added as part of some demographic questions asked at the beginning of each of activity (See appendix E1).

(2) After having identified the purpose of research (see section 4.2.1, chapter 4) and the number of participants, the researcher sought the aid of an expert in health services to help write the instructions and questions of the activity in an appropriate non-obtrusive manner (See appendix E2).

(3) The survey was planned to include several demographical questions to ensure the adequacy of the participants and to seek their consent.

(4) The researcher identified a survey web platform (QuestionPro) to upload the questions.

(5) The researcher used the recruitment strategies outlined in chapter 4 to approach the participants and provide them with a link of the web page supporting the activity.

(6) The activity was regularly monitored until the number of required responses was reached.

Table 7.1 Summary of the love & break-up letters logistics

Number of questions	1 question
Duration of each activity	Undefined
Number of participants	18 participants (9 males / 9 females)
Type of participants	General Practice Users (see chapter 4)
Setting / Place	QuestionPro
Moderator	No need for moderator

Additional protocols selected for this activity have been described in chapter 4 in section 4.2.

7.3 Data Analysis

Because of the online nature of this activity, it was necessary to recruit more participants than those initially planned. The reason for this was that several of the participants i) did not meet the requirements of the demographic questions or ii) failed to complete the activity. By the time the 18 letters required by the activity were completed, there were 4 more (incomplete) letters. There was a resulting total of 22 letters.

Since in the Love & Break-up Letters, the participants were able to choose the type of letter they wanted to write (love or break-up), this allowed the possibility for proposing quantitative analyses using a form of stratified sampling (Henry, 1990). In this process, the participants were homogenously divided between those people who wrote a love letter and those who wrote instead a break-up letter. The purpose of this stratification was to see if differences in the resulting data from each of the letter types could emerge and how these could complement and enrich the final findings. On the other hand, no stratification was done for the thematic analysis as doing this would had unnecessarily increased its required time and because the intention was to reduce and simplify the data by gathering various (either positive or negative) codes into a single list of themes.

7.3.1 Frequency Lists Results

Concerns were raised about the improbability of conducting frequency lists analysis (Baker, 2008), since the length of this data set was the second shortest of all four activities (composed only 2,110 words). Despite of this, this form of analysis was carried out and some results were reached. By separating these datasets, the main corpus was reduced in further, therefore, leaving love letters with 201 words and break-up letters with 187 words. Table 7.2 shows the differences in the word frequencies between the two types of letters.

Table 7.2 Lexical lemmas in love & break-up letters data set

Love letters			Break-up letters		
Word	**Count**	**Weighted %**	**Word**	**Count**	**Weighted %**
see	34	5.01%	need	17	3.46%
need	19	3.01%	get	22	3.23%
get	24	2.93%	like	17	3.19%
know	16	2.79%	time	12	2.95%
thank	14	2.79%	feel	10	2.29%
feel	16	2.64%	think	11	2.25%
good	15	1.96%	GP	9	2.21%
GP	11	1.9%	know	11	2.21%
call	11	1.86%	see	11	2.01%
care	16	1.86%	help	8	1.77%
Total of words: 201			**Total of words: 187**		

In table 7.2, it was evidenced that at least six different terms (‘see’, ‘need’, ‘get’, ‘know’, ‘feel’ and ‘GP’) were repeated in both forms of letters, although the frequencies and weighted percentages were not the same. Baker (2008) explains that these occurrences can be signs of linguistic complexities in the corpus. Other findings were that a total of 8 new words (4 per type of letter) also emerged in both lists, which could indicate differences in the discourses. Nevertheless, and as seen in other analysis of this kind done in this research, these words did not lead to any kind of initial suppositions about important concepts in either of the corpuses.

Regarding other parameters such as clusters, this did not follow a minimum percentage but instead were chosen for their higher position in their respective lists. A total of 10 lemmas were selected (5 per letter) and the cluster size were of three words on the left and on the right of each lemma.

In terms of the results found in the love letters, the most common patterns found in the word 'see' were related to the *possibility for people to see or meet their GP* (7 occurrences). For the word 'need' there was no evident occurrences, although the results suggested that this word was commonly used to refer *to a necessity* (3). The words 'get' and 'know' did not show any evident patterns of repetition; instead, it seems that these terms were used as connectors for expressing personal beliefs, thoughts or ideas. The patterns found for the word 'thanks' suggested an expression of gratitude towards the *GP's professionalism* (3), *their empathic attitude* (2) or *because of a job well done* (2).

Meanwhile, for the break-up letters, the most common patterns found in the word 'need' were related to a *decision of breaking up the relationship with the GP* (3). The word 'get' did not showed any evident patterns of repetition; instead, it seems that this term was used as a connector for expressing personal beliefs, thoughts or ideas. An interesting finding in the data was that the words 'like' and 'feel' appeared mostly together ('feel like') and were commonly used to *express negative emotional states* (4). Finally, the patterns found in the word 'time' were related to *GPs not having time to see their patients* (3).

7.3.2 Concordances Results

An interesting finding in the frequency lists analysis was that the word 'GP' was the term with the highest counts and weighted percentages in all the data sets except this one. Despite this, this term and all its stemmed possibilities (doctor, doctors and GP's) were selected as the key word in context (KWIC) in order to provide certain consistency in all the analyses. Similar to frequency lists, the love and the break-up letters were analysed separately to uncover potential similarities or differences between both data sets. The parameters used in this concordance analysis (Baker, 2008) were the use of all the selected words at the same time and a window size of 45 characters, which resulted in a list of 10 lines of text for the love letters data set (see table 7.3) and a list of 9 lines of text for the break-up letters data set (see table 7.4).

Table 7.3 Concordances results found in the in the love letters data set

Line	Context Horizon Left	KWIC	Context Horizon Right
1	Dear	doctor	Thank you for the good health care
2	another target somewhere (bless those	GP	contracts), it is a way of checking
3	, I think I love you as my	GP	and wouldn't want to see anyone
4	Dear	doctor	, You have helped me in times of
5	very positive impression. As a young	doctor	you were very nice and positive, you
6	bad. It happened that I met different	doctors	but none of them would give me
7	Dear	doctor	, firstly, I'd like to thank you
8	Dear	GP	, I feel that, on balance, you are
9	Dear	Doctor	I'd love to thank you for
10	not afraid of going to see a	doctor	or worried about not receiving the right

In terms of the results found in the love letters (see table 7.3), these ones showed several mentions of the word ‘dear’, which seems to be related to *how people start a letter* (i.e. Dear GP/Doctor) and the *GPs professional skills.* A second found relation was between the expression ‘thank you’ and the purpose of making a *compliment to a person*.

Table 7.4 Concordances results found in the break-up letters data set

Line	Context Horizon Left	KWIC	Context Horizon Right
1	Dear	Doctor	Foster, I firstly would like to thank
2	Dear	doctor	, I am afraid to say this relationship
3	you would be able to get more	doctors	and less number of patients per doctor
4	less number of patients per	doctor	then you will be able to put more
5	Dear	Doctor	I think we reached the end of the line.
6	Dear	doctor	, By now you probably feel that we
7	Dear	doctor	, I am sorry to say that our
8	one visit to the surgery, the	doctor	ignored me when I entered the room,
9	Dear	Doctor	, I’m afraid but I will be no longer

Regarding to the results obtained from the break-up letters (Figure 7.4), it was found that the word ‘dear’ was also used for the purpose of *starting a letter* (highlighted in yellow). On the other hand, there were some evident patterns (highlighted in green) suggesting a *termination of the relationship*. Additionally, after considering the subsequent context of each of these phrases (not shown in table 6.4), small associations with *professional skills* (e.g. listening) (found in lines 1, 2 and 4), a *sense of disappointment* (found in lines 6 and 7) and the *GP's attitude* (found in lines 4 and 8) were discovered.

7.3.3 Collocates Results

As with the previous analyses seen in this chapter, the collocations (Baker, 2008) performed here, approached the love and break-up letters separately and used the word 'GP' and all its stemmed possibilities (doctor, doctors and GP's) as the key word in context (KWIC). Additional parameters such as a window span of 5 words on the left and on the right of the search term (as it is the default setting of the software) and a minimum word pattern of repetition of 2 counts (as selecting 3 counts did not produce any results) were also selected. The outcome from this analysis on the love letters produced only five results, which were all grammatical words and did not reveal much about a discourse (Baker, 2008). Table 7.5 shows all the results obtained from the love letters collocate types.

Table 7.5 Collocates results found in the in the love letters data set

Rank	Collocate	Tot Freq	Freq(L)	Freq(R)	Stat
1	thank	2	0	2	5.61961
2	of	2	1	1	5.16018
3	to	3	1	2	3.53215
4	I	3	1	2	3.07529
5	you	3	0	3	3.03465

The collocations of these words only helped to uncover one discourse in the data, which suggested a *feeling of appraisal for the GP's good work*. Additionally, one isolated comment in the data suggested a comparison between a current GP and some previous ones.

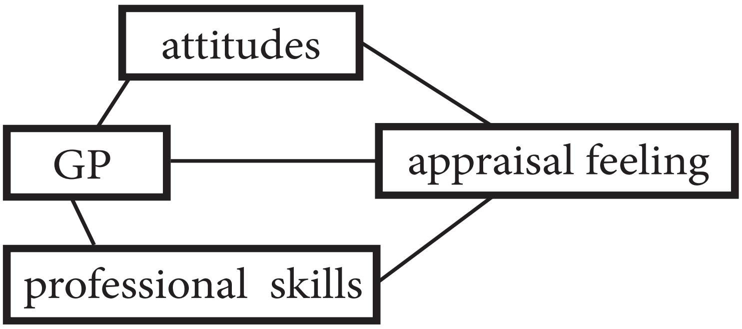
On the other hand, the results of the analysis of the break-up letters (whilst using the same parameters) provided a higher count of collocate types. Similarly, as with the love letters, most of these collocations were grammatical words. Table 7.6 shows these results.

Table 7.6 Collocates results found in the in the break-up letters data set

Rank	Collocate	Tot Freq	Freq(L)	Freq(R)	Stat
1	number	2	1	1	7.90388
2	patients	2	1	1	6.90388
4	less	2	1	1	6.31892
5	say	2	0	2	5.90388
6	afraid	2	0	2	5.90388
7	able	2	1	1	5.90388
8	my	2	2	1	5.26003
9	be	2	1	1	4.90388
10	of	2	1	1	4.58195
12	the	3	2	1	3.84499
13	and	2	1	1	3.82707
14	I	7	0	7	3.58195
15	to	4	2	2	3.51156

The only two discourses identified in the colocations of these words were related to informing GPs of a break-up in the relationship and issues with their professional skills. Additionally, some isolated comments were found to relate to the attitudes of some GPs and the suggestion of having more GPs. The relationship between the results of these two analyses can be seen in figure 7.1.

Figure 7.1 Collocation networks identified in the Love & Break-up Letters data set



7.3.4 Thematic Analysis Results

Through 18 different Love & Break-up letters (8 love letters and 10 break-up letters), participants described their feelings about the general practice consultation based on their experiences. Some of the concepts found here seem to overlap across themes, which suggests a good level of interpretation of the data as aspects are usually related to each other instead of taking place as isolated events. The results of this thematic analysis (Clarke and Braun, 2006) were organised into 5 main categories (See table 7.7).

Table 7.7 Results identified in the love & break-up letters thematic analysis

Codes	Themes
· Sense of a good relationship · Good comprehension skills · Recognition of good attention · Sense of a will to do the job · Sense of being able to trust · Sense of being treated as a person (Human Connection) · Sense of being treated seriously · Sense of feeling comfortable · Feeling good rapport · Good reassurance skills	Help and Support
· Having more Doctors · Bad Waiting times for the appointments · Bad waiting times in the waiting area · Booking less patients per doctor · Not much Choice · Recognition of good online services	Resources Management
· Sense of being helped · Appreciation for the services provided · Recognition of good care · Feeling safe · Sense of reassurance · Sense of good attention · Sense of Comfort · Sense of being understood · Sense that the job is provided in a complete way · Positive feedback about GP Practice · Positive feedback about care skills · Positive assumption about the GP services · Positive feedback about the speed of service · Positive feedback about a job well done · Positive feedback about attentiveness skills · Positive feedback for the support provided · Appreciation for being given advice when needed · Sense of being able to be seen quickly · Sense of being offered good advice · Positive feedback for being given help when needed	Positive User Satisfaction
· Negative feedback about being polite · Negative feedback about feeling ignored · Negative feedback about the GP-patient communication · Negative feedback about the waiting time · Sense of distance between GP and patient	Negative User Satisfaction

· Poor bedside manners · Sense of feeling rushed · Sense of GP pointing out the obvious · Sense of lack of communication · Sense of lack of initiative on behalf of the GP · Sense of not being treated as important · Sense of poor listening skills · Sense of poor personal manners · Negative assumption about the GP's real intentions · Negative Feedback about the waiting time · Lack of caring · Sense of hopelessness · Sense of being disappointed · Negative Feedback about the attention provided · Feeling always in a hurry · Work on their 'bedside manners' · Consequences for lack of attention · Negative Feedback about appointment booking · Lack of ideal level of attention · Sense of lack of Hope · Sense of no sufficient access to the service · The GP's being late · Recognition of a poor service provision · Sense of a mechanisation of the job · Bad feedback about accessibility	
· Suggest for more open and talkative relationships · Suggestion of getting more GPs · Better computer-generated booking systems · Computer generated system instead of receptionists	User Suggestions

Help and Support

This theme groups together comments that described some of the supporting skills GPs provide in the consultation. For example, there was one participant that commented on the good comprehension skills his/her GP would have: "*you've been always listening attentively to my concerns showing your comprehension and always with a good recommendation at hand*". Another participant commented on the good attention skills displayed by his/her GP: *"Dear GP, I feel that, on balance, you are quite attentive to my needs"*.

There was a mix of comments related to the listening skills. For example, some participants praised their GP's listening skills: *"None of the other GPs would listen to me carefully and give me a caring opinion like you do"*. Other participants instead criticised this skill in some GPs: *"I feel like you barely listen to the things I say and in turn your responses show a real lack of insight"*.

Additional comments were found to suggest good rapport with the GP: *“I have known you for a very long time and feel that we have a good rapport due to this”*; and good reassurance skills: *“I always know that I'll get what is needed in the situation - including that if I might be too concerned about something, you will rather calm me down and allow to carry out any necessary tests”*.

Resources Management

This theme groups together comments related to the management and provision of a service. For example, one participant complained about the long waiting times for appointments: *“Sometimes it annoys me that it takes so long to arrange to see you”*. Another participant complained about the waiting times in the waiting area: *“I 'm afraid that I had to wait for you too long when you were busy with others”*. Some participants criticised the lack of communication with the GPs: *“There has been a breakdown of communication. I never hear from you, and you never make time to see me”*. Lastly, one participant praised the online service provided in his/her practice: *“I love the online service for your surgery. No long waits (except still for an appointment to see you) and a super easy way to order repeat prescriptions”*

Positive User Satisfaction

This theme reflects the positive responses from a well-delivered and well-managed service. Some comments recognised the good advice provided by some GPs: *“I'd love to thank you for all your patience and attention you gave to me whenever I felt down & sick and needed medical advice or referral”*. Other comments referred to the provision of reassurance: *“I went to see you when I was not well and worried. You were able to reassure me and offered sound advice*”. At least one participant expressed appreciation for being helped: *“You have helped me in times of need and it is appreciated”*. Other participant recognised the good care: *“I've been delighted with your care*”.

Some comments expressed gratitude for their GP’s attentiveness, which resulted in them feeling safe, comfortable and at ease: *“Thank you again for your careful care, attention and all your help and support”*. Finally, there was one more comment appreciating the good service provided by some of the GPs: *"I firstly would like to thank you for your care and kindness over the last 10 years"*.

Negative User Satisfaction

This theme describes the negative emotional responses to a poorly run and ill-managed service. For example, in terms of the practices, one participant criticised the waiting times: *"Oh, God knows how much I wished they would allow me to fix an appointment with you for the following week...Instead no, you can only book until the end of the week, no more. You need to call again and wait those annoying 11 rings before someone actually picks up the phone"*.

The rest of the comments were instead central to the GP consultation. One participant commented about how GPs would make him/her feel rushed out of the consultation: *"from the very first second you are in a hurry"*. Some participants also pointed out that some GPs have bad listening skills: *"on one visit to the surgery, the doctor ignored me"*; or attention skills: *"when you finally find the time to see me I feel you don't give me enough attention"*. Lastly, there were also some mentions about needing more training on 'bedside manners and about having initiative in the consultation: *"Often I feel like you don't show any initiative of your own"*.

User Suggestions

This theme grouped together user views on how to improve a service. For example, one participant suggested a more open and talkative relationship: *"I need a more open and talkative relationship with my GP"*. A second participant wished for more accessibility: *"I wished you were more accessible, and we could have seen more of each other"*. Another participant recommended having better online tools that could replace receptionists: *"maybe a computer-generated booking system could improve issues with the accessibility instead of endless phone calls with your receptionist"*. Lastly, it was suggested that surgeries should have more doctors and fewer patients: *"maybe if you would be able to get more doctors and less patients per doctor"*.

7.3.5 Differences in Results Between the Methods for Analysis

Frequency Lists Analysis: This analysis identified 10 different discourses, with 6 of them belonging to the love letters and the remaining 4 found in the break-up letters. Shared discourses between both data sets included the expression of emotions (e.g. *gratitude or ungratefulness*) towards the provision of services and the mention of some of the resources in a general practice such as the possibility or *lack of opportunity* for *GPs to meet their patients*. On the other hand, an evident difference between both data sets was that while in the love letters there would be a clear intention of continuing with the relationship, in the break-up letters there would be an explicit mention of the willingness to terminate the relationship.

Concordances Analysis: The results of the concordances provided a total of 6 discourses, which were evenly divided between the love and break-up letters. While in the love letters discourses related to the question of the activity *were compliments to a GP or his/her actions and appraisal of the GP's professional skills*; in the break-up letters these were a *sense of disappointment* and a *bad attitude from GPs*. The other identified results were not relevant to the activity question.

Collocates Analysis: There were 6 results found in this type of analysis, although this time only 2 of them were related to the love letters and the remaining 4 to the break-up letters. The discourses found in the love letters were related to the *expression of gratitude and appraisal for a perceived good work*; instead, in the break-up letters, the discourses were related to *issues with the GP professional skills and their attitudes*. New discourses that were not seen in the other quantitative analyses were also found in the love letters (*a comparison between current and previous GPs) and in the breakup letters (the suggestion of having more GPs*).

Thematic Analysis: The results of this thematic analysis provided five large themes *(help and support, resources management, positive user satisfaction, negative user satisfaction and user suggestions*) and no subthemes. One similarity that this method of analysis had with the quantitative analyses was that it also identified the expression of emotions (*e.g. positive and negative user satisfaction*) towards the provision of services.

7.4 Discussion

Those discourses found in the quantitative analyses were related to: *Issues with the GP's professionalism* and *attitudes of the GP*. In terms of GP professionalism, the thematic analysis found a correlation with skills such as *listening* and *attention*. GP skills have been known to be important to the general practice consultation since they can help GPs to better diagnose the issues of their patients (Vincent and Coulter, 2002).

In terms of the attitudes of the GPs, some positive examples that were found were the provision of *comfort, relief support* and *safety*. In term of negative examples, respondents mentioned a *rushed attitude*, *bad manners*, *lack of caring,* and *no reassurance*. Emotional aspects such as these ones have been found to play a central role in the delivery of patient-centred consultation (Balint, 1957). As seen in section 3.4.1 in chapter 3, patient-centred consultation skills are currently encouraged among individuals looking to work as GPs in the UK (Royal College of General Practitioners, 2010)

Probably the most important finding from this data set was that positive and negative elicitation of emotional states would come from 1) a good or bad relationship with the GP or 2) the perceived good or bad delivery of services. As mentioned in chapter 3, these findings are consistent with previous studies by Clark, (2003) and Wanzer et al., (2004) about the existing relation between the patient's perception of the quality of the service provision and the quality of the interaction between them and their health professional.

Summary

In this chapter, a Love & Break-up Letters activity was proposed to explore the issues and opportunities in the *communication and relationship between GPs and patients.* The purpose of this activity was to describe the planning and implementation process of this tool as well as to evidence its anticipated strengths, weakness and the results that were found after using selected methods for data analysis.

Chapter 8 – Crowdsourcing

Introduction

This chapter addressed the planning, implementation and results of the fourth Human-Centred Design tool selected a selected to perform a large ethnographic activity to explore the challenges and opportunities when proposing public involvement activities (Crowdsourcing).

This chapter was divided into four sections. Section one covered the most relevant literature related to Crowdsourcing activities. Section two explained the activity design and those decisions related to the planning of the tool. In section three, the results derived from the investigation of the case for study – *Communication and relationship between GPs and patients* – are described. Lastly in section four, these results are discussed.

8.1 Activity Approach

8.1.1 Introduction to Crowdsourcing

One tool that has been gaining considerable attention in recent years is Crowdsourcing. This term is a combination of the words *crowd* and *outsourcing* (Martin & Hanington, 2012:52) and was coined by Howe (2006) to explain the behaviour of some companies that started to outsource their work to online communities through an open call for proposals instead of relying only on their employee’s work (Brabham, 2013). Howe (2006) explains that the premise behind this model was that companies and other sectors of the economy were going to be able to access and benefit from the knowledge of the wider public and enthusiasts who could be as equally good as highly-paid professional. Since then, this tool has proven to be highly productive when engaging with the public (Ridge, 2014) as it can produce large amounts of data in a very short space of time and at no great cost (Kittur et al., 2007).

Several definitions of the term Crowdsourcing have been suggested, although characteristics such as problem-solving (Van Ess, 2010), crowds (Grier, 2012), online context (Estelles-Arolas & Gonzalez, 2012), and mutual benefit (Brabham, 2013) can show the contribution of this tool to business and involvement activities. Probably one of the most complete definitions of this term can be found in the works of Estelles-Arolas & Gonzalez (2012:11):

> *"Crowdsourcing is a type of participative online activity in which an individual proposes to a group of individuals of varying knowledge, heterogeneity and number, via a flexible open call, the voluntary undertaking of a task. The undertaking of the task, of variable complexity in which the crowd should participate bringing their knowledge and/or experience, will entail mutual benefit. The user will receive the satisfaction of a given type of need, be it social recognition, self-esteem, or the development of individual skills, while the crowdsourcer will obtain and utilise to his advantage that what the user has brought to the venture."*

Although this definition might look rather long when compared to others, it offers great value as it not only covers a review of more than 40 other definitions of the same term, but also captures all the *key ingredients* of a crowdsourcing activity (Brabham, 2013:3).

A term commonly found in the literature about Crowdsourcing is 'Open Innovation'. This paradigm was encouraged by Chesbrough (2003, 2006) to explain how firms could use internal and external sources of knowledge and market paths to increase internal innovation. The main difference between Crowdsourcing and Open Innovation is the way in which inputs are provided. Neumann (2014) explains that while with open innovation a firm can create an environment where ideas are collectively shared to become a truly democratic process, in crowdsourcing a firm can seek inputs from unidentified groups of people, therefore requiring lower levels of involvement. Additionally, the central idea of these two terms is their focus on finding innovative solutions to a problem (Neskovic et al., 2012). One way of conducting open innovation is by using crowdsourcing initiatives (Seltzer & Mahmoudi, 2012).

There are several categorisations for crowdsourcing activities, although Crowd Wisdom, Crowd Creation, Crowd Voting and Crowdfunding are the four most well-known of these (Howe, 2008). In the past years, Crowd Voting and Crowdfunding have been two of the most popular categories while also attracting the highest levels of participation (Hammon & Hippner, 2012; Howe, 2008). During a Crowd Voting activity, a large group of individuals provide their opinion or judgement on a specific topic by voting online and allowing companies, organisations or individuals to create or select ideas (Solemon et al., 2016). In Crowd Funding, companies, organisation or individuals ask a large group of people to donate money for a good cause or towards a project (Ordanini, 2009) that they believe matters. An example of crowd voting can be *American Idol* and examples of Crowdfunding can be found in *Kickstarter* (Muehlhausen, 2013).

The growing success of crowdsourcing has made non-profit and governmental organisation turn to this model as a tool for public involvement initiatives. Public health (Brabham et al., 2014), public policy (Thapa et al., 2015), and transport planning (Brabham, 2012) are a few examples that have either put into practice or proposed frameworks on how citizen involvement in public innovation can be encouraged through crowdsourcing. Brabham (2009; 2012) explains that some of the challenges of adopting a crowdsourcing model in public participation are that not everyone has access to the Internet (main medium in which this tool is deployed) or a computer, that deliberative democracy might not be easily achieved via online access and that platform interfaces might not be sufficiently inclusive or usable. Brabham (2012) concluded that crowdsourcing should then be used as a complementary tool for traditional public participation programmes.

Lastly, researchers should ensure not to confuse crowdsourcing with outsourcing. Schniederjans (2003:3) defines outsourcing as moving a business activity from an internal to an external workforce source. The main difference between these two models is that while crowdsourcing seeks to collect ideas from individuals; outsourcing just subcontracts work to other companies (Neskovic et al., 2012). Also, crowdsourcing allows global gathering, flexible workforce and reduced or free operational costs (Albert, 2013; Ridge, 2014) while outsourcing does not.

Advantages and Limitations of Crowdsourcing

Several authors have studied and explained in detail the advantages and disadvantages of using crowdsourcing platforms for several purposes, such as their application in marketing, product design and using the customer as an information provider (Estelles-Arolas &Gonzalez, 2011). For the purpose of clear discourse, only those advantages and disadvantages that can be applied to general crowdsourcing projects will be reviewed here.

Probably the main benefit of crowdsourcing is that it saves costs, time and resources (Ridge, 2104). Garrigos-Simon et al. (2015), explain that for a firm it can be much cheaper to organise a crowdsourcing competition platform that reduces project complexities, increases quality and allows efficient use of resources (Estelles-Arolas and Gonzalez, 2011), than contracting traditional design organisations.

Many other advantages that seem to follow almost sequentially is that, by allowing research projects to reach large crowds of people, they can access a wide range of skills, resources and creativity (Grier, 2012; Simperl, 2015). These factors can help to gather large amounts of data (Kittur et al., 2007) as well as innovative content for anticipating customers' needs and for problem-solving purposes (Hammon, Hippner, 2012; Neskovic et al., 2012). Additionally, this openness allows connections with non-expert-outsiders that could potentially outperform the internal research (Brabham, 2013).

Crowdsourcing can allow externalisation, which means a reduction in project failures (Estelles-Arolas and Gonzalez, 2011). This again, is related to the possibility of accessing knowledge from a wide range of individuals (Brabham, 2013) because there is no longer a dependency on a single organisation working on a project (Estelles-Arolas & Gonzalez, 2011).

As for crowdsourcing limitations, there is always a chance that this method might not achieve an ideal level or quality of expected ideas (Whitla, 2009). Hammon & Hippner (2012) suggest that task evaluations need to be clearly explained to avoid this limitation. Issues related to the ownership of ideas and the gathering of intelligence without paying or providing the promised remuneration can also arise (also known as *click fraud*) (Whitla, 2009:26). Additionally, this tool can impose greater expenses of time and resources if the crowdsourcer decides not to use existing platforms or if the expected levels of participation are not reached at the end of the project (Estelles, 2011).

8.1.2 Common Format of Crowdsourcing

Probably one of the most recognised processes for crowdsourcing is the one explained by Whitla (2009:17), which recommends the following four steps:

1. Make a call for a Human Intelligence Task (Hit), when dealing with a firm-wide issue.
2. Allow a crowdsourcing community to access the call and perform the HIT through a link provided via a project opening.
3. When the HIT is completed it will be returned to the firm.
4. A payment or remuneration will be made to the winning Crowdsourcer(s).

Two ways in which the first and the second step can be achieved is by either the firm contacting the participants directly or by using a crowdsourcing intermediary platform (e.g. Amazon's Mechanical Turk), which could also come with a built-in community of participants. Grier (2012) cautions that when planning crowdsourcing activities, one process might not work for all cases, therefore additional arrangements should be made according to the purpose of each activity.

8.2 Activity Design

The planning process that was followed to organise the crowdsourcing activities for this research were based on the steps described in section 8.1.2 of this chapter:

The first step for this activity was to identify the type of crowdsourcing model to use. Selecting the right crowdsourcing model can result in the right type of contribution (Howe, 2008).

(1) 'Collective Intelligence' or 'Crowd wisdom' model was selected because it allows diversity of opinion, independence of opinion and free individual input instead of only collective responses (Surowiecki, 2004).

The second step was to select the type of questions required to be asked. Usually, the questions can be in an open or closed form, or of a nominal nature if the purpose is to rate or measure something (Bernhardt & Geise, 2009).

(2) A total of 5 questions (excluding demographic questions) were proposed for this activity (including open, closed and rating questions) (See appendix F2). Additionally, an expert in health policy was asked to review the content of the questions prior to the activity to ensure their adequacy and appropriates.

The third step in planning this activity was to identify an ideal web-based tool where to upload the questions in order to reach the audience. As mentioned before, there are some companies that offer platforms for these purposes, although some of them can be very expensive.

(3) For this activity, Survey Monkey was selected as the cloud-based software.

The fourth step was to identify the community of participants to approach.

(4) The sampling and recruitment strategies that were followed in this activity have been outlined in chapter 4

This activity did not ask the group to act as juries and to vote for the best idea(s), as its main and only intention was to gather insights from the group.

Table 8.1 Summary of the crowdsourcing logistics

Number of questions	5 questions
Duration of each activity	Undefined
Number of participants	18 participants (9 males / 9 females)
Type of participants	General Practice Users (see chapter 4)
Setting / Place	MonkeySurvey
Moderator	No need for moderator

As mentioned in section 4.3.4 (chapter 4), the selected sampling strategy was chosen to be non-probability sampling (David & Sutton, 2011) as these activities were only interested in finding information from a specific case for study. A sample of 18 participants was selected in order to i) evenly divide the participants by their gender (9 males and 9 females) and ii) match the same number of participants among all the activities. For these activities, the consent form was added as part of some demographic questions asked at the beginning of each of activity (See appendix F1).

8.3 Data Analysis

Because of the online nature of this activity, it was necessary to recruit more participants than those initially planned. The reason for this was that several participants did not meet the requirements of the demographic questions or failed to complete the activity. By the time all the 18 crowdsourcing surveys required by the activity were completed, there were 7 more (incomplete) surveys, making up a total of 25.

8.3.1 Frequency Lists Results

The whole data set of the crowdsourcing survey consisted of in 645 words. The reasons for such a small number of words was that, firstly, some of the question were of a closed and multiple-choice nature and that even though the participants were given the option to expand in their responses, some of them did not elaborate on their answers any further, leaving this corpus as the smallest one of all the activities.

After the frequency analysis (Baker, 2008) was performed, the initial number of words was reduced to 157. A list of some of the words with weighted percentages above 1% are presented in table 8.2.

Table 8.2 Lexical lemmas in the crowdsourcing data set

Word	Count	%	Stemmed Words
GP	18	4.55	GP, GPs, doctors
issue	12	2.72	issue, issues, number, results, take
go	13	2.62	become, get, go, going, move, offering, work
time	8	2.42	time, times
treatment	7	2.11	discuss, discussed, treatment, treatments
see	10	1.96	considered, find, meeting, regard, see, understand, visit
take	15	1.91	asked, asking, considered, deal, demand, engage, engaged,
one	6	1.81	one
information	5	1.51	info, information
offering	6	1.51	offering, provide, provided, providing

As it can be seen from the previous table: *GP*, *issue, go, time,* and *treatment*, were among the most frequently mentioned lemmas in the data set. Additionally, some of the words with high percentages did not necessarily display the highest counts, suggesting the possibility of linguistic complexities in the corpus (Baker, 2008:52).

In terms of the cluster analysis, only the first 10 words with percentages between 1.5% and 2% were used in order to encourage a more thorough analysis. Additionally, the cluster size used for this analysis was of three words allocated on the left and on the right of the lemmas.

In terms of the results, the most common patterns found in the data set for the word ‘GP’ were related to *having more time* (2 occurrence), *the use of the consultation time* (2) and *having the same GP* (2). For the word ‘issue’ there were no noticeable occurrences, although the results suggested correlating patterns to comments about *health issues, problems with treatments* and again *having different GPs*. The words ‘go’ and ‘see’ were both used mainly to explain several reasons why patients would visit a GP. The words ‘time’, ‘take’ and ‘offering’ did not show any evident patterns of repetition; instead, it seems that these words were used as connectors for expressing personal beliefs, thoughts or ideas. The patterns found in the word ‘treatment’ related to the *provision of information about treatment* (3), *issues with treatment* (2) and *lack of treatment options* (3). The word ‘one’ was used as a quantifier (e.g. one GP, one patient, one treatment). Finally, the most common patterns found for the word ‘information’, were related to the *handling of the patients’ information by GPs or managemen*t (3) and *about the information provided by GPs* (5).

8.3.2 Concordances Results

The terms selected for conducting the concordance analysis (Baker, 2008) in this data set were again ‘GP’ and all the stemmed possibilities (doctor, doctors and GP’s). The parameters used in this concordance analysis also involved a search of all the selected words at the same time, and a window size of 45 characters, which resulted in a list of 18 lines of text (see table 8.3).

Table 8.3 Concordances results found in the crowdsourcing data set

Line	Context Horizon Left	KWIC	Context Horizon Right
1	from the navy asked I find the	GP	to engaged with my private life
2	online to the individual patient and	GP	should have them ready when meet
3	and be more transparent about	doctor	expertise. I don't feel much rapport
4	. I don't feel much rapport with my	GP	more another number in the large
5	, don't know of any times consecutive	GP	appointments were with the same doctor.
6	GP appointments were with the same	doctor	Other problems -- not asked about
7	effort to provide one patient with one	GP	More time, Education Write prescription
8	Write prescriptions correctly My	GP	is busy and hard to make an appointment
9	appointment Telephone Consultation	GP	doesn't always consider other
10	a case of providing enough info for	GP	to validate and move to treatment quickly
11	have little time and will be honest	GP	could work on assessment skills to engag
12	s to engage 'confident' patients. My	GP	not always shows an engaging attitude
13	go for a visit I sometimes feel my	GP	waste time asking me things he should
14	Main issue is having a different	doctor	each time I go to my GP Surgery.
15	doctor each time I go to my	GP	Surgery. Having only a short window of
16	a short window of time with the	doctor	I don't want to waste it re-
17	progress was monitored by the same	GP	Be allocated a specific GP within the
18	the same GP. Be allocated a specific	GP	within the practice

Regarding the results, some associations related to the *attitude a GP might have towards a patient* (3) were found in lines 1, 11 and 12 some. Additionally, as part of this pattern, a suggestion for *GPs to improve these behaviours* (line 9) was revealed. In lines 3 and 4 some found patterns showed correlation to *how patients sometimes feel* (2). In lines 5, 14, 15, 17 and 18 the KWIC seemed to be associated with the *consistency of the GP* (5). Meanwhile, lines 6 and 9 focused on the *GP's professional skills* (2). Lastly, in lines 8 and 9 the patterns indicated problems with the possibility of *access to the service* (2). Finally, in lines 7, 13, 15 and 16 some associations with the *length and use of the consultation time* (4) were found.

Although this analysis was mainly focused on finding common patterns in the text, some isolated fragments of data suggesting issues with the GP-patient relationship were also noticed. For example, in line 8 there was a comment about *writing prescriptions*. and in line 10 there was an observation about the provision of *sufficient information in the consultation.*

8.3.3 Collocates Results

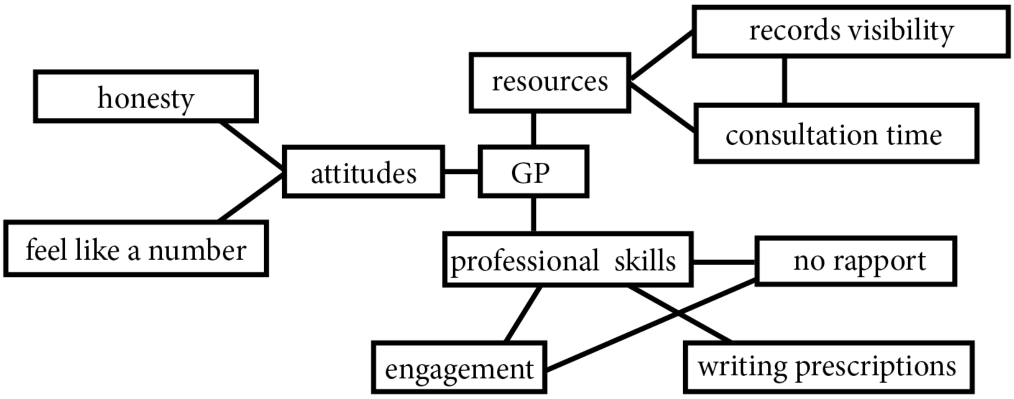
Similarly, to all the other analyses of this type, the lemma 'GP' and all the stemmed possibilities (doctor, doctors and GP's) were selected as the search terms. Additional parameters such as a span of 5 words on the left and on the right of the search term and a minimum word pattern of repetition of 2 counts were also selected for this collocates analysis (Baker, 2008). The result from this analysis can be seen in table 8.4.

Table 8.4 Collocates results found in the in the crowdsourcing data set

Rank	Collocate	Total Freq	Freq(L)	Freq(R)	Stat
1	write	2	1	1	6.54358
2	specific	2	1	1	6.54358
3	education	2	1	1	6.54358
4	allocated	2	1	1	6.54358
5	about	2	1	1	6.35094
6	don't	2	0	2	5.54358
7	same	2	1	1	5.54358
8	patient	2	2	0	5.54358
9	always	2	0	2	5.54358
10	prescriptions	2	1	1	4.95862
11	my	6	5	1	4.95862
12	time	4	2	2	4.73623
13	feel	2	2	0	4.54358
14	be	4	3	1	4.37366
15	and	5	2	3	4.28055

Initially, the results from this activity found two patterns in the data related to issues with the GP professionalism and the GPs attitude towards patients. A further review of each of the collocate types and their concordances helped to find some additional discourses not previously identified that helped to build a much richer correlation between the discourses. This included comments related to the *continuity of the same GP*, *writing of prescriptions*, *use of consultation time* and *management of patients' records*. Figure 8.2 shows the believed relationships between these collocate types.

Figure 8.1 Collocation networks identified in the Crowdsourcing data set



8.3.4 Thematic Analysis Results

Through 18 different crowdsourcing surveys, participants provided feedback about their experiences in the general practice consultation and relationship with their GPs. This data was found to overlap across themes, which suggests a good level of interpretation as concepts are usually related to each other instead of occurring as isolated events. The following sections outline the main themes and subthemes emerging from the thematic analysis (Clarke and Braun, 2006) of the interview transcripts. The results of this analysis were organised into 9 subthemes and 4 main themes (See table 8.5). This section will describe each of the themes, while also discussing their similarities with the relevant literature.

Table 8.5 Results identified in the crowdsourcing data set

Codes	Subthemes	Themes
· GP's access to information · GP Not Giving information · Poor communication · Information shortage · Information is not always provided	Information transfer	Communication
· Telephone consultation · Leaflets · Web sites · E-mails/texts · Telephone appointments	Forms of off-site communication	
· GPs do not ask about other possible illnesses in the same consultation · GPs not inquiring about other problems · GPs only ask about one problem	Consultation	
· No options for treatment · GPs do not offer other options for treatment · No/few treatment options	Options/treatment	Relationship
· Other factors for illness ignored · GPs not looking for the underlying causes of illness · Prescriptions incorrect · Some prescriptions given are not ideal or correct	GP shortcomings	
· Not much rapport with GP · Some GPs are overly friendly and not professional · GPs should be more professional	GP-patient social relations	

· GPs should be more caring · GPs are not always engaging · GP too focussed on relationship · GP impersonal · GP to become more personal		
· GPs are usually busy · GP unavailable · GP appointments are too short · Hard to make appointments · Clear reason for using GP services · Inconsistent GP	Accessibility	Practice Issues
· Patients feel like numbers · GPs not prepared before seeing somebody · GP should look at patient records · Poor management of patients' history · No easy solution for issues in GP practices	Workflow Issues	
· More options for treatment · More open mind on the part of GPs · More care when writing the prescriptions · Faster way for provision of treatments · Continued education for GPs · Better management of patient referrals · Better management of patient records · GP to Identify more treatment options · Rapid treatment · Consistent GP · Treatment quickly · Able to discuss other issues in same consultation · Extra engagement training for GPs · Improve access to patient records · Effort to encourage GP continuity · Same GPs should follow same patients · Patient records visible online · More holistic approach · More focus on cause than symptoms	Suggested Improvements	Solutions

Communication

This theme includes three sub-themes and looks at how communication takes place in different areas of the general practice and the formats it takes.

(1) Information Transfer

The participants made observations regarding the provision of information in the consultation. For example, a participant commented that although information was given, this was usually not enough: *"I often feel the information on pertinent illnesses given is less than I would like"*. Another participant complemented this notion by commenting that the partial provision of information would make them believe there were no more alternatives: *"Only one treatment explained in depth, made to feel it was the only one*".

(2) Forms of off-site information

In addition to the previous argument, some participants made comments about the different forms that general practices used to communicate with their patients. For example, one participant suggested the use of leaflets and web-based tools: *"practices should provide leaflets or have web-based information on the conditions or illnesses"*. The same participant also suggested the use of e-mails to summarize what was discussed in the consultation or keep in touch with patients: *"E-mail or text messages sporadically just to touch base*". Finally, another patient explicitly mentioned the use of telephone consultations: *"they should use more telephone consultation"*.

(3) Consultation

The word 'consultation' was used to group together all the comments related to the GPs not asking or looking for more than one or two problems per consultation: *"I tend to go annually with a list of problems I think I have and I would like them to deal with all rather than only three"*.

Relationship

This theme includes three sub-themes and looks at the relationship between patients and the GP system.

(1) Options for Treatment

The analysis of the data identified two issues related with the options for treatment. One participant mentioned that GPs would provide few options for treatments: *"GPs take little interest in offering a different solution if the initial one doesn't work"*. Another participant also explained that GPs would not provide more than one option for treatment: *"Only one treatment explained in depth, made to feel it was the only one"*.

(2) GP shortcomings

The use of the word shortcoming was used to refer to a lack of interest on the part of GPs in considering the causes of possible illness: *"my GP doesn't always take into account other factors affecting the issue"*. Additionally, other participant added that GPs would not write prescriptions correctly: *"Frequently, GPs question the prescriptions given by others, or miswrite prescriptions"*.

(3) GP-patient social relations

In terms of the social relationships between GPs and patients, the participants also mentioned a few issues. For example, one participant expressed the lack of rapport with his/her GP: *"I don't feel much rapport with my GP, I feel more like another number in the large number of patients they have per day"*. Another participant complained about their lack of a positive attitude: *"I don't expect it, but at least more attitude that suggests friendliness and personal care"*. A third participant noted a lack of engagement skills from GPs: *"my GP does not always show an engaging attitude when I go for a visit"*. Finally, there was a participant that proposed that GPs should try to be more professional in their conduct: *"GPs should focus on being more professional"*.

Practice Issues

This theme includes two sub-themes and suggests issues within the General Practice.

(1) Accessibility

There were at least three comments related to issues with accessibility. For example, one participant complained about how busy the GPs at his/her practice were and how sometimes this would make appointments difficult to book: *"my GP is busy and hard to make an appointment"*. Another participant commented about the length of the consultation and the use of this time: *"having only a short window of time with the doctor I don't want to waste* *it re-explaining my problems"*. A third comment associated to this aspect was in relation to the inconsistency of GPs in the practice: *"the main issue is having a different doctor each time I go to my GP Surgery*".

(2) Workflow issues

In terms of workflow issues, the participants mentioned a few concerns. For example, one participant explained how GPs would unnecessarily waste consultation time: *"I sometimes feel my GP wastes time asking me things he should already know"*. Other participant made a reference to how the GP's attitude would make him/her feel: *"I don't feel much rapport with my GP, more like another number in the large number of patients they have per day"*. In addition, it was recognised that there was no easy solution to problems related to the attitudes of GPs: *"this is not something that can be solved simply, some GPs have different attitudes and I think it is better they come off as they really are rather than pretending, because you can see through that"*.

Solutions

This theme grouped together user views on how to improve the service. For example, at least one suggestion referred to having more options for treatment: *"GPs should state all the possible treatments. Let you research each one, and then discuss it"*. Another idea alluded to GPs having a more open-mind or holistic view: *"more holistic approach to causes of issues"*. A third recommendation indicated a more careful attitude when writing prescriptions: *"write prescriptions correctly"*. Subsequently, there was also a comment related to the possibility of better management of patient records: *"there should be a better way to access my information or know why am I going to see him"*. Better management of patient referrals was also mentioned: *"Referrals should take place based on issue at that point in time rather than waiting"*. A final comment advised General Practices to encourage GP consistency: *"be allocated a specific GP within the practice"*.

8.3.5 Differences in Results Between the Methods for Analysis

Frequency Lists Analysis: This analysis identified 8 different discourses that uncovered 1) issues related to GP consultation skills such as the provision of information, *the provision of* *treatment and the use of the consultation time*; and 2) issues related to the management of general practices and in particular *the handling of the patients' records by GPs or practices*. Although none of the identified discourses suggested how to improve these issues, they suggested there was a need for longer consultation times. Lastly, one issue that was identified only in this form of analysis for this data set was the *lack of options for treatment*.

Concordance Analysis: The results from the concordance analysis identified 8 discourses While two of these discourses were also found in some other forms of quantitative analysis (*the consistency of having the same GP, length and use of the consultation time*), one of them was found in this analysis only (*GP's professional skills*). The 5 remaining discourses appeared either in the frequency lists analysis or the collocation analysis. Finally, one mention about suggestions to improve the service was related to *GPs improving their negative attitudes in the consultation*.

Collocates Analysis: As anticipated at the beginning of the previous section, the length of this data set posed some problems to the analysis, which made it much more difficult to perform. An initial analysis found only two discourses *GP professionalism and the GP's attitudes towards patients*. A further analysis of the concordances in the collocations helped to identify four more discourses (*Continuity of the same GP, writing of prescriptions, use of consultation time and management of patients' records*) that complemented the initial results and allowed to create a much richer picture of the information contained in the data set.

Thematic Analysis: This analysis provided four large themes (*communication, relationships, practice issues and solutions*) that grouped together many of the discourses found in the quantitative analyses conducted on this data set. This type of analysis also recognised a few concepts that were not previously identified and that helped to complement the overall picture of the issues occurring in the *"doctor-patient communication and relationship during routine visits"*. These concepts were: *consultation inquiry, GP shortcomings, GP-patient social relations and workflow issues*. A much clearer and more organised way to show the comments related to suggestions for improvements to the service issues were uncovered in this analysis.

8.4 Discussion

The concepts that appeared in all the analyses performed on the crowdsourcing database could be divided into issues happening within the consultation and issues with the general practice management. For example, in terms of issues happening in the consultation, *the use of the consultation time, the provision of information by GPs, issues with the provision of prescriptions, issues with the options for treatment and attitudes of GPs* were mentioned. As seen in chapter 3, the use of the consultation time mostly depends on the skills and models of consultation that general practitioners follow (Pawlikowska et al., 2007). These allow richer relationships and communication with patients that can translate into benefits for the patient (Safran et al., 1998) and the reduction of unnecessary use of practice resources (Wilson et al., 1991; Howie et al., 1991; Freeman et al., 2002).

Similarly, *the provision of information by GPs, the provision of prescriptions and the options for treatment, also belong to the use of the consultation time* in the form of GP roles (Gregory, 2009). The importance of these roles is that it provides clear professional standardisation to the general practice (Goodwin et al., 2011) and to those pursuing this career.

On the other hand, issues related to the general practice management were the *management of patients' records and the consistency of having the same GPs*. Even though the main question of this activity aimed only to explore the issues occurring during routine visit, it becomes evident that these kinds of external factors have a great influence on the way patients perceive their relationship with their GPs (Thiedke, 2007). As previously mentioned, practices could avoid some of these issues by readjusting the process, culture and physical environment in which these services are currently delivered (Reiling et al., 2008).

Summary

In this chapter, a Crowdsourcing activity was proposed to explore the issues and opportunities relating to the *Effective communication and relationship between GPs and patients*. The purpose of this activity was to describe the planning and implementation process of this tool as well as to evidence its anticipated strengths, weakness and the results that were found after using selected methods for data analysis.

The following chapter will report on the findings of each of these human-centred design tools through a comparative study using, three independent strategies (*planning*, *deployment* and *output*) known for their applicability in multidisciplinary projects as well as a number of criterions that are believed can help to evidence the most obvious characteristics found in each of them.

Chapter 9 – Comparative Study of the Four Tools

Introduction

The previous four chapters presented the overall planning, implementation and results obtained from four representative Human-Centred Design tools (*Focus Groups*, *Love & Break-up Letters*, *Crowdsourcing,* and *Future Workshops/Rich pictures*) that were used for the investigation of a same case for study: *Communication and relationship between GPs and patients*.

This chapter will compare and discuss the findings from each of these Human-Centred Design tools using, three independent strategies (*planning*, *deployment* and *output*) known for their applicability in multidisciplinary projects as well as a number of criterions that are believed can help to evidence the most obvious characteristics found in each of them. The purpose of this analysis is to identify the possible strengths and weakness that these tools offer when applied to public involvement activities and try and form conjectures capable of helping health researchers to involve the public and patients in the design of new services or to improve existing ones. The activities described in this chapter were expected to provide an answer to the fourth question of this research – *What are the different strengths and weaknesses of the selected human-centred design tools and what conjectures can be drawn from these findings?*

9.1 Comparative Study

Comparative analysis (also known as comparative research) in its simplest form can be defined as the process of discovering quantitative and/or qualitative *similarities, differences and associations between entities* (Mills et al., 2006; Given, 2008:100). Some of the reasons for using comparative analysis can include i) an interest in progressing from exploratory studies to concept formulation (Collier, 1997) ii) trying to explain *tacit knowledge*, iii) find systematic structure, or iv) identifying invariances in a case study (Routio, 2007: n.p.), among others.

In comparative analysis, researchers need to select cases in which there is an adequate level of similarities in order to lower the risk of encountering uncontrollable variables in the relationships (Przeworski & Teune, 1970). Additionally, it is important to be aware about the difficulties when finding patterns if the entities are not sufficiently autonomous, or if there is not an adequate level of strength in the data (Azarian, 2011; Goodrick, 2014).

Routio (2007) explains that typical methods of conducting comparison analysis include *descriptive comparison* and *normative comparison.* He also points out that the main differences between these two styles are that, while descriptive comparison only aims to describe and explain the degree of similarities and differences between entities without trying to suggest changes (Routio, 2007; Caramani & Nering, 2009), in normative comparison, the researcher goes beyond descriptions and into assessing variables or mentioning best alternative(s) and suggestions on how to improve the selected entities (Routio, 2007).

Considering that the purpose of this comparison study was to, first, identify the strengths and weaknesses of the tools used for this research activities and, second, form conjectures capable of helping health researchers to involve the public and patients in the design of new services or to improve existing ones, the use of both forms of comparative studies were used. While descriptive comparison was used to identify the most obvious differences between the HCD tools; normative comparison was used to provide the best recommendations or alternatives based on the identified information.

9.2 Comparative Study Criteria

After reviewing several documents on how to compare or evaluate public involvement tools (Crosby et al., 1986; Warburton et al., 2006; South et al., 2005; Rowe & Frewer, 2000; Beckley et al., 2005; Vantanen & Marttunen, 2005), it was found that many conceptual frameworks tend to focus primarily on evaluating the outcome and effectiveness of public participation in relation to their impact on decision-making and project success (Abelson et al., 2003). It was also identified that although the typically used criteria for evaluation were not exactly the same in all the models (as these would be adapted according to project needs), there were a number of criterions that would repeat in several of these models (Rowe & Frewer, 2000; Beckley et al., 2005; Vantanen & Marttunen, 2005).

Based on these findings, this comparative study selected some independent strategies commonly applicable in multidisciplinary projects (Lategan et al., 2011) and known for helping to provide structure and adequacy to design projects without interfering with the final results: *planning phase*, *implementation phase, and output phase*. Additionally, within each of these categories it was allocated several criterions that were previously identified and are believed could help to evidence the most obvious characteristics found in each of the used tools.

9.2.1 Planning Phase

The planning phase could be described as the preparation of all the sequential steps an activity might require for achieving an objective (Kahraman & Yavuz, 2010). Depending on the project's needs, there will be specific steps (Landry, 2006). Montana & Charnov (1993:119) explain that a planning phase should include considerations about (i) the output, (ii) evaluation of alternative routes, and (iii) decisions on a specific path to achieve that destination.

Although proposing a planning process will not guarantee successful activities, it can certainly help to reduce the time, costs and effort that these might require (Kahraman & Yavuz, 2010). In addition, following a planning process can help researchers to keep track of the progress and how far they are from achieving the proposed goals (Time-management-guide.com, 2002). When applied to public involvement activities, having an adequate planning process can help to decide which tools are more adequate, what are the required number and type of participants, as well as what data analysis methods might work better, among other characteristics (Crosby et al., 1986, Warburton et al., 2006, South et al., 2005; Rowe & Frewer, 2000; Beckley et al., 2005; Vantanen & Marttunen, 2005). Some commonly found criteria that were considered as part of this strategy were:

Needed Resources: This criterion describes all the requires resources that a public involvement activity might require (Rowe & Frewer, 2000; Beckley et al., 2005).

Number and type of Questions: This criterion explains that in order to identify useful data it is important to have involvement tools that allow several numbers and forms of questions (Bernhardt & Geise, 2009).

Sampling and Recruitment: This criterion describes the number and type of participants required (Crosby et al. 1986; Rowe & Frewer, 2000; Beckley et al. 2005) as well as the methods used for their recruitment (Ritchie & Lewis, 2003).

9.2.2 Implementation Phase

Implementation phase could be defined as the execution of a plan, where independent observers can identify the strengths or weakness of the specific set of activities (Fixen et al., 2005). Usually, implementation is a continuous and non-linear process that take place before reaching project outcomes (Bassu, 1997; Fixen et al., 2005).

The literature about the tools used for involvement activities frequently provides only general descriptions of implementation phases while disregarding important factors that might help researchers to understand what to expect from particular tools (DSE, 2005c; Martin & Hanington, 2012; Kumar, 2013). Furthermore, some of the only ways in which information about particular tools can be accessed is by either searching for reporting studies about such tools or through their practice (Gibbs, 1999; Ritchie & Lewis, 2003; MediaLABamsterdam, 2012). EPA (2016) explain that when researchers can have access and a comprehensive understanding of the implementation processes a tool might have, the activity conditions and audiences can be customised to ensure the good development of an involvement activity. Some commonly found criteria that were considered as part of this strategy were:

Moderating: This criterion helps to identify if there is the need for a moderator and what benefits this one can brings into the development of the activity (Gibbs, 1999).

Flexibility of Discussion: This criterion explains the possibility for participants to have flexibility in their answers (Beckley et al. 2005).

9.2.3 Output Phase

Outputs or deliverables are the immediate results from a project, or in other words the results that an activity has achieved in the short term (Mills-Scofield, 2012). Given (2008), explains that research outputs can be identified by performing data analyses, which can be in qualitative, quantitative, or in a mixed-methods form. Using different methods of analysis will provide different forms of results (Patton, 2005) and it is important that researchers find optimal ways to present them in a comprehensive and useful manner.

Onwuegbuzie & Combs (2011) suggest that when doing research, the use of both qualitative and quantitative methods should be pursued, as the weaknesses of one method of analysis can be compensated by the strengths of other (Onwuegbuzie & Combs, 2011). Finally, one way in which researchers are able to identify the adequacy of the outputs is by comparing them with the project purpose and determining if there is a relationship between both (Given, 2008). Another commonly used form is by evaluating the outcomes and their effects on proposed projects (Van den Bos, 1998).

Length of Resulting Data: This criterion refers to the length of raw data that was gathered after finishing each of the activities (Walsh & Brinker, 2016; Patton, 2005)

Number of insights: This criterion makes reference to the number of insights that were obtained after doing the analysis of the obtained data (Warburton et al., 2006).

Relevance of insights: This criterion makes reference to how relevant were the insights in relation to the topic (Beckley et al. 2005).

9.3 Synopsis of Findings

This section will now introduce, several informative tables in which the findings from each of the selected HCD tools were compared based the previously explained strategies – *planning* (Table 9.1), *implementation* (Table 9.3) and *output* (Table 9.5). In order to construct the content in each of these tables, this research used empirical data that was gathered at the moment of planning, implementing and analysing each of the activities.

9.3.1 Planning Phase

Table 9.1 Actions and considerations in the planning phase for each of the tools

	Focus Groups	Future Workshop / Rich Pictures	Love & Break-up Letters	Crowdsourcing
Planning	Group Activity		Individual Activity	
	Face-to-face Activity		Non-face-to-face	
	The researcher needed to find a physical space to conduct these activities (Brunel University & Healthwatch Hillingdon)		Online Space (QuestionPro)	Online Space (Survey Monkey)
	Adapting the physical space required spending money on refreshments and stationary materials (costs)		None of the online softwares required payment but did required familiarising with its features	
	The number, the gender and other considerations about the participants were agreed to be the same for all the activities			
	Participants were recruited through flyers, online groups, e-mail and list servers			
	Additional participants were required as an alternative to last minute cancelations		Although the requested number of participants was reached faster not all surveys were fully completed therefore additional participants were required (22 in total)	Although the requested number of participants was reached faster not all surveys were fully completed therefore additional participants were required (25 in total)
	Participants were required to move to the alocated physical spaces		Participants could access the activity from anywhere as long as they had internet connectivity and a connecting device	
	Several dates and times had to be offered to the participants until one of them was found to be adequate		Participants only needed a link to the activity to participate	
	Each activity had a 1 hour (60 minutes) time limit		There was no time limit for the activity	
	1 Closed-end question (1st) 4 Open-end questions (2nd, 5th, 6th, 7th) 1 Multiple answer question (3rd) 1 Rating question (4th)	3 open-end questions	One open-end question	2 Rating questions (1st and 5th) 1 Close question (2nd) 1 Open question (3rd) 1 Multiple answer question (4th)
	These activities required the presence of a moderator with some group management skills		The was no need for a moderator	

From table 9.1 it can be seen that there are several differences and similarities between the used tools, for example

Need of Resources: For tools such as Focus Groups and Future Workshop / Rich Pictures, the physical presence of the participants required identifying and selecting an adequate physical space. Therefore, some of the needed resources included, finding a suitable location and providing easy accessibility to the participants. In addition, the location was required to be private, quiet, safe and a comfortable place for both the participants and the moderator. Regarding the adequacy of these areas, this activity incurred in some expenses related to the provision of refreshments and stationery materials (e.g. pencils, pens, markers, papers, etc.) that were used by the participants to complete some of the proposed activities.

On the other hand, in activities such as Love & Break-up Letters and Crowdsourcing, the type of space required was an online platform or software. While these platforms did not require any type of expenses, it was needed time to learn how to use several of its features. Some of the positive aspects found in these activities that are believed to have helped compensate for the time needed to learn about these platforms were: (i) the provision of easier accessibility to the participants and (ii) the possibility for them to perform the activities at their convenience, in their own time and to spend any amount time they wanted or required to complete them.

An additional difference between ‘Focus Groups & Future Workshop / Rich Pictures’ and ‘Love & Break-up Letters and Crowdsourcing’ was the need for a moderator. Since the first two mentioned tools suggested the presence of groups of participants, the researcher needed to learn crowd control skills to manage the groups. Learning these skills extended the planning time of these activities as well as the need for iterations to consolidate such skills.

Number and type of Questions: Another difference between the tools was the number and the type of question that were proposed for each of them (See table 9.1). Each of the activities had different numbers of questions and it is believed that in activities with smaller questions sets, not only the planning time, but also the iterations required for its construction, were reduced considerably. Nevertheless, while this was considered an initial advantage, it was then identified that the amount of information produced was considerably smaller in comparison with the other activities in which the number of questions ranged between 3 and

7. Regarding the type of questions, these were posed in several forms and aimed to ask participants about various kinds of information. This was considered to be an additional reason to explain the differences between the lengths and the information contained in each of the data sets. Here, an unanticipated finding was that while having more data was expected to yield more result, this was not entirely accurate as some portions of the information in the long data sets were found to be irrelevant to the case study.

Sampling and Recruitment: Some interesting findings were related to the sampling and recruitment of participants, for example, a first identified issue which was relevant to all the activities was related to reaching the proposed sample of gender. In activities such as Focus Groups and Future Workshop / Rich Pictures, the researcher had more control since all the participants were contacted to confirm their assistance prior to the activity. However, in activities such as Love & Break-up Letters and Crowdsourcing, although there were some demographic questions related to this matter, these only helped to identify how many males or females still needed to be recruited. A second and third issue were related to last-minute cancelations (in FG and FWRP) and the lack of completion of the activities (in LBL and CR)

Another important conclusion was that finding participants and confirming their assistance considerably increased the time spent in the recruitment phase as well as their required number. In activities such as Focus Groups and Future Workshop / Rich Pictures, those 'last-minute' cancellations required from the researcher to identify alternative participants to fill those spaces. Instead, in Love & Break-up Letters and Crowdsourcing activities, the researcher had to approach several more people in order to have the same number of male and female participants, and to have the correct number of finished surveys. This resulted in a total of 38 individuals approached for Focus Groups and Future Workshop / Rich Pictures activities (18 participants for FG and 20 participants for FWRP) and 47 individuals approached for Love & Break-up Letters and Crowdsourcing activities (22 participants for LBL and 25 participants for CR).

9.3.2 Implementation Phase

Table 9.2 Actions and considerations in the implementation phase for each of the tools

	Focus Groups	Future Workshop / Rich Pictures	Love & Break-up Letters	Crowdsourcing
Implementation	Participants were explained the purpose of the activity and what was required from them at the beginning of each activity			
	The moderator was required to set a thoughtful atmosphere for the participants to feel comfortable in the group		No need for setting a tone or atmosphere was required	
	Participants were able to share their opinion with others and to build more thorough ideas or concepts		There were no reports of the participants sharing any of their answers with others	
	The moderator helped to monitor the actions and discussions of the participants		There was no known way to ensure the information provided was relevant to the activity before its completion	
	Having a moderator allowed the building of a moderator-participants relationship		Since there was no moderator there was no way to build relationship with the participants	
	Because of the face-to-face nature of the activity all the participants were able to ask questions at any point of the activity if needed		Because of the non-face-to-face nature of the activity none of the participants were able to ask questions if needed	
	There was some flexibility in the answers the participants gave to the questions			
	Flexibility of discussion allowed the participants to give information that was not relevant or useful to the case of study (e.g. comparing different countries ‘health systems or services)		There was no method to control what kind of answers the participants gave to the questions until the end of the activity	
	Group thinking was evidenced in these activity		No group thinking was evidenced in this activity	
	Having a moderator allowed to see the body language of each participant when answering questions		There was no behaviour verification as there was no contact with the participants at the moment of them taking part in the activity	
	The activity had to be recorded as a method to back-up the information collected from the participants		All the information was saved in the software's database	
	There was a need to take additional notes to complement the recordings		No notes could be taken	

From table 9.3 it can be seen that there are several differences and only two similarities between the various tools. These differences and similarities could be divided into face-to-face activities (Focus Groups and Future Workshop / Rich Pictures) and non-face-to-face activities (Love & Break-up letters and Crowdsourcing).

Moderating: An initial difference between these sets of tools was related to the usefulness and benefits of having a moderator. For example, having a moderator was found useful as the participants could ask questions and collect more detailed instructions about the activities they were performing. Additionally, there was the possibility to build moderator-participants relationship and to study the participants' behaviour and non-verbal cues while responding to the questions of the activities. Other benefits were related to, being able to set a tone or ideal atmosphere in order to make the group feel comfortable enough to participate and respond to all the questions. In the discussions, care was needed as to ensure that all the participants had a fair and equal opportunity to speak and that their insights were heard and respected by others.

On the other hand, in the non-face-to-face activities (LBL and Cr), there were no contact with most of the participants at any point (except when they were asked to participate by the researcher), therefore there was no form to regulate the circumstances or conditions in which they responded to the activity questions. However, further analysis showed that not having contact with the participants was not always beneficial since it was found that several of them did not provide adequate answers to some of the activities questions and in the worst cases, did not complete the activities.

Flexibility of Discussion: The following findings were related to how tools such as Focus Groups and Future Workshop / Rich Pictures, in which participants were allowed some flexibility in their answers, seemed to encourage deeper and longer sets of data. On the other hand, in Love & Break-up letters and Crowdsourcing the responses were very short and to-the-point, which also helped in the subsequent analysis stage. While having more information was considered a strength at first, this was not always the case, as allowing flexibility in the discussion also gave to some of the participants the opportunity to discuss certain topics that were unrelated to the case for study (e.g. comparing different countries' health systems or services).

9.3.3 Output Phase

Table 9.3 Actions and considerations in the output phase for each of the tools

	Focus Groups	Future Workshop / Rich Pictures	Love & Break-up Letters	Crowdsourcing
Output	The recordings had to be to be transcribed into a clean document		The were options to download the data into excel or other programs	
	Database of 11726 Words	Database of 8557 words	Database of 2110 Words	Database of 645 words
	Long answers and broad data were found in this dataset	Long answers and broad data as well as short answers and punctual data were found in this dataset	Short answers and punctual data were found in these datasets	
	3 quantitative data analysis methods were used in the datasets (frequency, collocates, concordances (See chapter 4, section 4.2))			
	Time was required to learn about these quantitative methods (2 weeks)			
	Time was needed to find possible software's that could run the quantitative methods (3 days)			
	Frequency Lists: 10 results	Frequency Lists: 4 Results	Frequency Lists: 10 results	Frequency Lists: 8 Results
	3 results were found to be shared in both the Focus Groups and the Crowdsourcing datasets: Use of consultation time, GP professional skills and GP continuity			
	1 result was found to be shared in the Focus Groups and the FW/RP datasets: Reason for going to the GP			
	Concordances: 22 results	Concordances: 25 Results	Concordances: 6 results	Concordances: 8 Results
	Out of the total results, only 1 of them was found in all four datasets: GP professional skills			
	2 results were found to be shared in the Focus Groups, the Crowdsourcing, and the FW/RP datasets: The GP attitude and GP continuity			
	Out of the total results, 6 of them were found to be shared between the Focus Groups and the FW?RP datasets: Access, Communication between GPs, Referrals, Reasons for going to the GP, Patient Experience, and Sense of appraisal towards GPs			

	Focus Groups	Future Workshop / Rich Pictures	Love & Break-up Letters	Crowdsourcing
Output	Collocates: 6 results	Collocates: 3 results	Collocates: 6 results	Collocates: 6 results
	Only 1 result was found to be shared between the Focus Groups, the Love / break-up letters, and the Crowdsourcing datasets: The GP’s attitude			
	Only 1 result was found to be shared between the Focus Groups, the Love / break-up letters, and the FW/RP datasets: Sense of appraisal towards GPs			
	1 qualitative data analysis method was used in the datasets (thematic analysis)			
	Time was needed to learn about how to conduct thematic analysis (2 days)			
	Time was needed to recruit some external coders for analysing the data			
	Thematic Analysis: 3 main categories and 11 subcategories	Thematic Analysis: 4 main categories and 8 subcategories	Thematic Analysis: 5 main categories	Thematic Analysis: 4 main categories and 8 subcategories
	Out of the total results, 3 of them were found to be shared between the four datasets: GP-patient relationship, Suggestions for improvement and GP practices issues			
	Out of the total results, only 2 of them were found to be shared between the Focus Groups and the Crowdsourcing datasets: GP-patient communication and Service accessibility			
	The data reflected mainly opinions and attitudes	The data reflected mainly opinions and attitudes	The data reflected feelings and emotions	The data reflected mainly opinions
	Little creativity in the data	Large number of creative ideas	No creative ideas	Little creativity in the data
	This activity identified the second largest number of issues bout the case study (32)	This activity identified the largest number of issues about the case study (40)	This activity identified the less number of issues about the case study (23)	This activity identified the third largest number of issues bout the case study (26)
	This activity identified the third largest number of oppportunities about the case study (20)	This activity identified the largest number of opportunities about the case study (34)	This activity identified the less number of opportunities about the case study (4)	This activity identified the second largest number of opportunities bout the case study (24)
	Participants reported neither enjoyment or apathy with the activity at the end of it	Participants reported higer levels of enjoyment with the activity at the end of it	Participants reported neither enjoyment or apathy with the activity at the end of it	

The first difference in table 9.5 was connected to the end of the implementation phase and how information could be accessed by the researcher. In tools such as Focus Groups and Future Workshop / Rich Pictures the data had to be transcribed from the recordings (and this had to be done by the researcher), which took considerably more time than with the other tools (LBL and Cr), in which it was only necessary to download the answers into software's like Microsoft Excel or Word.

Length of Resulting Data: The next difference shown in this table, and probably the most obvious one in this phase, was the length of the resulting data that each of the tools yielded. For example, Focus Groups had a data set of 11,726 words, being the largest data set, then Future Workshop / Rich Pictures had 8,557 words, Love & Break-up Letters produced 2,110 words, and finally Crowdsourcing produced only 645 words, being the smallest data set. More interestingly, each of the data sets provided various forms and types of data. While Focus Groups, Crowdsourcing and Future Workshop / Rich Pictures showed long and short answers and mostly reflected opinions, in Love & Break-up Letters only short answers were found but also the expression of feelings and emotions were present.

Number of insights: The next difference shown in table 9.5 related to the moment of evaluating the results per activity and how different tools provided different results. For example, Future Workshop / Rich Pictures was the activity that produced not only more results in terms of issues and opportunities, but also contained more creative information (74 results). The next data set was Focus Groups (52 results), although this tool only provided opinions and attitudes. The third tool was Crowdsourcing (50 results). Lastly and more interestingly, Love & Break-up Letters produced only 27 results but most of the data was related to emotions and feeling that the participants had about the case for study. Considered together all these results, it is evidenced that aspects such as *GP's professional skill*s and *GP continuity* were the only results found to be repeated in all the quantitative and qualitative methods of analysis.

Relevance of insights: In terms of the relevance of insights, it was found that each tool would provide a great variety of similar and different results. For example, in terms of Frequency Lists, the only similar results were found to be between Focus Groups and Crowdsourcing – *Use of consultation time, GP professional skills* and *GP continuity – and* Focus Groups and Future Workshop / Rich Pictures – *Reasons for going to the GP* –. In terms of Concordances, this was the only method of data analysis that identify a same theme among all the tools – *GP professional Skills* –. On the other hand, Focus Groups, Crowdsourcing and Future Workshop / Rich Pictures were found to share only one theme – *The GP attitude* and *GP continuity* – among their data. In the Collocates analysis, it was found that Focus Groups, the Love / break-up letters, and Crowdsourcing were sharing as a theme – *The GP's attitude* – instead, between Focus Groups, the Love / break-up letters, and Future Workshop / Rich Pictures a sharing theme would be – Sense of appraisal –. Lastly, in the thematic analysis, it was found that all the tools would share at least three different themes – *GP-patient relationship*, *Suggestions for improvement* and *GP practices issues* –, additionally, Focus Groups and Crowdsourcing were also sharing two more themes – *GP-patient communication* and *Service accessibility* –.

9.4 Discussion

Planning Phase

The first finding believed to be important to mention is related to the different types of activities that the used tools encouraged. For example, face-to-face activities such as Focus Groups or Future Workshop / Rich Pictures seemed to offer a much extensive planning process as it was important to identify and select suitable settings for the participants to feel safe and comfortable. This finding seems to also agree with Litosseliti's (2003) and Powell & Single (1996) suggestion that selecting relaxing environments could help participants to avoid having negative associations with the locations. Instead, in activities such as Love & Break-up Letters and Crowdsourcing, in which the use of online platforms was predominant, it was found that although longer times were required to organise an activity, there were no costs related to these actions. These results correspond with Buchanan & Hvizdak (2009) studies that explain how easy and cost-effective these tools could be if the activities are properly planned. Additionally, some of the most commonly found issues that can be appear in these types of studies are related to consent forms, use of incentives, confidentiality, and data quality.

The next difference between the tools was the number and the type of question proposed for each of them. These activities proposed questions according to the suggestions found in the literature and based on what was believed to be best course of action for each of the tools.

This characteristic, allowed the participants to provide several forms and lengths of data which could explain the several variations in the lengths of the datasets. Merriam & Tisdell, (2015) suggest that one of the benefits of having different types of data relating to the same context is that it can help the researcher to evaluate the various phenomena from different angles.

Lastly, in terms of the issues identified during the recruitment stage and the lack of willingness displayed by some of the participants about engaging in these activities, very little information in the literature was found and mostly focusing on typical strategies used to involve individuals in research (e.g. flyers, posters, calls-for, telephone call, etc.) (see Research.uci.edu, 2017; Treweek et al., 2013). Regarding to the issue of cancelations, these findings correspond with Treweek et al. (2013), and the suggestion of reminding the participants in advance about the activities in order to avoid last-minute cancelations.

Implementation Phase

The use of a moderator was found to be very useful as it is believed that this helped to encourage a much richer and in-depth dialogue between the participants. This research, therefore agrees with Given's (2008) and Flick (2009) suggestions about having moderators that encourage ideal environments that do not disturb the participants' initiative to interact and creates an open space to allow the discussion to continue uninterrupted.

Regarding the flexibility of discussion, this characteristic was seen partially beneficial since it was believed that it would encourage more in-depth insights. Nevertheless, this characteristic also encouraged the participants to drift away from the main discussion into providing opinions or discussing issues of other areas of the health service provision. In order to avoid this issue, this research suggest Elliot (2005) recommendations about having skilful moderators able to bring the participants back into the main conversation without disrupting the flow of the discussion.

Output phase

Regarding the differences in the length of resulting data and the numbers of insights found in the data sets, as motioned before, these are believed to be consequences of the number of questions involved in each activity (Kruger's, 2002; Martin & Hanington, 2012; Bernhardt

& Geise, 2009; Jungk & Müllert, 1987), the type of questions (Bernhardt & Geise, 2009) and the type of information requested in each of the activities (Patton, 2005).

Regarding the relevance of insights, it is believed that all the founded answers were very helpful to respond to the main questions of the research and to identify if the initial purpose of these activities were reached. It is believed that the several tools that were used in this research were complementary to each other and offered sufficient data to draw a complete picture of the Doctor-patients communication and relationship current situation.

Considering the previous discussion, at this point it would be expected to suggest 'the best tool or combination of tools'. This is believed to be a very difficult task as all the tools used for this research were found to offer a variety of strengths and weakness that complemented each other. Therefore, this research considers that among this set of tools there is not a tool or set of tools that could cover all the aspects that an involvement activity might need and also suggests that when doing public involvement activities, researchers should be encouraged to use two or more engagement tools in order to be able to capture a complete picture of a case in study.

9.5 Development of a public involvement best practice informative guide

While this research was unable to offer a best or better solution for a public involvement tool, it does believe that proposing a document summarising the most relevant information found in this research, could help health researchers to better design public involvement activities.

The data used for this document was based on various pieces of relevant information contained in chapters 2 to 4 as well as the findings from the comparative study presented in section 9.3 in this chapter. This guide, was designed by having in consideration all three independent strategies (*planning*, *implementation* and *output*) as these could provide a large-scale organisation. Additionally, in each of these strategies it was grouped several steps aiming to help clarify the most relevant steps in a public involvement process (See table 9.4).

Table 9.4 Most relevant strategies and steps in a public involvement proces

Phase	Step	Description
Planning	Purpose for involvement	The importance of identifying and clarifying the purpose for involvement is that it can help the researcher to have a clear understanding of what needs to be done and therefore start to plan possible requirements and logistics (Hayes et al., 2012). One way in which the purpose for involvement could be established is by asking questions related to the (i) context in study, (ii) if there is need for this type of approach and (iii) what existing information about such context and (iv) what possible objectives the activity might require (BMA, 2015b:3-4).
	Target population and Sampling	Identifying the target population is to know who are those people that have relevant information about the topic in research. This people can be approached by identifying suitable stakeholder groups (Nutt & Backoff, 1992) or by randomly selecting all kinds of population. Sampling strategies instead, group together some question such as what are the possible data sources and how many participants are going to be required (Given, 2008). It is very common to find sampling types in research, such as probability and non-probability sampling and the selection of these types should be consistent with the type, form and length of the required data as well as the selected tool (Kothari, 2004).
	Level of involvement	One way to understand this step is by looking at the research of Charles & DeMaio (1993) and their three levels of participation: consultation, partnership and lay control. Each of these levels offer different forms of interaction with the participants and based on the activity requirements, researchers should attempt to use more than just one level. Understanding and distinguishing between these levels of involvement can help researchers to not only improve a research study to a higher degree, but to also be able to make a more critical decision about selecting appropriate tools to use.
	Selection of tools for Involvement activities	The selection of adequate involvement tools or techniques is a critical step in any involvement activity and it imposes a relative level of complexity since there are several tools used for these purposes with both similar and opposing characteristics. One way in which researchers could start the process of selecting tools is by clarifying the purpose of the involvement activity, selecting adequate participants and choosing their level of involvement. (Beckely et al., 2005; DSE, 2005b; Krishnaswamy, 2011).

Phase	Step	Description
Planning	Recruitment Strategies	Recruitment strategies are those channels that researchers can use to invite individuals to join or participate in an involvement activity. Some of the most common forms of recruiting people are advertisements, notices, media channels and e-mail lists (Research.uci.edu, 2017). Recruitment strategies are probably one the tasks that require more attention from the researchers and can take a considerably longer time to be completed. Therefore, this process should start as soon as it is possible and to continue with it until the required number of participants had been reached.
	Logistics	Logistics are the consideration of everything that the researcher needs to prepare in order to ensure an adequate implementation phase. In the literature, this step can relate to some of the cost and time considerations that the researcher needs to keep in mind when conducting involvement activities (Krishnaswamy, 2011; Robinson, 2014; BMA, 2015).
	Data Analysis Methods	Data analysis is considered important, since the collected information can be transformed into concepts (Given, 2008) that can help researchers to decide if the activity achieved the proposed purposes and objective as well as the desired level of findings. In interdisciplinary research, it is commonly found that data analysis can be mainly conducted in two ways – qualitatively and quantitatively (Neuman, 2013), and each of these forms can be selected to examine different types of data. Lastly, the decisions about which type of method to use should follow some considerations related to the type of gathered data
Implementation	Recruitment Review	Recruitment could be explained as putting into practice the proposed plan to identify and recruit participants. In this step, several ‘yes and no’ questions are created in order to help researchers identify whether the recruitment plan was working according to the initial expectations or if there was the need to use new recruitment channels
	Activity Implementation	This step intends to remind researchers about the potential requirements the involvement activity might need. Additionally, it is important to have alternative plans or tools in cases unexpected events happen such as last-minute cancelations, or software failures, etc.
Output	Data Analysis implementation	In this step, the researcher needs to apply the previously selected methods for data analysis. It is important to keep in mind all the additional elements that these selected forms of analysis might need such as additional reviewers or specific software’s.
	Presenting Final Results	It is important for the researcher to identify the most adequate and suitable ways to present the findings from the activity in order for all the stakeholders to be able to easily understand.

9.5.1 Possible applications of the public involvement informative guide

The intended use for the proposed guide, is to offer assistance to experienced and non-experienced health researchers about how to design public involvement activities based on their most relevant steps.

The *planning* phase, was created with the aim of providing a number of sequential steps that allows researchers to consider and evaluate the possible requirements upon which involvement activities are proposed. This phase counts with seven steps that represent actions such as, (i) *purpose for involvement*, (ii) *selecting the target population and sampling*, (iii) *level of involvement*, (iv) *selection of tools for involvement*, (v) *recruitment strategies*, (vi) *logistics* and (vii) *methods for data analysis* (see table 9.4 for detailed information about each of these steps). These actions could be considered as the core of most involvement activities and care should be taken at the moment of their development.

The *implementation* phase, was created considering a number of questions that allow the researcher to understand if all the necessary requirements of the activity have been achieved and how the tools might perform at the moment of their implementation. This phase counts with steps such as, i) *recruitment review* and ii) *activity implementation* (see table 9.4 for detailed information about each of these steps). It is advised that this phase should not be started until all the variables in the planning phase have been completed.

Lastly, the *output* phase was created with the purpose of helping the researcher to identify the kind and type of data that could be gathered after finishing the deployment of the tools. This phase count with steps such as i) *data analysis implementation* and ii) *presenting final results* (see table 9.4 for detailed information about each of these steps). It is also advised that this stage should be done until having finished with the data collection process.

While it is somehow difficult to demonstrate the success of an informative guide such as this one without some real-life scenarios testing, it is believed that some study cases of other similar documents could help to add some validation of its usefulness. For example, Rowe & Frewer (2000) offer a framework for public participation evaluation based on academic literature which aimed to help design and evaluate several steps believed to be relevant in participatory activities. This framework was proposed to help with involvement activities aiming to stablish science and technology policy (Rowe & Frewer, 2000). Another example could be Beckley et al. (2005) which offer three core criteria and several indicators to address the levels in which an involvement process can include public values into the decision-making process. This framework was used to guide public participation activities with the purpose of encouraging decision-making in forest management and policy. Lastly, another example could be Warburton et al. (2007) and its checklist for planning and manging a successful engagement initiative. In here it is offered several items which are seen as basic criterions to set objectives for engagement, monitor progress and achievements, and to identify lesson and improve on practice (Warburton et al. 2007:1). This framework was proposed mainly for involvement activities related to health and social care.

While most of these cases were proposed for activities different from health research, it is agreed by its authors that if these frameworks were to be applied into any other type of project requiring the participation of individuals, its elements should cover the most basic needs in most cases.

Summary

This chapter presented a comparative study of the four Human-Centred Design tools that were used in the main activity of this research. This study was done using three independent strategies known for their applicability in multidisciplinary projects as well as a number of criterions that helped to evidence the most obvious characteristics found in each of them. Through this comparison, three main conclusions were drawn:

1. There is a large range of HCD tools able to approach people in several ways and each of them offer several unique strengths and weaknesses. More importantly, when doing public involvement activities, researchers should be encouraged to use more than one tool as the weakness of such could be compensated by the strengths of another.

2. Considering this case for study it is believed that none of the tools selected for this research, if used individually, would have been able to cover in full all the aspects required in this involvement activities. Therefore, it is difficult to select the best or

better tool or set of tools. It also believed that the tools altogether were able to identify sufficient data to draw a complete picture of the doctor-patient communication and relationship current situation

3. Considering the difficulties of selecting a single tool or a group of better tools, this research decided instead to offer a best practice informative guide (containing the most relevant findings in this research) in order to provide an aid '*experienced as well as inexperienced health researchers'* on how to involve the public and patients in the design of new services or to improve existing ones.

Lastly, some of the existing documents similar to the prosed informative guide were evidenced in order to provide further explanation about its use and to try and validate its possible usefulness in health service related areas and others.

Chapter 10 – Conclusions and Future Work

10.1 Summary of Research

The studies described in this thesis were performed to address gaps in the research about the planning and implementation of involvement activities and the use of its tools when deployed in the investigation of issues and opportunities for the design of healthcare settings. This chapter attempts to respond to all the research questions proposed in Chapter 1 by summarising the main findings uncovered from all the activities. Additionally, the main contributions and limitations of this research as well as suggestions for future work, will also be discussed in this chapter.

1. **What is the state-of-the-art of Service Design and public involvement and how have these approaches been applied to healthcare service design?**

The main goal of chapter 2 was to perform a critical review of the literature related to the main concepts of this research. To start with, the theory of services was reviewed and it was found that it contains several characteristics that require thorough planning and organisation and that one disciple suited for this purpose is *service design*. The use of service design has been found to benefit several organisational areas of businesses, and more importantly is a method that highly encourages the use of customer knowledge and experience to help improve the creation and delivery of services. One way in which service design can gather the aforementioned type of data is through customer involvement, which is an approach that provides the public with the opportunity to share their opinions and ideas about a particular product, system or service and allows designers to identify and better understand (i) market and client needs, (ii) contexts, and (iii) relationships (Moritz, 2005).

There is not just one way in which customers can be involved, but rather several methods and tools can be used for this purpose, which can be adapted to the different phases of a design process. Nevertheless, many issues with conducting customer involvement activities seem to be related to the selection, planning, and use of these tools.

At the same time, the NHS and its approach to customer involvement were also reviewed. The findings from the literature review evidenced firstly that the National Health Service (NHS) has been the main provider of health and care services to the people residing in the United Kingdom for almost 70 years (NHS, 2010) and regardless of its significance and importance it has been underfunded in recent years, (Triggle, 2013) while also facing several issues related to doctor-patient rapport and their mediums of communication (Balint, 1957; Huges, 1983; Kaplan et al., 1989; Caccavo et al., 2000; Taylor, 2009).

In order to improve the service, the British government and the NHS have been actively encouraging the use of the public involvement (Department of Health, 2009) as an alternative to traditional reform and re-structure approaches. However, issues and challenges related to the overall process of customer involvement and the selection and use of its tools have also been reported in the literature.

2. **Which healthcare service could offer a promising setting for the deployment of public-driven tools?**

The main goal of chapter 3 was to identify a promising healthcare setting (with an ideal level of complexity) to be used as a case for study in a larger ethnographic investigation using representative Human-Centred Design tools in order to address some of the challenges in public involvement approaches that were identified in the literature review described in chapter 2. Thirty participants, belonging to two key stakeholder groups, were recruited through a non-probability sampling theory for some semi-structured face-to-face interviews.

Through a thematic analysis conducted on the collected data, five main categories relevant to receiving or delivering health and care services where identified: i) *aspects of communication*, ii) i*nformation management*, iii) *rooms and waiting areas in care centres*, iv) *governance controlled areas*, and v) s*ervice divisions in general practices*. A subsequent word frequency check performed on the whole dataset identified that from these five categories, *Service divisions in General Practices,* and in particular, the *time spent in the general practice consultation,* was the more promising healthcare setting to focus on. From a further review of these service touch points, three conclusions were drawn:

a. The satisfaction of patients with the length of time in consultation is not only related to the amount of time available, but also to the skills and ability of GP's to encourage effective communication and a strong relationship with the patient during the visit.

b. In the past decade, the use of public involvement initiatives has grown in general practices.

c. Although several studies have reported on some of tools that can be used in involvement activities, many of these only seem to provide partial descriptions of their overall processes, while also neglecting the investigation of alternative options.

Considering these conclusions, the answer to this research question was that one exemplar case in which to deploy patient-driven tools could be the *effectiveness in communication and relationships between GPs and patients* in General Practice consultation.

3. **Which Human-Centred Design tools used for public involvement can be applied in healthcare settings?**

The main goal of chapter 4 was to identify some human-centred design tools in order to evidence their overall process when applied into the study of service needs and opportunities. This process started by reviewing and following some of the most typical steps used in the planning of public involvement initiatives. Some of these steps were intended to (i) identify the purpose for the involvement activity (see also chapter 3), (ii) select an adequate degree of involvement required from the participants, (iii) identify and selected appropriate tools, (iv) establish sampling, recruitment and data collection procedures and (v) decide on methods for data analysis. From all these steps, steps 3 and 5 were given special attention, as they were considered to be the core of this activity.

The process of selecting adequate tools (step 3) started by identifying a set of five criteria related to the main purposes of the activity (criteria 1,2 & 3) and the previously selected healthcare setting (criteria 4) (see chapter 3). Simultaneously, an initial review of several human-centred design tools included in the category *Tools that Capture Meaning, Needs and Situated Actions* from Giacomins' (2014) tools framework (See table 4.1), identified eight initial alternatives. After having evaluated all these alternatives against the selected criteria through relevant literature and four unstructured interviews, only four tools were selected (one of them being a combination of two tools): *Focus Groups, Future Workshops/Rich pictures*, *Love & Break-up Letters* and *Crowdsourcing,*

On the other hand, in step 5, four different methods for data analysis were identified and selected – *frequency lists*, *concordances*, *collocates* and *thematic* analysis. The purpose of selecting this number of methods was to identify which of these would be more beneficial in relation to the selected tools.

4. **What are the different strengths and weaknesses of the selected human-centred design tools and what conjectures can be drawn from these findings?**

The main goal of chapter 9 was to evidence the main strengths and weaknesses of each of the selected Human-Centred Design tools through a Comparative study. In order to perform this analysis, it was considered three independent strategies (*planning*, *deployment* and *output*) (see tables 9.1, 9.3, 9.5) known for their applicability in multidisciplinary projects as well as a number of criterions that were believed could help to evidence the most obvious characteristics found in each of them

The main strengths and weaknesses of these tools at the moment of their *planning* were firstly the form in which participants could be approached (face-to-face and a non-face-to-face), as this usually dictates the required setting (physical spaces and online platforms). The different settings also allow different forms of public access and reach, which could be of benefit when trying to involve citizens. Regarding to the different numbers, types and forms of questions that each of these tools introduced to the main activity, this helped the research to gather various forms and lengths of data. In terms of the recruitment of an ideal number of participants, this was found to be one the most time-consuming activities for all the tools employed. Lastly, half of the activities required the need of a moderator and this usually means a person with a high level of interpersonal and crowd control skills which can be time consuming to master.

The main strengths and weaknesses of these tools at the moment of their *implementation* were firstly, that in face-to-face activities, participants could relate to others and interact with a moderator, allowing them to have a more comprehensive understanding of what was required from them, while in the non-face-to-face activities, the participants were left to their own thoughts about how the activities should be completed, therefore producing several incomplete activities or inadequate answers. Secondly, in face-to-face activities participants could relate to and interact with each other, allowing them to understand various points of view and ideas and this in turn resulted in more information at the end of the activities.

The main strengths and weaknesses of these tools at the moment of their *output* were related to the length of the data sets which was different for each of the activities. Regardless of this, it was found that each of these datasets provided information able to create a rather comprehensive picture of the results. Next, it was found that in terms of identified results, Future Workshop / Rich Pictures was the tool that not only produced more results in terms of issues and opportunities, but also contained more creative information about the case of study.

Considering the previous findings, it was concluded that it was a very difficult task to select 'a best tool or combination of tools' as the weakness of some of the used tools were compensated by the strengths of the others. Consequently, in order to provide much richer picture of the findings in this research, it was presented instead and informative guide summarising the most relevant information found in this research in order to aid '*experienced as well as inexperienced health researchers'* to design better public involvement activities.

10.1.1 Concluding Remarks

The research described in this thesis aimed to address *challenges related to the application of typical HCD methods when deployed in the investigation of issues and opportunities for the design of healthcare settings and to provide a 'best practice' information aid for its use by health researchers.* Specific customer involvement challenges that were addressed in this research were:

1. The identification of adequate participants and recruitment strategies (Nicolajsen & Scupola, 2011) (See table 2.2).

2. The identification and selection of appropriate channels (tools) for involving different customers and gathering required data (Nicolajsen & Scupola, 2011; Andersson & Hjertqvist, 2015) (See chapter 2, table 2.2).

3. Lack of understanding about to what extent and in which manner the public should be involved in these approaches (The House of Commons, 2007) (See chapter 2, table 2.3).

4. A disregard of exiting literature about using alternative customer involvement method or tools (See Chapter 3) (See chapter 3, subsection 3.4.2).

In order to achieve this aim, this research proposed several activities related in the first place to the identification of a promising healthcare setting in which to deploy Human-Centred Design tools (Chapter 3). Second, it aimed to evidence the steps in the design of involvement activities and the selection and deployment of Human-Centred Design tools as well as methods for data analysis (Chapters 4 to 9). Lastly, a comparative study of the strengths and weaknesses of these tools in relation to their planning, implementation and output process was conducted. From these activities, it was possible to conclude that:

1. Involving people should not be seen as an alternative or additional method in the design of healthcare settings, but rather should be the centre of this process.
2. In the identification and recruitment of participants, healthcare researchers should ensure:
    a. To use as many available recruitment channels (e.g. flyers, specialised participants' banks, social media groups, etc.) as they can access
    b. That recruitment tasks should be conducted by at least one person (or more if working as a design team) at all times and from the beginning to the end of the data collection phase
3. The number of public involvement tools is vast and constantly increasing. For healthcare researchers:
    a. Using a tool framework such as the one proposed by Giacomin (2014), could help to, i) clarify the purpose or essence of a tool and ii) make any preliminary selection process much easier, without requiring specialised knowledge.

   b. Adequate selection of tools depends mainly on the requirements proposed for the activity and the expected degree of public involvement.
   c. Any method or tool for public involvement will have some advantages and disadvantages, and therefore involvement activities should use at least two or more tools in order to able to involve people in different ways.
4. The level of participation should be based on the purpose for the involvement. Frameworks such as the one proposed by Charles & DeMaio (1993) can be of great help in these situations.
5. The selection of data analysis methods is equally as important as selecting the appropriate tools to involve people, and the use of both quantitative and qualitative method for data analysis should be considered over using just one method in order to gain different perspectives on the data.

10.2 Limitations of Research

A series of limitations that were found in various activities implemented in this research were related to the i) subject under research, ii) data collections methods and analysis. and iii) the validation of the findings.

Subject under Research

Customer Involvement as a design approach is a complex activity with several interpretations and uses in product, service and system design. Its multidisciplinary use suggests several difficulties at the moment of investigating and synthesising the different variations in which this methodology is used, as there is a risk of over-generalising its significance. As the main focus of this research was to provide a comprehensive overview of the process of conducting public involvement activities in healthcare organisations, this research was unable to investigate other possible forms of its use in detail. Nevertheless, when possible the researcher, made explicit in some parts of this thesis the possible similarities and differences that would arise if using this approach in different instances. While recognising this issue, this research also points out that the processes of conducting public involvement activities will have various common characteristics and considerations regarding of the type of project in which it is used.

Data Collection Methods and Analysis

The data collection methods employed in this research had some limitations because of their nature. Since this research used only qualitative research methods – qualitative interviews, focus groups, future workshops / rich pictures, love & break-up letters, crowdsourcing surveys and co-design workshops – there was no clear formula to propose ideal sample numbers of participants. However, as explained in chapter 3, 4, and 10, the selection of the number of participants for the implemented activities in this research (30 participants for the interviews, 18 participants for the focus groups, 18 participants for the future workshops / rich pictures, 18 participants for the love & break-up letters, 18 participants for the crowdsourcing surveys and 18 participants for the co-design workshops) followed similar ranges to those suggested in their respective literature reviews. While it is believed that this sample size was sufficient for a qualitative study and the research described in this thesis yielded significant results despite these limitations, it is believed that more rigorous or significant results could be expected from using larger sample sizes.

In terms of the data analysis methods, the limitations were related to both the qualitative and quantitative methods that were used in this research. While it is believed that the results from the different activities were very similar in terms of their nature, it is recognised that when using qualitative methods (thematic analysis) most of the resulting data comes from the subjective interpretation of the reviewer. On the other hand, in terms of the quantitative methods (frequency lists, concordances analysis and collocates analysis), their main limitation (as made explicit in chapter 4) was related to the amount of data yielded, which was believed to be insufficient for these types of analysis.

Validation of the Findings

The validity of the outcomes of every activity was considered at all moments during this research and several efforts were made to encourage this requirement, such as the use of triangulation by multiple coding and member checking. However, some limitations are still present in the outcome explained in chapter 9, since this could not be implemented in real-life situations due to time constrains.

10.3 Future Work

During the research process, several other research areas were identified, which could build on the knowledge created by this research. Therefore, further research could include:

1. This research provided a comprehensive overview of the different methods that can be used to recruit participants. However, more detailed research on different or more optimal methods to identify and recruit people willing to participate in involvement activities would enhance this process that seems to affect most activities of this kind.
2. This research used several methods that involved people in different forms (groups, individual, online, face-to-face). However, further research using a range of tools different from the ones proposed in this research could be used in order to not only confirm the current results, but also to complement them.
3. This research could be replicated in other cases or different industries (e.g. tourism, communication, etc.) to investigate if similar frameworks or implementation processes emerge.
4. The proposed informative guide could be implemented in real-life situations by health organisations to identify further changes, issues and possible solutions in order to enhance the validity of this research.

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Appendix A – Literature Review

Appendix A1. Literature Review Chapter 2

Keyword Search	catalogue; database; search engine;	Discipline; Type	Result of search #	# of citations
			Services	
Services & Marketing	Brunel Library	Marketing	Kotler, P. & Bloom, P. (1984) Marketing professional services. Englewood Cliffs, NJ: Prentice-Hall.	N.G.
			Kotler, P. (1991) Marketing Management: Analysis Planning Implementation and Control. Prentice Hall, New Delhi.	N.G.
		Service Design	Morelli, N. (2002) Designing Product/Service Systems: A Methodological Exploration. Design Issues, 18(3), pp. 3—17.	289
	Google books	Marketing	Zeithaml, V.A. & Bitner, M.J. (1996) Services Marketing. McGraw-Hill, New York, NY	39
			Shanker, R. (2002) Services Marketing. New Delhi: Excel Books. Journal of Marketing	55
		Service Design	Looy, B.V., Gemmel, P. and Dierdonck, R.V., (2003. Services Management: An Integrated approach. 2ed edn. Prentice Hall	N.G.
	Google Scholar	Service Design	Hollins, G., & Hollins, B. (1991) Total Design: managing the design process in the service sector. Pitman	151
Characteristics in Services	Brunel Library (Harvard Business Review)	Multidisciplinary	Sasser, E. (1976) Match supply and demand in service industries. Harvard Business Review, 54(6), pp. 133—140.	N.G.
	Brunel Library		Kotler, P. (1986) *Principles of marketing*. Englewood Cliffs, N.J.: Prentice-Hall.	N.G.
	JSTOR	Multidisciplinary	Parasuraman A., Zeithaml V.A. and Berry L.L. (1985) A Conceptual Model of Service Quality and Its Implications for Future Research, Journal of Marketing, 49, 41—50.	23736
	Wiley Online Library	Multidisciplinary	Carman, J. and Langeard, E. (1980) Growth strategies for service firms. Strat. Mgmt. J., 1(1), pp. 7—22.	523
			Strydom, J. (2004) Introduction to marketing. Cape Town, South Africa: Juta.	54
			Rao, R. (2007) Services Marketing. Singapure: Pearson Education.	N.G.
		Healthcarte	Berkowitz, E. (1996) Essentials of health care marketing. Gaithersburg, Md.: Aspen Publishers.	182
	Google Scholar (emeralinsight)	Multidisciplinary	Knisely, G. (1979) Financial Services Marketers Must Learn Packaged Goods Selling Tools. Advertising Age. 50(March), pp. 58—62	27
	Google Scholar	Service Design	Bessom, R. & Jackson, D. (1975) Service Retailing—A strategic Marketing Approach. Journal of Retailing, 8(Summer), pp. 137—149	122
Service Design	Brunel Library	Service Design	Stickdorn, M. & Schneider, J. (2011) What Is Service Design? Hoboken NJ: Wiley.	N.G.
		Human-Computer Interaction	Moggridge, B. (2007) People and Prototypes. Designing Interactions. Cambridge, Mass: MIT Press, pp. 646—662	N.G.

	Brunel Library (emeraldinsight)	Multidisciplinary	Shostack, G. (1982) How To Design A Service. European Journal Of Marketing, 16(1), pp. 49—63	N.G.
	Brunel Library (Harvard Business Review)	Multidisciplinary	Shostack, G. (1984) Design Services That Deliver. Harvard Business Review (84115), pp. 133—139.	1700
		Marketing	Martin, C. (1999) The history, evolution and principles of services marketing: poised for the new millennium, Marketing Intelligence & Planning, Vol. 17 Iss 7 pp. 324 - 328	43
	Google Search (Design Council)	Report	Cottam, H. & Leadbeater, C. (2004) Red Paper 01 Health: Co-Creating Services. Design Council, pp. 1—40	150
	Google Search	Service Design	Evenson, S., Holmlid, S., & Mager, B. (2006) Bringing Design To Services. Paper Presented At IBM Service Sciences, Management And Engineering Summit, New York.	26
Customer Involvement	Brunel Library	Customer involvement	Choubtarash, N., Mahdieh, O., & Barati, A. (2013). The study of the relationship between consumer involvement and purchase decision (Case study: Cell phone). Interdisciplinary Journal Of Contemporary Research In Business, 4(12).	N.G.
	Bura Brunel	Multidisciplinary Thesis	Cotterell, P. (2006). Living with life limiting conditions: A participatory study of people's experiences and needs. PhD. Brunel University.	N.G.
	Google Scholar	Customer Participation	Büttgen, M. & Ates, Z. (2009). Customer participation and its effects on service organisations: An institutional economics perspective. SDL Naples Forum, Capry(Italy) (In Yanovskaya, 2012)	5
	Google Scholar (emeralinsight)	Multidisciplinary	Matthing, J., Sandén, B. and Edvardsson, B. (2004). New service development: learning from and with customers. International Journal of Service Industry Management, 15(5), pp. 479-498.	20
	Brunel Library (ScienceDirect)	Multidisciplinary	Alam, I. (2006). Removing the Fuzziness from the Fuzzy-End of Service Innovations through Customer Interactions. Industrial Marketing Management 35 (4):468–80.	N.G.
			Von Hippel, E. (1976). "The dominant role of users in the scientific instrument innovation process". Research Policy, 5 (3), 212-239. doi:10.1016/0048-7333(76)90028-7	N.G.
	Brunel Library (JSTOR)	Multidisciplinary	Von Hippel, E. (1986), "Lead Users: A Source of Novel Product Concepts", Management Science, 32 (7): 791–806,	N.G.
			Wind, J and Mahajan, V. (1997). "Issues and Opportunities in New Product Development: An Introduction to the Special Issue." Journal of Marketing Research 34 (February): 1-13	N.G.
	MIT Press	Multidisciplinary	Von Hippel, E. (2014) User Innovation. In: A. Sigismund, K. Möslein & R. Reichwald, ed., Leading Open Innovation, 1st ed. Massachusetts: MIT Press, pp. 117-138.	55
	Google Scholar (emeralinsight)	Multidisciplinary	Sigala, M. (2012). Social networks and customer involvement in new service development (NSD). Int J Contemp Hospitality Mngt, 24(7), pp.966-990.	77
Benefits and challenges of Customer involvement	Google Scholar (emeralinsight)	Multidisciplinary	Dadfar, H., Brege, S., & Sarah Ebadzadeh Semnani, S. (2013). Customer involvement in service production, delivery and quality: the challenges and opportunities. International Journal of Quality and Service Sciences, 5(1), 46-65.	36
			Nicolajsen, H., & Scupola, A. (2011) Investigating issues and challenges for customer involvement in business services innovation. *Journal of Business & Industrial Marketing, 26*(5), 368-376.	47
Reference of reference	Dadfar et al. (2013)		Prahalad, C.K., Ramaswamy, V. 2000. Co-opting customer competence. Harvard Business Review, Vol. 78, No. 1, pp. 79-87 (In Yanovskaya, 2012)	N.G.
			Magnusson, P.R., Matthing, J. and Kristensson, P. (2003), "Managing user involvement in service innovation: experiments with innovating end users", Journal of Service Research, Vol. 6 No. 2, pp. 111-24.	N.G.
			Kelley, S.W., Donnelly, J.H. Jr and Skinner, S.J. (1990), "Customer participation in service production and delivery", Journal of Retailing, Vol. 66 No. 3, pp. 315-35.	N.G.
			Lovelock, Christopher H. and Young, Robert F. (1979), Look to consumers to increase productivity. Harvard Business Review, 57 (3), 168-178.	N.G.

			Alam, I. (2002). An Exploratory Investigation of User Involvement in New Service Development. Journal of Academy of Marketing Science 30 (3):250–61.	N.G.
			Bitner, M.J., Faranda, W.T., Hubbert, A.R. and Zeithaml, V.A. (1997), "Customer contributions and roles in service delivery", International Journal of Service Industry Management, Vol. 8 No. 3, pp. 193-205.	N.G.
			Dabholkar, Pratibha A. (1990), How to improve perceived service quality by increasing customer participation, in Developments in Marketing Science, B. J. Dunlap, Ed. Vol. XIII. Cullowhee, N.C.: Academy of Marketing Science, 483-487	N.G.
			Zeithaml, V.A. and Bitner, M.J. (2000), Services Marketing: Integrating Customer Focus Across the Firm, 2nd ed., McGraw-Hill, Boston, MA.	N.G.
	Nicolajsen & Scupola (2011)		Nambisan, S. (2002), "Designing virtual customer environments for new product development: toward a theory", The Academy of Management Review, Vol. 27 No. 3, pp. 392-413.	N.G.
			Kristensson, P., Matthing, J. and Johansson, N. (2008), "Key strategies for the successful involvement of customers in the co-creation of new technology-based services", International Journal of Service Industry Management, Vol. 19 No. 4, pp. 474-91.	N.G.
			Garton, B. & Carter, S. (2002). First Nations Consultation: Higher, Wider, Deeper and Sooner. Housser & Tupper.	N.G.
			Stanton, W. J. (1974) Marketing Services: An Approach. European Journal of Marketing, Summer, pp. 545	N.G.
			Smedlund, A. (2008), "Identification and management of high-potential professional services", Management Decision, Vol. 46 No. 6, pp. 864-79.	N.G.
Human-Centred Design				
Human-Centred Design	Brunel Library	HCD	Giacomin, J. (2014) What is human centred design? *The Design Journal*. 17 (4), pp. 606-623.	N.G.
		Book	Norman, D. and Draper, S. (1986). User centered system design: New Perspectives on Human-Computer Interaction Hillsdale, N.J.: L. Erlbaum Associates.	N.G.
			Rouse, W. (1991). Design for success. New York: Wiley.	N.G.
			Preece, J., Rogers, Y. & Sharp, H. (2002) Interaction Design. 1st Ed. New York, NY: J. Wiley & Sons	N.G.
	Brunel Library (Springer)	Multidisciplinary	Kensing, F. & Blomberg, J. (1998) Participatory Design: Issues And Concerns. Computer Supported Cooperative Work (CSCW), 7(3-4), pp. 167—185.	N.G.
	Brunel Library (ScienceDirect)	Multidisciplinary	Kahraman, Z. (2010) Using User-Centred Design Approach In Course Design. Procedia-Social And Behavioural Sciences, 2(2), pp. 2071—2076.	N.G.
	Bura Brunel	HCD	Giacomin, J. & Love, S. (2011) The Human-Centred Design Paradigm, Interfaces Magazine, Issue 87, BCS The Chartered Institute For It, Swindon, UK	N.G.
			Giacomin, J. (2012) What Is Human-Centred Design. Paper Presented At The 10º Congresso Brasileiro De Pesquisa E Desenvolvimento Em Design, Sao Luis, 10—13 October.	N.G.
	Google Scholar	Multidisciplinary	Abras, C., Maloney-Krichmar, D. & Preece, J. (2004) User-Centred Design. Encyclopedia Of Human-Computer Interaction. Thousand Oaks: Sage Publications, 37(4), pp. 445—56.	747
	Google Scholar (ACM)	Multidisciplinary	Muller, M. & Kuhn, S. (1993) Participatory Design. Communications Of The ACM, 36(6), pp. 24—28.	564
	Google Scholar (Springer)	Multidisciplinary	Ritter, F., Baxter, G. and Churchill, E. (2014) Fundations for Designing User-Centered Systems. What System Designers Need to Know about People. London: Springer.	34
	Google Books	Innovation	Berkowitz, L. and McCarthy, C. (2013). Innovation with information technologies in healthcare. London: Springer.	N.G.
	Google books (Sage)	Multidisciplinary	Taylor, N. (1998). Urban planning theory since 1945. London: SAGE Publications.	745

	Delf University	HCD	Steen, M. (2008) The Fragility Of Human-Centred Design. 1st Ed. Amsterdam: Delft University Press	N.G.
	YouTube	HCD	Kelley, D. (2002) David Kelley: Human-centered design. [Video file] Retrieved from: http://www.ted.com/talks/david_kelley_on_human_centered_design?language=en#t-186304	N.G.
Principles of HCD	Google Scholar	Multidisciplinary	Saur-Amaral, I. & Kofinas, A. (2010) Multidisciplinary Collaborations In Pharmaceutical Innovation: A Two Case-Study Comparison. Journal Of Business Chemistry, 7(3), pp. 131—153	6
			Conole, G., Scanlon, E., Mundin, P. & Farrow, R. (2014) Interdisciplinary Research: Findings From The Technology Enhanced Learning Research Program. The Open University, London, UK, pp. 1—18	8
	Google Scholar (ACM)	UCD	Erickson, T. (1995, September). Notes on design practice: Stories and prototypes as catalysts for communication. In Scenario-based design (pp. 37-58). John Wiley & Sons, Inc..	233
	Brunel Library	Book	Long, J. & Whitefield, A. (1989) Cognitive ergonomics and human-computer interaction. Cambridge [England]: Cambridge University Press.	N.G.
		Multidisciplinary	Fleischmann, K. & Daniel, R. (2010) Increasing Authenticity Through Multidisciplinary Collaboration In Real-Life Scenarios In Digital Media Design Education. Codesign, 6(2), pp. 61—74	N.G.
	Brunel Library (ACM)	Multidisciplinary	Forlizzi, J. & Ford, S. (2000) The Building Blocks Of Experience: An Early Framework For Interaction Designers. New York, pp. 419—423.	N.G.
	Brunel Library (ACM)	Multidisciplinary	Gould, J. and Lewis, C. (1985). Designing for usability: key principles and what designers think. Communications of the ACM, 28(3), pp.300-311.	N.G.
	Brunel Library (IGI)	Multidisciplinary	Jumisko-Pyykkö, S. & Vainio, T. (2010) Framing The Context Of Use For Mobile HCI. International Journal Of Mobile Human Computer Interaction (IJMHCI), 2(4), pp. 1—28.	N.G.
	Brunel Library (SAGE Journals)	Multidisciplinary	Leape, L. (2003) Human Factors Meet Health Care: The Ultimate Challenge. Journal Of Medical Licensure And Discipline, 4(1), pp. 179—85.	N.G.
	Brunel Library (Springer Link)	Multidisciplinary	Wright, P., Blythe, M. & McCarthy, J. (2006) User Experience And The Idea Of Design In HCI. Springer, pp. 1—14.	N.G.
	Brunel Library (Taylor & Francis Online)	Multidisciplinary	Gulliksen, J., Göransson, B., Boivie, I., Blomkvist, S., Persson, J., & Cajander, A. (2003) Key Principles For User-Centred Systems Design. Behaviour & Information Technology, 22(6), 397—409	N.G.
	Brunel Library (Taylor & Francis Online)	Multidisciplinary	Von Hippel, E. (1999). Creating breakthrough at 3M. *Harvard Business Review*, 77, pp.47-57.	N.G.
	Brunel Library (ProQuest)	Multidisciplinary	Saunders, M., Lewis, P. and Thornhill, A. (2007). Research methods for business students. Harlow, England: Financial Times/Prentice Hall.	N.G.
	Brunel Library (ScienceDirect)	Multidisciplinary	Keinonen, T. (2009) Design Contribution Square. Advanced Engineering Informatics, 23(2), pp. 142—148.	N.G.
	Google Search	UCD	Travis, D. (2009) The Fable Of The User-Centred Designer. London: Userfocus.	N.G.
		Blog	Nehal, J. (2009). Advantages & Disadvantage of Prototyping process model. Intelligence on Tap. Retrieved from http://www.iotap.com/blog/entryid/124/advantages-disadvantage-of-prototyping-process-model	N.G.
Reference of reference	Giacomin (2014)		Berg, B. (2001) Qualitative Research Methods For The Social Sciences. 1st Ed. *Boston*: Allyn And Bacon.	N.G.
			Brown, M.T 2005, Corporate Integrity: rethinking organizational ethics and leadership, Cambridge University Press, Cambridge, UK.	N.G.
			Cesvet, B., Babinski, A. and Alper, E. 2009, Conversational Capital: how to create stuff that people love to talk about, Pearson Education Inc., Upper Saddle River, New Jersey, USA.	N.G.
			Degani, A. 2004, Taming HAL: designing interfaces beyond 2001, St. Martin's Press, Palgrave-Macmillan, New York, New York, USA.	N.G.

			Gasson, S. (2003) Human-Centred Vs. User-Centred Approaches To Information System Design. The Journal Of Information Technology Theory And Application (JITTA), 5(2), pp. 29—46	N.G.
			Gray, D., Brown, S. and Macanufo, J. 2010, Gamestorming: A Playbook for Innovators, Rulebreakers, and Changemakers. Sebastopol, California, O'Reilly Media, Inc..	N.G.
			Hatch, M.J. and Schultz, M. 2008, Taking brand initiative, Jossey-Bas Publishers, San Francisco, California, USA.	N.G.
			Holt, D. and Cameron, D. 2010, Cultural strategy: using innovative ideologies to build breakthrough brands, Oxford University Press, Oxford, UK.	N.G.
			ISO, International Organization For Standardization (2010) ISO 9241-210:2010: Ergonomics Of Human-System Interaction — Part 210: Human-Centred Design For Interactive Systems.	N.G.
			Jordan, P. W. (2003) Designing Pleasurable Products. London: Taylor & Francis E-Library	N.G.
			Krippendorff, K. (1989) On The Essential Contexts Of Artefacts Or On The Proposition That Design Is Making Sense (Of Things). Design Issues, 5(2), pp. 9-39	N.G.
			Krippendorff, K. (2004) Intrinsic Motivation And Human-Centred Design. Theoretical Issues In Ergonomics Science, 5(1), pp. 43—72.	N.G.
			Lindstrom, M. 2008, Buyology: how everything we believe about why we buy is wrong, Random House Business, London, UK.	N.G.
			Lucero, A. & Arrasvuori, J. (2010) PLEX Cards: A Source Of Inspiration When Designing For Playfulness, pp. 28—37.	N.G.
			Norman, D. (2004) Emotional Design. New York: Basic Books.	N.G.
			Suchman, L.A. 2007, Human-machine reconfigurations,: plans and situated actions, 2nd edition, Cambridge University Press, Cambridge, UK.	N.G.
			Temporal, P. and Alder, H. 1998, Corporate charisma: how to achieve world-class recognition by maximising your company's image, brands, and culture, Piatkus Publishers, London, UK.	N.G.
			Verganti, R. (2009) Design-Driven Innovation: Changing The Rules Of Competition By Radically Innovating What Things Mean. 1st Ed. Boston: Harvard Business Press.	N.G.
			Von Hippel, E. (2005), Democratizing Innovation, MIT Press, Cambridge, MA	N.G.
			Moritz, S. (2005) Service Design: Practical Access to an Evolving Field. Design Managament Review. 19(1) , London.	N.G.
NHS & Health Service				
The NHS	Brunel Library	BMJ	Williams, l. (2013) Improving The Safety Of Patients In England, National Advisory Group On The Safety Of Patients In England, August 2013, pp. 1—46	N.G.
	Google Search	Website	NHS (2010) About The National Health Service (NHS) In England - NHS Choices. [Online] Available At: http://www.NHS.uk/NHSengland/theNHS/about/pages/overview.aspx [Accessed: 12 Mar 2014].	N.G.
			NHS (2014) The NHS history (1948-1959) - NHS England - NHS Choices. [online] Available at: http://www.nhs.uk/NHSEngland/thenhs/nhshistory/Pages/NHShistory1948.aspx	N.G.
			NHS (2013) The NHS Belong to the People: A Call to Action. Department of Health, pp.1-24.	N.G.
Issues Faced by the HNS	Brunel Library	Book	Balint, M. (1957) The Doctor, his Patient and the Illness London: Pitman Medical.	N.G.
	Brunel Library (JSTOR)	Multidisciplinary	Kaplan, S., Greenfield, s., Ware J. (1989) Assessing the Effects of Physician-Patient Interactions on the Outcomes of Chronic Disease, Medical Care, Advances in Health Status Assessment: Conference Proceedings , Vol. 27, No. 3, pp. S110-S127	N.G.
	Brunel Library (NCBI)	Medicine & Health	Huges (1983) Consultation length and outcome in two group general practices, Journal of the Royal College of General Practitioners ,3, pp 143-147	N.G.

	Brunel Library (SAGE Journal)	Multidisciplinary	Caccavo, A., Ley, A & Reid, F. (2000) What do General Practitioners Discuss with their Patients? Exploring the Relationship between Content of Medical Consultations and Treatment Decisions, Journal of Health Psychology, Vol 5(1) 87–97	N.G.
	Brunel Library (ScienceDirect)	Multidisciplinary	Taylor (2009) Paternalism, participation and partnership —The evolution of patient centeredness in the consultation, Journal of Patient education and counceling 74, pp. 150-155	N.G.
	Google Search	Report	Commonwealth Fund (2014) Mirror, Mirror On The Wall. How The Performance Of The U.S. Health Care System Compares Internationally. New York: The Commonwealth Fund, pp.1 -31.	N.G.
			Health & Social Care Information Centre (2013) Data on Written Complaints in the NHS 2012-13. National Statistics. Leeds: Health and Social Care Information Centre.	N.G.
			Health & Social Care Information Centre (2014) Data on Written Complaints in the NHS 2013-14. National Statistics. Leeds: Health and Social Care Information Centre..	N.G.
			Francis, R. (2013) Report Of The Mid Staffordshire NHS Foundation Trust Public Inquiry. Executive Summary, London: The Stationery Office, pp. 1—115	N.G.
			Keogh, B. (2013) Review Into The Quality Of Care And Treatment Provided By 14 Hospitals Trusts In England: Overview Report, NHS 16-Jul-2013, pp. 1—61	N.G.
			The Health Foundation. (2016). Funding constraints and workforce shortages jeopardising Five Year Forward View delivery, says Health Foundation | The Health Foundation. [online] Available at: http://www.health.org.uk/news/funding-constraints-and-workforce-shortages-jeopardising-five-year-forward-view-delivery-says [Accessed 11 Aug. 2016].	N.G.
		Website	Patients Opinion: Every Voice Matters (2011) In Their Words: What Patients Think About Our NHS. [Online] Available At: https://www.patientopinion.org.uk/resources/poreport2011.PDf [Accessed: 5 Dec 2013]	N.G.
		Newspaper	Campbell, D. & Meikle, J. (2011) £20bn NHS cuts are hitting patients, Guardian investigation reveals. The Guardian. [Online] Available at: http://www.theguardian.com/society/2011/oct/17/nhs-cuts-impact-on-patients-revealed [Accessed 23 Sep. 2014].	N.G.
			BBC News (2009) NHS communication failure 'rife'. [Online] Available at: http://news.bbc.co.uk/1/hi/health/8338746.stm [Accessed 16 Sep. 2014].	N.G.
			Triggle, N. (2013) Hospitals in England told to publish staffing levels. BBC News Health. [online] Available at: http://www.bbc.co.uk/news/health-24994016 [Accessed 23 Sep. 2014].	N.G.
			Smith, R. (2012). NHS staff 'overworked' survey finds. The Telegraph. [online] Available at: http://www.telegraph.co.uk/news/health/news/9155178/NHS-staff-overworked-survey-finds.html [Accessed 11 Aug. 2016].	N.G.
NHS Principles	Google Search	Government Report	Department of Health (2009) The NHS Constitution: The NHS belongs to us all. Department of Health. London, pp.1-16.	N.G.
Involvement in the NHS	Google Search	Government Report	Department of Health (1989) Working for patients . Department of Health, London.	N.G.
			House of Commons (2004) Fourth Report of Session 2007–08. Choice, Voice and Public Services. London: The Stationary Office Limited, pp. 1—78	N.G.
			Cabinet Office (2006) The UK Government's Approach to Public Service Reform. The Prime Minister's Strategy Unit. London: Public Service Reform team, pp.1—100.	N.G.
			House of Commons (2007) Sixth Report of Session 2007–08. User Involvement in Public Services. London: The Stationary Office Limited, pp. 1—37	N.G.
Approach to Involvement	Brunel Library (ScienceDirect)	Multidisciplinary	Thompson, A. (2007). The Meaning of Patient Involvement and Participationin Health Care Consultations: A Taxonomi. In: S. Collins, N. Britten, J. Ruusuori and A. Thompson, ed., Patient Participation in Health Care Consultations, 1st ed. London: The McGraw-Hill Companies.	N.G.
	Brunel Library (ASPA)	Multidisciplinary	Bovaird, T. (2007). Beyond Engagement and Participation: User and Community Coproduction of Public Services. *Public Administration Review*, 67(5), pp.846-860.	N.G.
	Google Search (King's Fund)	Government Report	Foot, C., Gilburt, H., Dunn, P., Jabbal, J., Seale, B., Goodrich, J., Buck, D. and Taylor, J. (2014). People in control of their own health and care. London: The Kings' Fund in association with the National Voices.	N.G.
	Google Search	Government Report	www.parliament.uk. (2016). House of Commons - Public Administration - Twelfth Report. [online] Available at: http://www.publications.parliament.uk/pa/cm200708/cmselect/cmpubadm/411/41105.htm [Accessed 14 Aug. 2016].	N.G.

			House of Commons (2008) Twelfth Report of Session 2007-08. From Citizen's Charter to Public Service Guarantees: Entitlements to Public Services: Government Response to the Committee. . London: The Stationary Office Limited, pp. 1—14	N.G.
			HM Government. (2006). Transformational Government - Enabled by technology. [online] Available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/228602/6970.pdf [Accessed 14 Aug. 2016].	N.G.
			Department of Health (1991) The Patient's Charter. Department of Health, London.	N.G.
		Report	National Institute for Health Research,. (2012) An evaluation of service user involvement in studies adopted by the Mental Health Research Network. London: NHS.	N.G.
		Report	NHS (2000) The NHS Plan, A Plan for Investment, A Plan for Reform. [online] Available at: http://1nj5ms2lli5hdggbe3mm7ms5.wpengine.netdna-cdn.com/files/2010/03/pnsuk1.pdf [Accessed 14 Aug. 2016].	N.G.
		Blog	Davey, N. (2010). The four challenges to achieving customer engagement. [online] Available at: http://www.mycustomer.com/experience/engagement/the-four-challenges-to-achieving-customer-engagement [Accessed 15 Aug. 2016].	N.G.
Examples of involvement	Google Search	Government Report	Department of Health (2001) The Expert Patient: A New Approach to Chronic Disease Management for the 21st Century. Department of Health, London.	N.G.
	Brunel Library (ScienceDirect)	Multidisciplinary	Vadiee, M. (2012) The UK "Expert Patient Program" and self-care in chronic disease management: An analysis. European Geriatric Medicine, 3(3), pp.201--205.	N.G.
	Google Search	Multidisciplinary	Leveaux, C., Patel, S., Culpan, J., Macey, M., Dize, C. and Camp, T. (2012). Safer passage: how care navigators help improve mental health services. Health Service Journal (HSJ). [online] Available at: http://www.hsj.co.uk/resource-centre/best-practice/local-integration-resources/safer-passage-how-care-navigators-help-improve-mental-health-services/5041420.article#.VBurHEu4mlI [Accessed 19 Sep. 2014].	N.G.
	Brunel Library (Cambridge Uni Press)	Multidisciplinary	Windle, K., Francis, J., Coomber, C. (2011) Preventing loneliness and social isolation: interventions and outcomes. Social Care Institute for Excellence, pp.1—16	N.G.

Appendix A2. Literature Review Chapter 9

Keyword Search	catalogue; database; search engine	Discipline; Type	Result of search #	# of citations
Planning	Google books	Multidisciplinary	Ridley, D. (2012) *The Literature review: A step-by-step guide for students*. 1st ed. London: Sage Publications.	367
	Social Science & Medicine	Medicine	Abelson, J., Forest, P. G., Eyles, J., Smith, P., Martin, E., & Gauvin, F. P. (2003). Deliberations about deliberative methods: issues in the design and evaluation of public participation processes. Social science & medicine, 57(2), 239-251.	18
	JSTOR	Participation	Crosby, N., Kelly, J. M., & Schaefer, P. (1986). Citizens panels: A new approach to citizen participation. Public Administration Review, 170-178.	433
	INVOLVE	Participation	Warburton, D., Wilson, R., & Rainbow, E. (2006). Making a difference: A guide to evaluating public participation in central government. London: Involve.	30
	Wiley Online Library	Participation	South, J., Fairfax, P. and Green, E. (2005) Developing an assessment tool for evaluating community involvement. Health Expectations, 8(1), pp.64-73.	27
	SAGE	Participation	Rowe, G., & Frewer, L. J. (2000) Public participation methods: A framework for evaluation. Science, technology & human values, 25(1), 3-29.	1873
	Elsevier	Participation	Väntänen, A., & Marttunen, M. (2005). Public involvement in multi-objective water level regulation development projects—evaluating the applicability of public involvement methods. Environmental Impact Assessment Review, 25(3), 281-304.	58
Implementation	Elsevier	Multidisciplinary	Kahraman, Z. (2010) Using User-Centred Design Approach In Course Design. Procedia-Social And Behavioural Sciences, 2(2), pp. 2071—2076.	5
	Google books	Multidisciplinary	Landry, C. (2006). The art of city-making. Routledge.	540
	Google search	Participation	Time-management-guide.com. (2002). What is planning and why you need to plan. [online] Available at: http://www.time-management-guide.com/planning.html [Accessed 26 Feb. 2017].	N.G.
	Barrons Business Review Series	Multidisciplinary	Montana, P. J., & Charnov, B. H. (1993). Management, Hauppauge. NY: Barrons Business Review Series.	20
	Google search	Participation	Bleiker, A., Bleiker, H (1995) Public Participation Handbook for Officials and Other Professionals Serving the Public. Ninth Edition. Institute for Participatory Management and Planning, Monterey, CA.	19
	SAGEpub	Participation	Alam, I. (2002). An Exploratory Investigation of User Involvement in New Service Development. Journal of Academy of Marketing Science 30 (3):250–61.	691
	Google search	Participation	DSE (2005) An introduction to engagement, Book 1: Effective engagement. Government of Victoria, Australia. http://www.dse.vic. gov.au/effective-engagement/resources/download-effective- engagement	173
	Google search	Participation	Guijt, I. (2014). Participatory Approaches: Methodological Briefs-Impact Evaluation No. 5 (No. innpub750).	3
	JSTOR	Participation	Crosby, N., Kelly, J. M., & Schaefer, P. (1986). Citizens panels: A new approach to citizen participation. Public Administration Review, 170-178.	433
	INVOLVE	Participation	Warburton, D., Wilson, R., & Rainbow, E. (2006). Making a difference: A guide to evaluating public participation in central government. London: Involve.	30
	Wiley Online Library	Participation	South, J., Fairfax, P. and Green, E. (2005) Developing an assessment tool for evaluating community involvement. Health Expectations, 8(1), pp.64-73.	27
	SAGEpub	Participation	Rowe, G., & Frewer, L. J. (2000) Public participation methods: A framework for evaluation. Science, technology & human values, 25(1), 3-29.	1873

	Google search	Participation	Beckley, T., Parkins, J., and Sheppard, S. (2005). *Public participation in sustainable forest management: A reference guide.* Edmonton, Alberta, Canada: Sustainable Forest Management Network.	54
	Elsevier	Participation	Väntänen, A., & Marttunen, M. (2005). Public involvement in multi-objective water level regulation development projects—evaluating the applicability of public involvement methods. Environmental Impact Assessment Review, 25(3), 281-304.	58
Output	Google search	Multidisciplinary	Fixsen, D. L., Naoom, S. F., Blase, K. A., & Friedman, R. M. (2005). Implementation research: a synthesis of the literature.	3444
	Wiley Online Library	Multidisciplinary	Bassu, K. (1997), On Misunderstanding Government: an Analysis of the Art of Policy Adviseî, Economics and Politics, Vol. 9, N 3.	29
	Google search	Participation	DSE (2005c) Effective engagement toolkit, Book 3. Govern- ment of Victoria, Australia. http://www.dse.vic.gov.au/effec- tive-engagement/resources/download-effective-engagement	N.G.
	Google books	Design	Martin, B. & Hanington, B. (2012). Universal methods of design. Beverly, MA: Rockport Publishers.	418
	Google books	Design	Kumar, V. (2013) 101 design methods. Hoboken, N.J.: Wiley.ar, 2013)	206
	SAGEpub	Design Tools	Gibbs, A. (1997) 'Focus Groups', Social Research Update, 19, Winter, Department of Sociology, University of Surrey. http://www.soc.surrey.ac.uk/sru/sru19.html	134
	Google books	Multidisciplinary	Ritchie, J. and Lewis, J. (2003) Qualitative research practice. London: Sage Publications.	752
	Google search	Design Tools	MediaLABamsterdam, (2012) *Design method toolkit Break up/Love letter*. [online] Medialabamsterdam.com. Available at: http://medialabamsterdam.com/toolkit/method-card/break-uplove-letter/ [Accessed 5 Oct. 2016]	N.G.
	Google search	Participation	National Institute for Health Research (2012). An evaluation of service user involvement in studies adopted by the Mental Health Research Network. London: NHS	18
	Google search	Environment	EPA, Environmental Protection Agency (2016). Public Participation Guide: Process Planning | International Cooperation | US EPA. [online] Epa.gov. Available at: https://www.epa.gov/international-cooperation/public-participation-guide-process-planning [Accessed 18 Feb. 2017].	N.G.
SWOT Analysis	Google Scholar	SWOT	Humphrey, A. (2005). SWOT analysis for management consulting. SRI alumni Newsletter, 1, 7-8.	195
	Google books	Multidisciplinary	Kerzner, H. R., & Saladis, F. P. (2010). Project management workbook and PMP/CAPM exam study guide. John Wiley & Sons.ner & Saladis, 2010).	13
	Google Schoolar (emeralinsight)	SWOT	Helms, M. M., & Nixon, J. (2010). Exploring SWOT analysis–where are we now? A review of academic research from the last decade. Journal of strategy and management, 3(3), 215-251.	285
	Google Scholar	SWOT	Bohn A. (2009) The SWOT Analysis. USA. GRIN Verlag	28
	Taylor & Francis	SWOT	Chermack, T. J., & Kasshanna, B. K. (2007). The use and misuse of SWOT analysis and implications for HRD professionals. Human Resource Development International, 10(4), 383-399.	100
	Google search	SWOT	Quincy, R., Lu, S., & Huang, C. C. (2012). SWOT analysis: Raising capacity of your organization. *Rutgers School of Social Work. Retrieved March, 20*, 2014.	10
	Google search	Multidisciplinary	Kessler, E. H. (Ed.). (2013). Encyclopedia of management theory. Sage Publications.	N.G.
	Google books	Multidisciplinary	Baker, P. (2008). *Using corpora in discourse analysis*. 1st ed. London: Continuum.	1084

Appendix B – Interviews

Appendix B1. Information Sheet and Consent Form for Interviews

RESEARCH PARTICIPANT INFORMATION SHEET

Study title

A Fieldwork study for learning people thoughts and feelings about the healthcare services provision

Invitation Paragraph

You have been invited to express your opinion, thoughts and knowledge about areas related to:

- The current estate of the NHS Service provision,
- Emotional responses to the service provision,
- Doctor-patient relationships and
- User involvement in service redesign.

What is the purpose of the study?

The purpose of this interview is to find data and use it for making big picture decisions regarding the most obvious directions off investigation to pursue for this research

Why have I been invited to participate?

Because we feel that experiences with the NHS you might remember, will provide valuable input into the process of determining the best course of action when selecting, preparing and implementing activities intending to engage with patients, doctors and any other interested stakeholders in cases of re-design of health services

Do I have to take part?

No – you are in your own right to not participate or withdraw from this study at any point while doing the interview. Regarding the data, you are allowed withdraw it as well before the first 3 weeks after the interview have concluded.

What will happen to me if I take part?

You will be asked 10 questions with some follow-up ones in an informal way and your answers will be used to develop ideas, mental models and be part of larger workshops to bring together those ideas and promote better outcomes to this research. In order to get the most benefit of this activity, each interview will last no longer than 25 minutes and it will be recorded to be used only by the interviewer 'Andres Cervantes"

What do I have to do?

Since the interviews will be informally realized, you will be asked to approach the Healthwatch offices in Pavilions Mall (Uxbridge) at any time you find convenient and not crossing with any of your other activities

What are the possible disadvantages and risks of taking part?

The only disadvantage in taking part in this interview might be as an emotional discomfort if questions about the emotional responses to the service provision and questions related to doctor-patient relationships trigger a bad memory you might have, although the researcher and it supervisors have review the questions several times to ensure that the risks have been minimised as much as possible.

What if something goes wrong?

The ethical research department has reviewed the questions in this interview to ensure that the risks have been minimized as much as possible, although if something goes wrong Brunel University provides a policy that will provide all the necessary help you need in case of a distress situation

Will my taking part in this study be kept confidential?

Yes – All the data will be anonymized and no personal questions will be asked, so that no individual is attributed to any particular view. The data will be aggregated and so it will be impossible to distinguish between participants. The data will be maintained in a password secure encrypted file in which the researcher will be the only one with access to it

What will happen to the results of the research study?

The results will be published and disseminated internally at Brunel University. Also, anonymized results will be published more widely as part of Conference and Journal papers

Who is organising and funding the research?

The researcher himself: Andres Felipe Cervantes

What are the indemnity arrangements?

Like mentioned before, Brunel University provides a policy that will provide all the necessary help you need in case of a distress situation happens.

Who has reviewed the study?

1st Supervisor: Prof. Joseph Giacomin
2nd Supervisor: Dr. Youngok Choi

Further questions?

If you would like to get some feedback or information about the outcomes of this study you can contact the researcher to be part of a list of people to which the researcher will send the results after the study has been completed. Find researcher details below:

- Andres Felipe Cervantes, PhD Researcher
- Department of Design, Michael Sterling, Room 358
- Brunel University, Uxbridge, UB8 3PH:
- Cervantes.andres@brunel.ac.uk

CONSENT FORM

Please tick the appropriate box

YES NO

1. Have you read the Research Participant Information Sheet for the fieldwork study for learning people thoughts and feelings about the healthcare services provision?...___ ___
2. Have you had an opportunity to ask questions and discuss this study? ....___ ___
3. Have you received satisfactory answers to all your questions? ....___ ___
4. Who have you spoken to? ANDRES CERVANTES
5. Do you understand that you will not be referred to by name in any report concerning this study?..___ ___
6. Do you understand that you are free to withdraw from the study:
   - At any time..___ ___
   - Without having to give a reason for withdrawing.......................................___ ___
7. I agree to my interview being recorded..___ ___
8. I agree to the use of non-attributable direct quotes when the study is written up or published. ....___ ___
9. Do you agree to take part in this study?..___ ___

Signature of Research Participant:

Date:

Name in capitals:

I am satisfied that the above-named has given informed consent.

Researcher name: ANDRES CERVANTES	

Appendix B2. Interview questions (Patients)

1. Can you please tell me what do you think the '*NHS in England'* duties to people are?

   Follow-up:
   - What *characteristics of the services* from the '*NHS in England'* do you consider to be more important? (E.g. waiting times, doctor availability, amount of time in an appointment). Could you please tell me why they are important to you?

2. What are your expectations when you are provided of a service from the '*NHS in England*'? (E.g. of services: waiting times, booking of appointments, be sited with your doctor, or receiving a treatment) (Expectations as what do you would like/want them to do?)

   Follow-up:
   - Do you think these expectations have been successfully fulfilled so far?

3. What kind of "*service dimensions"* do you consider it help you to evaluate if a health service that you are receiving or have received I the past is good or bad? (E.g. your doctor's language, the amount of time he or she spends with you, choices of treatment you are offered in case of an illness)

4. What kind of emotional or physical reactions do you think a person have when he or she believes that a health service has been delivered in a poorly manner?

5. Do you think that the emotions that arise from a patient and a healthcare professional interaction, have an impact on the way patients perceive the overall quality of the service that it is been provided? Could you please tell me the reasons for your answer? Could you please tell me the reasons for your answer?

6. Do you think that future interactions between patients and health professionals are influenced by previous emotional experiences with other health professionals? Could you please tell me the reasons for your answer?

7. Do you think that the current language between patients and health professionals are encouraging efficient, effective and professional lines of communication? (Language in terms of terminology, when referring to the type of illness and possible treatments you may have)

   Follow-up:
   - Can you tell me what kind of language do you think should be used by your doctor when explaining any affairs related to the management of your health?

8. Easily access to information has made patients more aware of their state of health. They are now more capable of describing their conditions, their needs and to actively participate in dialogs with healthcare professionals about procedures and treatments"?

   Follow-up:

   - Could you please tell me in what way do you think this access to information and knowledge has change the balance in the relationship between you and your doctors? Could you please tell me the reasons for your answer?

9. Have you ever been asked to participate in decisions regarding the development of better health services for the wellbeing or benefit of the community? If yes… Can you provide a small description of this?

   Follow-up:

   - Do you think that if more active involvement was given to the public about how health services should be design and delivered could help people to manage more effectively their conditions at times when specialized help is not available?

10. "Co-productive approaches", is a design method in where active participation of patients, doctors and any other interested stakeholders is pursued to design or re-design a service or product"

    Follow-up:

    - If you were asked to be part of a co-productive activity related to the redesign of health care services, could you list a few areas that you would like to give some opinions about?

Appendix B3. Interview questions (health service providers)

1. Can you tell me what do you think the '*NHS in England'* duties are to people?

   <u>Follow-up:</u>
   - What *areas of service* from the '*NHS in England'* do you consider to be more important? Can you tell me why they are important? (E.g. waiting times, doctor availability, amount of time in an appointment)
   - What *areas of service* from the '*NHS in England'* do you think patients consider to be more important? Can you tell me the reason for your answer? (E.g. waiting times, doctor availability, amount of time in an appointment)

2. What do you think are patients' expectation when they are provided of a service in the NHS? (E.g. of services: waiting times of services: booking an appointment, or sited with your doctor, or receiving a treatment)

3. Which kind of service indicators do you consider; help patients and their families to evaluate if a health service they are receiving or have received in the past is good or bad? (E.g. your doctors' language, the amount of time he or she spends with you, choices of treatment you are offered in case of an illness)

   <u>Follow up</u>
   - Which kind of service indicators do you consider it helps you to evaluate if a health service you are providing or have provided in the past is good or bad?

4. What kind of emotional or physical reactions do you think a person have when he or she believes that a health service has been delivered in a poorly manner?

5. Do you think that the emotions that arise between healthcare professionals and patients, influence how the overall quality of the healthcare service is perceived? Could you please tell me the reasons for your answer?

6. Do you think that future interactions between patients and health professionals are influenced by previous experiences with other health professionals? Could you please tell me the reasons for your answer?

7. Do you think that the current language between health professional and people encourages efficient, effective and professional lines of communication? Could you please tell me the reasons for your answer? (Language in terms of terminology, when referring to the type of illness and possible treatments you may have)

Follow-up:

- Can you tell me what kind of language do you think it could be used or should be used by health professionals, when explaining any health-related affair to patient?

8. "Easy access to information has made patients more aware of their state of health. They are now more capable of describing their conditions, their needs and to actively participate in dialogs with healthcare professionals about procedures and treatments"

   Follow-up:

   - Could you please tell me in what way do you think this access to information and knowledge has change the balance in the relationship between health professionals and patients?

9. Have you ever been asked to participate in decisions regarding the development of better health services for the wellbeing or benefit of the community? If yes… Can you provide a small description of this?

   Follow-up:

   - Do you think that if patients could be part of these activities could it help to design services, so people could be able to manage some of their conditions more effectively at times when specialized help is not available?
   - Do you think that patients would be willing to participate in this kind of activities?

10. "Health co-productive approaches", is a design method in where active participation of patients, health professionals and any other interested stakeholders is pursued to design or re-design a service or product"

    - If actively participates or have participated then…Could you please explain to me what sorts of areas of the service have you gave advice or you usually give advice about, when you have these activities?
    - If not then…If you were asked to be part of a co-productive activity related to the redesign of health care services, could you describe a few services or areas of the service that you would like your opinion to be considered?

Appendix C – Focus Groups

Appendix C1. Information Sheet and Consent Form for Focus Groups

RESEARCH PARTICIPANT INFORMATION SHEET

Study title

Comparison between various Co-design Tools

Invitation Paragraph

You have been invited to participate in an activity aiming to compare various tools known for encouraging people participation. In order to promote a fair comparison, each of these activities had been planned with the same topic in mind: The various experiences a person can have in a GP consultation.

Therefore, the following questions have been proposed to find about your experiences, opinions, emotions, thoughts and knowledge about those times you have been in a GP consultation.

What is the purpose of the study?

The purpose of this Focus Group is to find data that could identify some issues that the GP consultation might present and also some solutions to these issues.

Why have I been invited to participate?

Because we feel that those experiences with your GP that you might remember can provide valuable input into the process of determining the best course of action when selecting, preparing and implementing activities intending to engage with the general public in cases of health services re-design

Do I have to take part?

No – you are in your own right to not participate or withdraw from this study at any point while doing this activity. Regarding the data, you are also allowed to withdraw it before the first 3 weeks after the interview have concluded.

What will happen to me if I take part?

You will be asked some question in an informal way and your answers will be used to develop ideas, mental models and be part of larger workshops to bring together those ideas and promote better outcomes to this research. In order to get the most benefits from this activity, these ones will be recorded (via an audio file or through a web-based online tool) and used only by the researcher ‘Andres Cervantes”.

What do I have to do?

Since this activity requires your presence, you will be asked to approach the Healthwatch office in Pavilions Mall (Uxbridge).

What are the possible disadvantages and risks of taking part in these activities?

The only possible discomfort in participating to any of these activities might be a negative emotional reaction when answering questions about previous "doctor-patient" or "healthcare related" services experiences. Despite that this risk cannot be completely removed, the researcher and the supervisors have reviewed the questions multiple times to ensure that these fulfil predefined quality standards.

What if something goes wrong?

The ethical research department have also reviewed the questions in this activity to ensure that the risks have been minimized as much as possible, although if something goes wrong Brunel University has allocated a policy that will provide all the necessary help you need in case of a distress situation. In case that discomfort happens, this activity will stop immediately after you have acknowledged this to the researcher. In case of major setback, the researcher will be aware of the location of the first-aid kit and then he will proceed to call out for more professional help.

Will my taking part in this study be kept confidential?

Yes – All the data will be anonymized and no personal questions will be asked, so that no individual is attributed to any particular view. The data will be aggregated and so it will be impossible to distinguish between participants

What will happen to the results of the research study?

The results will be published and disseminated internally at Brunel University. Also, anonymised results will be published more widely as part of Conference and Journal papers

Who is organising and funding the research?

The researcher itself: Andres Felipe Cervantes

What are the indemnity arrangements?

Like mentioned before, Brunel University provides a policy that will provide all the necessary help you might need in case a distress situation happens.

Who has reviewed the study?

1st Supervisor: Professor Joseph Giacomin
2nd Supervisor: Doctor Youngok Choi

Further questions?

If you would like to get some feedback or information about the outcomes of this study you can contact the researcher to be part of a list of people to which the researcher will send the results after the study has been completed. Find researcher details below:

Andres Felipe Cervantes, PhD Researcher
Department of Design, Michael Sterling, Room 358
Brunel University, Uxbridge, UB8 3PH:
Cervantes.andres@brunel.ac.uk

CONSENT FORM

Please tick the appropriate box

YES NO

1. Have you read the Research Participant Information Sheet for the fieldwork study Comparison between various Co-design Tools?…………………....___ ___
2. Have you had an opportunity to ask questions and discuss this study? ……………___ ___
3. Have you received satisfactory answers to all your questions? ……………………___ ___
4. Who have you spoken to? ANDRES CERVANTES
5. Do you understand that you will not be referred to by name in any report concerning this study?...___ ___
6. Do you understand that you are free to withdraw from the study:
    - At any time...___ ___
    - Without having to give a reason for withdrawing..___ ___
7. I agree to my interview being recorded………………………………………………___ ___
8. I agree to the use of non-attributable direct quotes when the study is written up or published. ....___ ___
9. Do you agree to take part in this study?...___ ___

Signature of Research Participant:

Date:

Name in capitals:

I am satisfied that the above-named has given informed consent.

Researcher name: ANDRES CERVANTES

Appendix C2. Focus Groups Questions

Activity Introduction

Welcome

Thanks for agreeing to be part of this focus group. I appreciate your willingness to participate.

Introductions

My name is Andres Cervantes and I will be today's moderator

Purpose of focus groups

The reason why you all have been asked to come here is because I am doing an activity that involves selecting, preparing and deploying various Human-Centred Design tools within the same case study to then after an analysis, identify their strengths and weaknesses.

The selected case study for this activity is '*the effectiveness of patient-doctor communication and relationship during routine visits'*. Please keep in mind that you do not need to talk about anything that you consider might cause you discomfort but only that 'base on experiences thoughts' that might influence the topic in study

Ground rules

1. *We want you to do the talking* and I may call on you if I haven't heard from you in a while.
2. *There are no right or wrong answers*. Every person's experiences and opinions are important. Speak up whether you agree or disagree. We want to hear a wide range of opinions.
3. *What is said in this room stays here*. We want all of you to feel comfortable sharing when sensitive issues come up.
4. *We will be tape recording the group we want to capture everything you have to say*. We don't identify anyone by name in our report. You will remain anonymous.

Questions of the activity

Engagement Questions:

1. *Interviewer is going to ask to each of the participants* when was the last time you went for a GP consultation.

2. *Interviewer is going to ask to each of the participants* What words would you use to describe your overall experience in the GP consultation.

3. *Interviewer is going to ask to each of the participants* to think at least of 3 or more aspects to describe more in details their previous answers.

Exploration Questions:

4. As a group could you all discuss and agree which of those previously mentioned aspects can be negative or positive for the good development of patient-doctor communication and relationship during routine visit

5. As a group could you all discuss, agree and explain to me why you think those (negative) aspect are negative

6. As a group could you all discuss, agree and propose some potential solutions for those negative aspects that you all identified.

Final Question:

7. The participants will be asked if there are any thoughts or opinions about the GP consultation that were not mentioned already and they would like to share and discuss with the group.

Appendix D – Future Workshops / Rich pictures

Appendix D1. Information Sheet and Consent Form for Future Workshops / Rich pictures

RESEARCH PARTICIPANT INFORMATION SHEET

Study title

Comparison between various Co-design Tools

Invitation Paragraph

You have been invited to participate in an activity aiming to compare various tools known for encouraging people participation. In order to promote a fair comparison, each of these activities had been planned with the same topic in mind: The various experiences a person can have in a GP consultation.

Therefore, the following questions have been proposed to find about your experiences, opinions, emotions, thoughts and knowledge about those times you have been in a GP consultation.

What is the purpose of the study?

The purpose of this Future Workshops / Rich pictures is to find data that could identify some issues that the GP consultation might present and also some solutions to these issues.

Why have I been invited to participate?

Because we feel that those experiences with your GP that you might remember can provide valuable input into the process of determining the best course of action when selecting, preparing and implementing activities intending to engage with the general public in cases of health services re-design

Do I have to take part?

No – you are in your own right to not participate or withdraw from this study at any point while doing this activity. Regarding the data, you are also allowed to withdraw it before the first 3 weeks after the interview have concluded.

What will happen to me if I take part?

You will be asked some question in an informal way and your answers will be used to develop ideas, mental models and be part of larger workshops to bring together those ideas and promote better outcomes to this research. In order to get the most benefits from this activity, these ones will be recorded (via an audio file or through a web-based online tool) and used only by the researcher ‘Andres Cervantes”.

What do I have to do?

Since this activity requires your presence, you will be asked to approach the Healthwatch office in Pavilions Mall (Uxbridge).

What are the possible disadvantages and risks of taking part in these activities?

The only possible discomfort in participating to any of these activities might be a negative emotional reaction when answering questions about previous "doctor-patient" or "healthcare related" services experiences. Despite that this risk cannot be completely removed, the researcher and the supervisors have reviewed the questions multiple times to ensure that these fulfil predefined quality standards.

What if something goes wrong?

The ethical research department have also reviewed the questions in this activity to ensure that the risks have been minimized as much as possible, although if something goes wrong Brunel University has allocated a policy that will provide all the necessary help you need in case of a distress situation. In case that discomfort happens, this activity will stop immediately after you have acknowledged this to the researcher. In case of major setback, the researcher will be aware of the location of the first-aid kit and then he will proceed to call out for more professional help.

Will my taking part in this study be kept confidential?

Yes – All the data will be anonymized and no personal questions will be asked, so that no individual is attributed to any particular view. The data will be aggregated and so it will be impossible to distinguish between participants

What will happen to the results of the research study?

The results will be published and disseminated internally at Brunel University. Also, anonymised results will be published more widely as part of Conference and Journal papers

Who is organising and funding the research?

The researcher itself: Andres Felipe Cervantes

What are the indemnity arrangements?

Like mentioned before, Brunel University provides a policy that will provide all the necessary help you might need in case a distress situation happens.

Who has reviewed the study?

1st Supervisor: Professor Joseph Giacomin
2nd Supervisor: Doctor Youngok Choi

Further questions?

If you would like to get some feedback or information about the outcomes of this study you can contact the researcher to be part of a list of people to which the researcher will send the results after the study has been completed. Find researcher details below:

Andres Felipe Cervantes, PhD Researcher
Department of Design, Michael Sterling, Room 358
Brunel University, Uxbridge, UB8 3PH:
Cervantes.andres@brunel.ac.uk

CONSENT FORM

Please tick the appropriate box

YES NO

1. Have you read the Research Participant Information Sheet for the fieldwork study Comparison between various Co-design Tools?………………….....___ ___
2. Have you had an opportunity to ask questions and discuss this study? ……………___ ___
3. Have you received satisfactory answers to all your questions? ……………………___ ___
4. Who have you spoken to? ANDRES CERVANTES
5. Do you understand that you will not be referred to by name in any report concerning this study?..___ ___
6. Do you understand that you are free to withdraw from the study:
    - At any time..___ ___
    - Without having to give a reason for withdrawing.......................................___ ___
7. I agree to my interview being recorded……………………………………………___ ___
8. I agree to the use of non-attributable direct quotes when the study is written up or published. ....___ ___
9. Do you agree to take part in this study?..___ ___

Signature of Research Participant:

Date:

Name in capitals:

I am satisfied that the above-named has given informed consent.

Researcher name: ANDRES CERVANTES

Appendix D2. Future Workshops / Rich pictures Questions

Activity Introduction

The reason why you have been asked to come here is because I am doing an activity that involves selecting, preparing and deploying various Human-Centred Design tools within the same case study to then after an analysis, identify those differences in the results

The selected case study for this activity is '*the effectiveness of patient-doctor communication and relationship during routine visits'*. Please keep in mind that you do not need to talk about anything that you consider might cause you discomfort but only that 'base on experiences thoughts' that might influence the topic in study

Instructional steps:

1. This activity has been set to be developed in group.

2. For this activity, you will be given stationary material that I hope you might find useful during the activity.

3. What I want all of you to do as a group is to produce a step-by-step guide (i.e. blueprint) of all the steps/actions/stages that you think happen in a GP consultation from the moment you go into the consultation room to the moment you step out the room.
    a. For this purpose, you will also be given some laminated action that are believed it happen in a general practice consultation for you to organise in the order you consider more adequate. If you all agree that there are any unnecessary steps or instead, there are missing steps I invite you to remove or add them into the blue print (For this part you will be given 20 minutes).

4. Once you have finish creating this scenario, what I would like all of you to do is to identify those areas/circumstances/events you think affect the communication and relationship with a GP (For this part you will be given 20 minutes).

5. The next step is for all of you to discuss and agree some possible solutions you might think could help to improve the identified issues. (In this stage keep in mind that there is no good or bad and that any solution as 'unlikely to happen' is welcomed and should be discussed) (For this part you will be given 15 minutes).

6. Finally, I would like for all of you to choose one person to explain to me the blueprint, the identified issues and proposed solutions.

Appendix E – Love & Break-up Letters

Appendix E1. Information Sheet and Consent Form for Love & Break-up Letters

Brunel University London

RESEARCH PARTICIPANT INFORMATION SHEET (Online)

Screen 1:

Write to your GP consultation experiences a LOVE or BREAK UP letter!

It seems fair to say that at least once in our lives we have had the need to write a love or breakup letter to someone. In a very basic level, service-consumer relationships are similar to these personal relationships we have with the people in our lives.

This research focuses on finding about the positive or negative aspects of your experience with the GP consultation (i.e. from the moment you enter to a consultation room to see your doctor, to the end of this interaction).

This survey will ask you to write either a Love letter, if you are satisfied and happy with the service provided, or a Break-Up letter, if instead you feel the need of complaining about the whole experience or certain aspects. In other words, what is and what isn't working in your "relationship"? And how could these issues be improved so that your love last forever?

The survey may not take longer than 5 to 10 minutes. Your answers will remain anonymously and will be saved securely in a protected data server. Your participation is completely voluntary. If you have any questions about the study, please email the organiser at andres.cervantes@brunel.ac.uk.

This study has been approved by: The College of Engineering, Design and Physical Sciences Research Ethics Committee.

CONSENT FORM

Screen 2:

Thank you for deciding on taking part to this survey and contributing to this research

Before getting started could you please answer the following demographic questions that best apply to you:

1. **Are you male or female?**
   ☐ Female
   ☐ Male

2. **What is your age range?**
   ☐ 18-29
   ☐ 30-39
   ☐ 40-49
   ☐ 50-64
   ☐ 65+

3. **When was the last time you went for a GP consultation?**
   ☐ More Than 4 Months
   ☐ In The Past 2 Months
   ☐ In The Past Month
   ☐ Less than a Month

4. **Are you answering to this survey on behalf of any third individual**
   ☐ Yes
   ☐ No

5. **Do you agree to the use of non-attributable direct quotes when the study is written up or published?**
   ☐ Yes
   ☐ No

6. **Please select "I agree" if you would like to take part in this study and for all the information provided in here to be used by the researchers as long as it remains anonymous. Otherwise, if you do not agree" please close this window at any time.**
   ☐ I Agree
   ☐ Leave the Page

Appendix E2. Love & Break-up Letters Questions

Screen 3:

Love letter example:

Dear doctor,
I absolutely love the way you patiently listen to my problems and how kindly you try to explain me what to do. Whenever I feel a bit sick I am not worried, because I know that you will be there ready to help me.

Break Up letter example:

Dear waiting time,
I am sorry to say this but I think this relationship cannot go any longer. I thought I could handle the situation and pretend that this is not a big deal, but unfortunately I can't. I wish you were more open to what I have to say and allow me to ask you as many questions as I want but you usually seems to be in a hurry and not wanting to spend the time I feel I deserve...We need to break up.

Q1. I am going to write a:

Love letter ☐
Break Up letter ☐

Q2. Please write a Love or Break up letter of at least 100 words to express your feelings towards the doctor – patients' consultation experience. The letter can be as lengthy as you prefer and exploring in details the aspects you would like to bring to our attention.

Q3. Please provide your email address in case further contact is required.

Thank you for your participation!!

Appendix F – Crowdsourcing

Appendix F1. Information Sheet and Consent Form for Crowdsourcing

RESEARCH PARTICIPANT INFORMATION SHEET (Online)

Screen 1:

The power of the crowds!

Crowdsourcing is a business model that obtains service needs, ideas and content by asking contributions to large groups of people and especially online communities. This singular way of customer involvement connects the efforts of numerous volunteers to achieve a cumulative result from a proposed challenge.

This research challenge will focus first, on finding about those negative aspects of your experience with the GP consultation (i.e. from the moment you enter to a consultation room to see your doctor, to the end of this interaction).

This survey will ask you to write a little description of the problem/s that you consider affect a good experience in a GP consultation and then provide idea/s on how could these issues be improved. Then, after a careful review, some of these ideas will be rated and selected by those participants whiling to continue participate in this activity

The survey may not take longer than 5 to 10 minutes. Your answers will remain anonymously and will be saved securely in a protected data server. Your participation is completely voluntary. If you have any questions about the study, please email the organiser at andres.cervantes@brunel.ac.uk.

This study has been approved by: The College of Engineering, Design and Physical Sciences Research Ethics Committee.

CONSENT FORM

Screen 2:

Thank you for deciding on taking part to this survey and contributing to this research

Before getting started could you please answer the following demographic questions that best apply to you:

1. **Are you male or female?**
   ☐ Female
   ☐ Male

2. **What is your age range?**
   ☐ 18-29
   ☐ 30-39
   ☐ 40-49
   ☐ 50-64
   ☐ 65+

3. **When was the last time you went for a GP consultation?**
   ☐ More Than 4 Months
   ☐ In The Past 2 Months
   ☐ In The Past Month
   ☐ Less than a Month

4. **Are you answering to this survey on behalf of any third individual?**
   ☐ Yes
   ☐ No

5. **Do you agree to the use of non-attributable direct quotes when the study is written up or published?**
   ☐ Yes
   ☐ No

6. **Please select “I agree” if you would like to take part in this study and for all the information provided in here to be used by the researchers as long as it remains anonymous. Otherwise, if you do not agree” please close this window at any time.**
   ☐ I Agree
   ☐ Leave the Page

Appendix F2. Crowdsourcing Questions

Screen 3:

1. Consider the following list of typical procedures (or steps) that occur during a GP consultation. Think of the consultations with your GP and rate each of these procedures according to your own experiences with them from 1(very poor) to 5 (very good)

	Very poor	Poor	Acceptable	Good	Very Good
Trying to establish a relationship with you (Welcoming, Engagement, channels of communication)					
Attempting to discover the reason(s) why you are there					
Considering your previous history and examinations					
Considering other problems (this can include continuing problems or other risk factors)					
Achieve a shared understanding (provide all necessary information of the illness(es))					
Offer treatment or treatment options if possible (involve the patient in management)					
If the treatment doesn't work the provide options for further investigation (referrals)					
Use time and resources appropriately					
Maintain a relationship					

Other (Please specify)

2. Could you please give a small description of those areas that you selected as very poor (1) or poor (2)? (You do not have to use all the following boxes, but just accordingly to the number of identified issues)

Issue 1

Issue 2

Issue 3

Issue 4

Issue 5

3. If you have identified more issues than the number of boxes provided in the previous question, please use this space to complete your answers.

4. From the list of problems, you gave before, could you please think and mention one or more ways in which they could be solved? And could you please provide a little description of that solution?

For Issue 1

For Issue 2

For Issue 3

For Issue 4

For Issue 5

5. On a scale of 1-5 thumbs up (5 been very good) how would you rate your overall experience with the GP surgery you are registered in?

1=Very Bad 2=Bad 3=Fair 4=Good 5=Very Good

Appendix G – Instructions on how to do thematic Analysis

Appendix G1. Information Sheet and Consent Form for the thematic Analysis

RESEARCH PARTICIPANT INFORMATION SHEET

Activity title

Instructions on how to do Thematic Analysis

Invitation Paragraph

You have been invited to participate in an activity aiming to analyse the information gathered from an activity aiming to identify: The various experiences a person can have in a GP consultation.

Do I have to take part?

No – you are in your own right to not participate or withdraw from this activity at any point while doing this activity. Regarding the data, you are also allowed to withdraw it before the first 3 weeks after the interview have concluded.

What will happen to me if I take part?

You will be asked to perform a thematic analysis in order to organise and synthesise into ideas, the various information gathered from several different activities.

What do I have to do?

Follow the instructions that will be provided to you by the researcher

Will my taking part in this study be kept confidential?

Yes – All the analysis will be anonymized and no personal details will be asked, so that no individual is attributed to any particular view. The data will be aggregated and so it will be impossible to distinguish between participants

What will happen to the results of the research study?

The results will be published and disseminated internally at Brunel University. Also, anonymised results will be published more widely as part of Conference and Journal papers

Who is organising and funding the research?

The researcher itself: Andres Felipe Cervantes

Who has reviewed the Analysis?

1st Supervisor: Professor Joseph Giacomin
2nd Supervisor: Doctor Youngok Choi

Further questions?

If you would like to get some feedback or information about the outcomes of this study you can contact the researcher to be part of a list of people to which the researcher will send the results after the study has been completed. Find researcher details below:

Andres Felipe Cervantes, PhD Researcher
Department of Design, Michael Sterling, Room 358
Brunel University, Uxbridge, UB8 3PH:
Cervantes.andres@brunel.ac.uk

CONSENT FORM

Please tick the appropriate box

YES NO

Have you read the Research Participant Information Sheet for the required thematic analysis?…………………………………………………..... ___ ___

2. Have you had an opportunity to ask questions and discuss this study? …………… ___ ___
3. Have you received satisfactory answers to all your questions? …………………… ___ ___
4. Who have you spoken to? ANDRES CERVANTES
5. Do you understand that you will not be referred to by name in any report concerning this study?... ___ ___
6. Do you understand that you are free to withdraw from the study:
    - At any time.. ___ ___
    - Without having to give a reason for withdrawing...................................... ___ ___
7. I agree to the use of non-attributable direct quotes when the study is written up or published. .... ___ ___
8. Do you agree to take part in this analysis?... ___ ___

Signature of Research Participant:

Date:

Name in capitals:

I am satisfied that the above-named has given informed consent.

Researcher name: ANDRES CERVANTES

Appendix G2. Instructions

Please follow the instructions stated bellow to perform the requested analysis.

What is coding

Coding is a way of attaching names or ideas represented by names to pieces of text in a transcript. In coding, the idea is to go through the text and find where those ideas repeat.

- There can be as many names (codes) as you want
- You do not need to count the number of times a piece of information repeats
- A code can be conformed of several lines of text
- A piece of text can mean/contain various codes
- A code can repeat in several pieces of text

Steps for coding

9. Read and familiarize yourself with the data,
10. Highlight those pieces of text that you think mean/represent something
11. Write ‘name/label/code’ to help you to remember what is that piece of text talking about
12. Keep those names/labels on a side
13. If the information repeats group it in those names that you have already created.
14. If the information does not repeat create a new name for that piece of text.