

The use and acceptance of the Omaha technology in home-based healthcare: the case of Buurtzorg in China and the Netherlands

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1. Introduction

Population ageing is one of the most distinct trends of the 21st century. With one in nine persons in the world aged 60 years or over, predicted to increase to one in five by 2050, population ageing is a trend that cannot be ignored (United Nations Population Fund and International Helpage, 2012). Particularly, the Chinese population is aging faster than in almost all other populations. This is a result of China's 36-year one-child policy, combined with improvements in health care which have contributed to increases in life expectancy and decreases in China's birth rate (China Power, 2017). On one hand, population ageing is one of humanity's greatest performances. Due to, among others, improved health care, education and economic well-being, the life expectancy continues to increase. On the other hand, population ageing causes social, economic and cultural challenges to the global society (Getzen, 1992). Therefore, it is important to make use of existing opportunities to face the challenge of population ageing. With the increase of the number of elderly people, the demand for care consequently increases as well. It is well known that elderly people consume more healthcare per person than their young counterparts (Schumacher, 2017) (Getzen, 1992). As older people continue to live at home longer, good home-based care is very important. One of the existing opportunities to face this issue, is the use of technology in home-based health care. Examples of technology in home-based health care are telemedicine, domotics, sensors, eHealth, information and communication technology, and robotics (Peeters, Wiegiers, de Bie, & Friele, 2013). The application of technology in home-based health care is seen as one of the solutions to meet the growing need for health care, combined with a decrease in the number of health care workers, in the future (Peeters, Wiegiers, de Bie, & Friele, 2013).

However, these technologies only provide a solution if they are accepted by both the clients and the health professionals (Peeters, Wiegiers, de Bie, & Friele, 2013). The use and acceptance of technology in health care settings have been well studied (Beldad & Hegner, 2017) (Holden & Karsh, 2010) (Ketikidis, Dimitrovski, Lazuras, & Bath, 2012). An organization that has already been profiling itself with good quality home-based care and the use of technology in the Netherlands, is the company '*Buurtzorg*', which is literally translated as '*neighbourhood care*'. Buurtzorg is a progressive healthcare organisation with a nurse-led model of holistic care that revolutionised community care in the Netherlands (Buurtzorg, 2018). The nurses who work for Buurtzorg use the Omaha technology. As all parties in the healthcare domain must work together, it is important that they professionalise their work. The Omaha system facilitates communication between different parties by using a common terminology and classification by

terminology standardisation (Stichting Omaha System Support, 2018). The Omaha classifications facilitate among others: a holistic approach (client care from a holistic perspective, not just physiological aspects), the whole care process (assessment, interventions and outcomes), patient self-management and patient empowerment (Buurtzorg, 2018). Meanwhile, this progressive healthcare organisation exists not only in the Netherlands, but also in China (Kiers, 2015).

Although a lot is already known about the use and acceptance of technology in health care settings in many western countries, there are gaps in the research literature reporting that there is little information about technology acceptance among Chinese health professionals. More evidence-based knowledge is needed to know how and if these professionals accept new technologies, as technology acceptance can be significantly affected by cultural differences. China is a developing country which is experiencing enormous technological growth, but little is known about the factors that play an important role in the acceptance of these new technologies (NRC Opinie, 2017). For a company such as Buurtzorg, it would be very interesting to learn more about the technology acceptance in China, as they want to market their company with the associated Omaha technology in a successful way. Besides, there is also little to none information available about the acceptance of health professionals of the Omaha technology in particular. Therefore, it is very important for Buurtzorg (or other companies that use the Omaha technology) to know which variables play a role by health professionals' intention to use a technology and what factors actually play a role in the acceptance of the Omaha system. Therefore, in this study, an exploratory research will be conducted into the use of this specific technology in China, as Buurtzorg is now on the rise there. Furthermore, a comparison between the use of the Omaha technology by nurses from Buurtzorg in China and the Netherlands, will be made in this research. Therefore, this research question is formulated for this pilot study:

How do Buurtzorg professionals in ageing China and the Netherlands differ in their use and acceptance of the Omaha technology?

This empirical pilot study aims to make a valuable contribution to the existing literature in three different ways. Firstly, the theory section provides more information about the concepts that determine the intention to use and acceptance of technologies by health professionals. Secondly, the survey provides an increase of understanding about the factors that influence the intention

to use and the general acceptance of the Omaha technology by health professionals of Buurtzorg in China and the Netherlands. Finally, this pilot study will form a basis for further research in the coming year.

In order to answer the main question, several subquestions are formulated to guide the underlining theory:

1. *What is the context of ageing in China and the Netherlands?*
2. *In which way can home-based care offer a solution to the challenges of ageing in China and the Netherlands?*
3. *How do health professionals view their acceptance and use of technology in health care settings and which factors influence their intention?*
4. *What are the differences in the acceptance and use of technology by Chinese and Dutch health professionals?*

The structure of the thesis is as follows. This thesis first outlines some background information about Buurtzorg, the Omaha system and the role and acceptance of technology in health care settings. Second, based on the mini-review, an overview of the already known theory of technology acceptance models is made, and this leads to an adapted technology acceptance model that forms the fundament for the developed pilot survey. Third, the selected case, the data collection, the operationalization of the different concepts, and the steps of the statistical analysis are described in de method section. Besides the pilot survey, two interviews are conducted to gain more background information about the Omaha system and Buurtzorg, and to answer subquestions 2 and 3. Fourth, the survey and the interview results are analysed and this analysis is used to answer the formulated hypotheses. This thesis ends with a conclusion.

2. Theory

In order to study the use and acceptance of the Omaha technology by nurses at Buurtzorg in the Netherlands and in China, it is important to make use of current research-based knowledge. Therefore, in this chapter theoretical insights are given about the challenges of ageing and the solution that home-based care can offer in China and the Netherlands (subquestion 1 and 2). In addition to this, a technology acceptance model is discussed and adapted for specifically use in health care settings (subquestion 3 and 4).

2.1 The challenge of ageing in China and the Netherlands

As mentioned in the introduction, the Chinese population is aging fast. The strong influence of the government fertility policy, announced in 1979, and its implications on the challenge of ageing in China implies that fewer children are being born who can care for these elderly (Cen & Powell, 2012). It is interesting to study this issue in two very different contexts.

Table 1 Estimation of the percentage elderly in the Netherlands and China in 2017 and 2050 (Dehua, 2018) (Ouderenfonds, 2018)

	2017	Number of elderly (65 + in the Netherlands and 60+ in China)	Percentage elderly in 2017
Dutch population	17 000 000	3 100 000	18%
Chinese population	1 390 000 000	241 000 000	17%
	2050	Number of elderly (65+ in the Netherlands and 60+ in China)	Percentage elderly in 2050
Dutch population	17 600 000	3 840 000	22%
Chinese population	1 350 000 000	487 000 000	36%

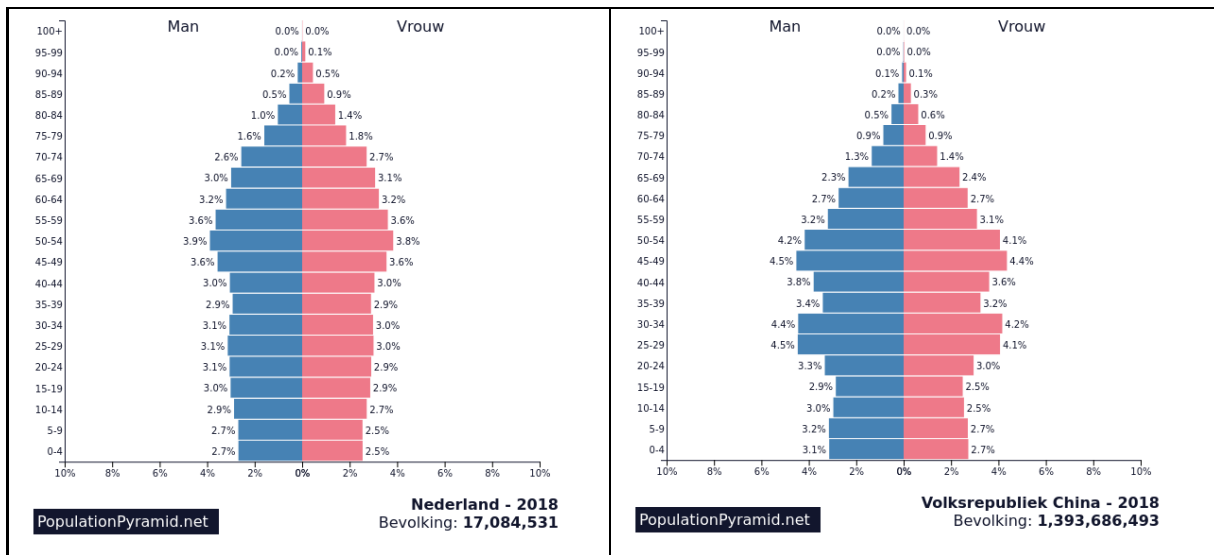


Figure 1 Population pyramid of the Netherlands and China in 2018 (Population Pyramid, 2018)

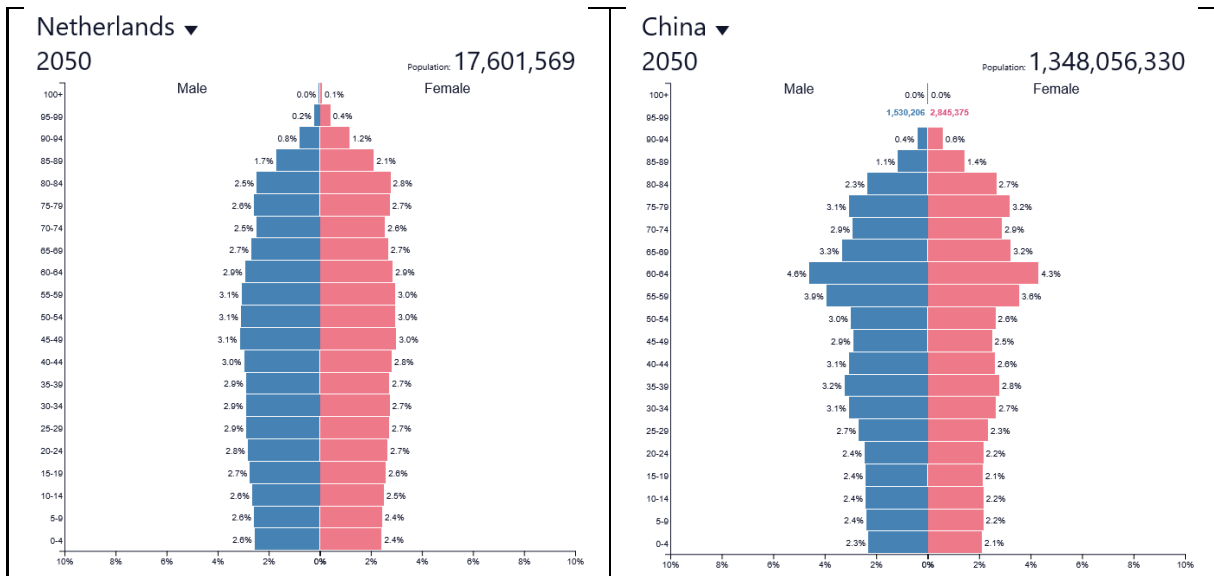


Figure 2 Population pyramid of the Netherlands and China in 2050 (Population Pyramid, 2018)

As shown in figure 1, the birth rates in China fluctuated largely over the years. As mentioned in the previous section, in 1979, the one-child policy was adopted, as visible in the small amount of 35-44-year-old, even though many exceptions were applied quite quickly (25-34 years old). In more recent years, the birth rate remains low, and becomes skewed, as many female foetuses are aborted (Population Pyramid, 2018). Ageing in the Netherlands has a different context. In the Netherlands, the so-called 'babyboom generation' (the large number of births directly after World War II) will retire in the coming years (Population Pyramid, 2018). As shown in Table 1, Figure 1, and 2, both the Dutch population and Chinese population will face the issue of ageing, and this issue will increase the following years. According to the CBS (Central Office for Statistics in the Netherlands) population forecasting, the number of people over the age of

65 will increase (Schumacher J. , 2017) (Pons, 2017). With the increase of the number of elderly people, the demand for care is increasing as well. It is well known that elderly people consume more healthcare per person than their young counterparts (Getzen, 1992). As a result, the care volume increases about 4 percent per year. It is expected that in 2030, 38% of people living in the Netherlands and older than 75 years, will have more than three disorders (Schumacher J. , 2017). Furthermore, a significant portion of the Dutch population is chronically ill, putting additional pressure on future healthcare (Nu.nl, 2014). Besides, nowadays elderly people stay at home longer and only go to a nursing home when living at home is no longer an option. In the Netherlands, home-based care is an umbrella term for all possible care that is delivered at people's homes (e.g. district nursing, family care, maternity care, care for the elderly and care for chronically ill and handicapped people) (Florence Nightingale Instituut, 2018).

Due to the government fertility policy, families in China are getting smaller and smaller and this system is not sustainable anymore. To deliver social services in the community setting of modern China, the government launched several initiatives to create community groups, e.g. volunteerism and community participation projects (Xu & Chow, 2011). The concept of '*traditional care*' is rooted in the Confucianism. This is a Chinese religion/ philosophy of life that is based on the teachings of Confucius (551-479 BC). This system has a great influence on the history and culture of China. According to Confucius, parental devotion, ancestor worship and care for older family members are a family duty. Care of the elderly traditionally has been provided at home by the husband or wife, children, in-laws (for example, daughters-in-law) and distant family members (Xu & Chow, 2011). A Chinese saying gives a good description of the situation: "*Having a son makes one's old age secure*". In the Chinese care concept, turning to nursing homes and other institutional care is really seen as a '*last resort*'. Nowadays, family responsibility for the elderly is also a cultural and legal norm in various Chinese laws and policies (e.g. the PRC Elderly Rights and Protection law, 1996) (Xu & Chow, 2011). And the government has begun to explore the community-based service delivery model.

Until the end of the 19th century, in the Netherlands, home care was also provided by family members, Catholic sisters and Protestant deaconesses (Florence Nightingale Instituut, 2018). From this century on, a network of regional cross organisations was established to train district nurses so they can deliver care at home. Since then, home-based healthcare has continually adapted to the changing demand from society (Florence Nightingale Instituut, 2018). Nowadays, the cross organisations have merged into larger organizations. The duties of the

district nurse are divided between nurses, nursing care providers, home care assistant's, managers etcetera. Now the context of ageing in China and the Netherlands has been studied (subquestion 1), the following section describes in which way home-based care can offer a solution to the challenges of ageing in both countries (subquestion 2).

2.2 Home-based care as a solution for ageing

Now that an image is sketched of the situation concerning ageing and home care in China and the Netherlands, home-based care in both countries can be described in more detail. In 2006 the first Buurtzorg team started in the Netherlands (Schouten, 2017). The founder of Buurtzorg, Jos de Blok, is now director of the largest home-based healthcare provider in the Netherlands. The concept of Buurtzorg consists of the use of community or neighbourhood-based generalist working nurses, who provide home care to independently living clients, in collaboration with the local general practitioner. With this concept, the initiators and employees want to reduce fragmentation in home-based health care by ensuring that there are "*less different hands on the bed*" and to strengthen the collaboration with the general practitioner (de Veer, Brandt, Schellevis, & Francke, 2008). Buurtzorg is a familiar way of carrying out home-based healthcare, as it reminds of the old cross organizations, with the district nurse as the central person (de Veer, Brandt, Schellevis, & Francke, 2008). The organizational structure of Buurtzorg is simple and flat, with fewer levels of hierarchy and lower overhead costs, a way in which Buurtzorg distinguishes itself from other health care providers. In Buurtzorg managers are not necessary, nurse teams (10-12 nurses for the home care of 50 to 60 clients in a given neighbourhood) are self-governing (Brouwer, 2017). There are no middle management layers, there is no departmentalisation and there is a minimum of back-office, employee and controlling functions (Kaloudis, 2016). This means that Buurtzorg nurse teams arrange the planning of their clients, the work schedule, the holiday schedule and the complete administration by themselves. Due to this organizational structure, Buurtzorg appears to provide high-quality home-based health care at lower cost than other competing organizations, and is therefore a good solution to the expensive global ageing problem (Gray, Sarnak, & Burgers, 2015).

Meanwhile, in China, the enormous growth of the manufacturing sector has forced millions of inhabitants to move to larger cities and leave their families behind. This development, combined with the government fertility policy, weakened the traditional family caregiving system. Therefore, the government is supporting several models for care institutions (e.g. state-built and privately managed institutions). As a result, this care sector has experienced tremendous growth

(Cen & Powell, 2012). In addition, the Chinese government is experimenting with long-term care policies, as vulnerable older people without sufficient financial resources and family supports need long-term care (Lu, Liu, & Yang, 2016). One of these long-term care options for elderly care is community-based home care (subquestion 2). In this model, family members remain the primary caregivers, but the community-based home care supports them with supplemental care and other needed help that for instance working children or children living far away cannot provide (Xu & Chow, 2011). As the home care sector is a very new market in China, many organizations emerge given the evident commercial possibilities; the Dutch organization Buurtzorg being one of them. However, a clear difference is that Buurtzorg in China is organized in a more hierarchical way than its Dutch counterpart (Alscher, 2017).

2.3 Technology acceptance model

In order to answer subquestion 3: “*How do health professionals view their acceptance and use of technology in health care settings and which factors influence their intention?*”, it is important to know which factors influence the use and acceptance of technology of health professionals. Therefore, different technology acceptance models are examined in this chapter. One of these models is selected and adapted for specific use in health care settings, in order to study the use and acceptance of the Omaha technology by Dutch and Chinese health professionals.

2.3.1 Different technology acceptance models

There are different models that can be used when examining technology acceptance. Of all theories, Davis’ ‘*technology acceptance model*’ (TAM) is considered to be the most influential and commonly employed model for describing an individual’s acceptance of information systems (Lee, Kozar, & Larsen, 2003) (Davis F., 1989). Other models (for example Protection Motivation Theory (PMT), Information System Success Model, and Unified Theory of Acceptance and Use of Technology (UTAUT)) are also used during the literature review. Briefly explained, these models include the following. The PMT is a model which is used to predict the influence of developed health education interventions on health behaviour (Boer & Seydel, 1996). The Information System Success Model of DeLone and McLean is a model that can be used to measure the complex-dependent variable in information systems research (DeLone & McLean, 1992). And UTAUT aims to explain user intentions to use an information system and subsequent usage behaviour (Venkatesh, Morris, Davis, & Davis, 2003). It is worthwhile to note that all these models are regarded as valid and robust. Particularly the TAM

model has been observed to produce good predictions for explaining the behaviour of an individual in the context of accepting a new technology (Lee, Yoon, & Lee, 2009) (King & He, 2006). Therefore, in order to study the use and acceptance of the Omaha technology by health professionals of Buurtzorg, this model is chosen for this study. Davis' work led to a stream of research on technology acceptance by professionals (P. Ketikidis, 2012). TAM is based on the expression of human behaviour, as different aspects of human behaviour could be used to understand issues of technology acceptance better (P. Ketikidis, 2012). TAM has been applied to different technologies, different situations, control factors, and subjects (Lee, Kozar, & Larsen, 2003). Researchers also investigated whether TAM instruments were vigorous, consistent, trustworthy, and valid, and they concluded TAM possesses these properties (Lee, Kozar, & Larsen, 2003). After the TAM validation period, researchers began to extend the model by introducing new variables to investigate relationships between concepts, and to identify TAM's boundary conditions (Chin & Gopal, 1995). TAM assumes that a number of concepts influence users' decisions about how and when they will use the specific technology. For this research it is important to know which factors determine the use and acceptance of the Omaha system by health professionals of Buurtzorg in China and the Netherlands. Based on literature, the most important factors (concepts) to health professionals are selected and used to design an own technology acceptance model. This model will be further explained in the section below.

2.3.2 TAM concepts that influence the technology acceptance by health professionals

This section describes, based on literature, the TAM concepts that influence the technology acceptance by health professionals. The original TAM model is presented below in Figure 3.

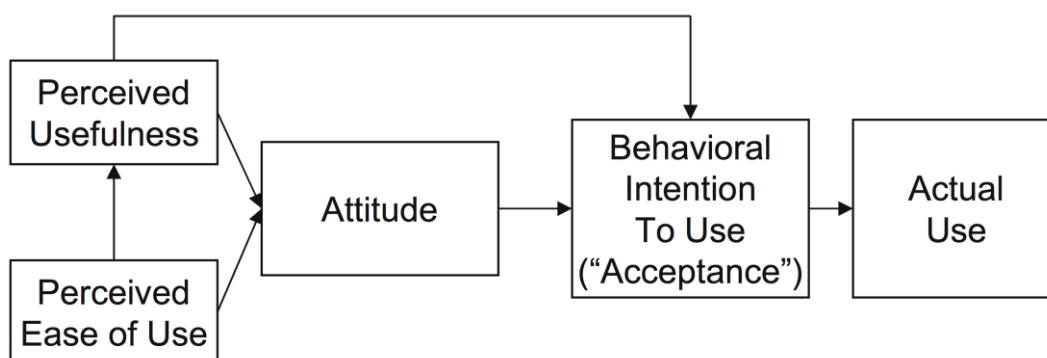


Figure 3 TAM model. Taken from (Holden & Karsh, 2010).

Firstly, TAM assumes, based on the theory of Planned behaviour of Azjen and Fishbein, that a health professional's information systems acceptance is determined by two major concepts: 'perceived usefulness', and 'perceived ease of use' (Ajzen & Fishbein, 1980) (Lee, Kozar, & Larsen, 2003) (Holden & Karsh, 2010). Perceived usefulness is defined as '*The degree to which an individual believes that using a particular system (or technology) would enhance his or her job performance*' (Davis F. , 1985). This concept is very important for this research, as according to several studies, health professionals' perception of usefulness is the main factor in the acceptance of technology (Kowitlawakul, 2011) (Hsiao & Chen, 2011) (Zhang, Cocosila, & Archer, 2010) (Sezgin & Ozkan-Yildirim, 2016) (Strudwick & McGillis Hall, 2015). Stated plainly, health professionals are only willing to adopt a system if they see the usefulness of it (Raitoharju & Laine, 2006). So, for this study, that means that the perception of usefulness of the health professionals of Buurtzorg will be the main factor in the acceptance of the Omaha technology.

The second major concept is the 'perceived ease of use' of a technology. Perceived ease of use is defined as '*The degree to which an individual believes that using a particular system (or technology) would be free of physical and mental effort*' (Davis F. , 1985). According to several studies, perceived ease of use significantly predicts the intention to use a new technology (Ketikidis, Dimitrovski, Lazuras, & Bath, 2012) (Zhang, Cocosila, & Archer, 2010) (Venkatesh & Davis, 2000) (Sezgin & Ozkan-Yildirim, 2016) (Hsieh, Kuo, Wang, Chuang, & Tsai, 2016) (Hsiao & Chen, 2011). The more intuitive a system is, the more using it can increase job performance (Lu, Hsiao, & Chen, 2012). For this study, that means that Buurtzorg health professionals are more willing to use the Omaha system if it works intuitive.

Studies have found other concepts that seem to predict the technology acceptance of health professionals and to influence the major concepts. The results of these studies are presented in Appendix 1. Based on these results, a model is derived and presented in Figure 4 below. This Figure gives an answer on which factors influence the intention to use a technology by health professionals (subquestion 3).

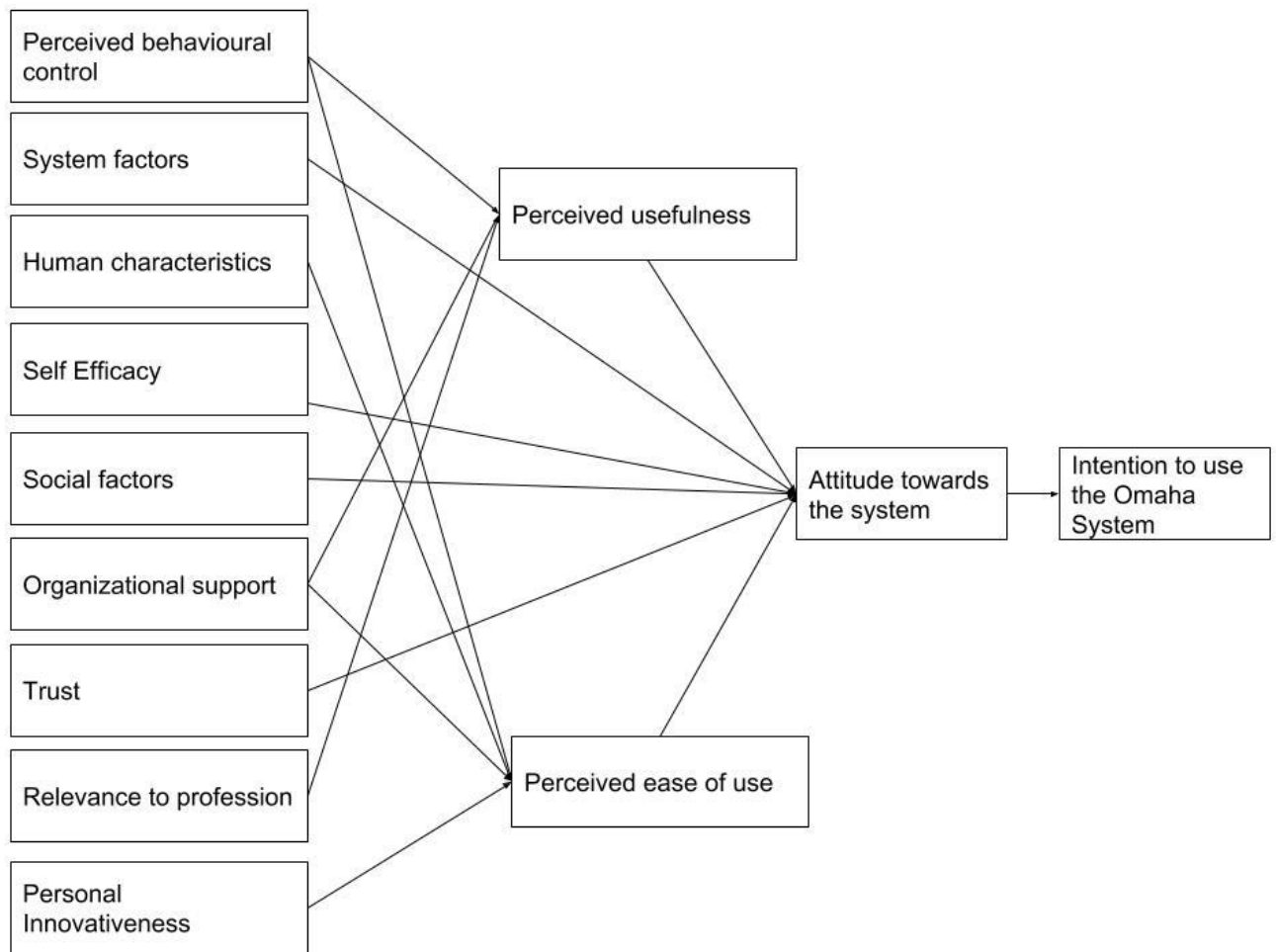


Figure 4 Derived model

The original TAM model has been studied and verified in a significant number of studies, e.g. (Davis F. , 1985) (Adams, Nelson, & Todd, 1992) (Davis F. , 1993) (Venkatesh & Davis, 2000) and references therein. This research focuses on the use and acceptance of a technology by *health* professionals. Therefore, it was decided to focus on other aspects than the main variables. Based on the theory and existing literature and following from subquestion 4 and the main research question, there are 6 hypotheses which are useful to study in the specific case of Buurtzorg in the Netherlands and China. Firstly, as described in section 2.2, in China home-based care is very new (Lu, Liu, & Yang, 2016). Besides, the use of the Omaha technology is also very new in China. As this study examines the differences in the use and acceptance of the Omaha technology between Buurtzorg professionals in China and the Netherlands, it is interesting to know whether the intention to use the Omaha system differs between both countries. As shown in Figure 4, the variable ‘*intention to use the Omaha system*’ is influenced by ‘*the attitude towards the system*’ (Ketikidis, Dimitrovski, Lazuras, & Bath, 2012) (Davis F.

, 1985). The variable *'attitude towards the system'* is, among others, influenced by the two main variables *'perceived ease of use'* and *'perceived usefulness'* (Ketikidis, Dimitrovski, Lazuras, & Bath, 2012) (Kowitlawakul, 2011) (Mayer, Davis, & Schoorman, 1995). Therefore, first the perception of usefulness of the Omaha technology by Buurtzorg professionals influences the intention to use the Omaha technology. As health professionals in China have only been using the Omaha system recently, they might not yet fully see the usefulness of the system. Probably they are mainly busy to familiarize themselves with the system. Secondly, given the novelty of the Omaha system for Chinese professionals, they probably experience physical and mental efforts when using the Omaha system. This also influences their intention to use the technology (Zhang, Cocosila, & Archer, 2010) (Sezgin & Ozkan-Yildirim, 2016). As the intention to use a technology is influenced by these and other factors (Appendix 1), it is expected that the intention to use the Omaha system is lower by health professionals of Buurtzorg in China than for their colleagues in the Netherlands.

Hypothesis 1 states: The intention to use the Omaha technology is higher for health professionals in the Netherlands than in China

Secondly, based on information about the organisational structure of Buurtzorg (chapter 2.2), it is useful to test a hypothesis on the variable *'organizational support'*. According to the definition of organizational support, any (health) technology is perceived as easier to use and as more useful if health professionals experience organizational support (Handayani, et al., 2017) (Ifinedo, 2012) (Hsiao & Chen, 2011) (Escobar-Rodriguez & Mercedes Romero-Alonso, 2013). However, section 2.2 describes that the organizational structure of Buurtzorg is simple and flat, with few levels of hierarchy (de Veer, Brandt, Schellevis, & Francke, 2008). Middle management layers do not exist, there is no departmentalisation and there is a minimum of back-office, employee and controlling functions (Kaloudis, 2016). Therefore, it is expected that Chinese health professionals experience more organizational support, as Chinese organizations are organized in a rather hierarchical manner (Alscher, 2017).

Hypothesis 2 states: "Health professionals of Buurtzorg in China experience more organizational support than health professionals of Buurtzorg in the Netherlands.

Thirdly, based on the operationalization of the concepts that influence the technology use and acceptance of health professionals and the major TAM concepts (Appendix 1), a third hypothesis is formulated.

Hypothesis 3 states: “All relations of the different concepts in the derived model are positive correlated.”

To support the reader, in Table 2 an overview is given of the relations between the various concepts in the derived model. All these relations have been tested in the statistical analysis reported in chapter 4.

Table 2 Relations between the different concepts. The arrow indicates possible (significant) correlations.

Relation between the concepts
Perceived behavioural control → Perceived usefulness
Perceived behavioural control → Perceived ease of use
System factors → Attitude towards the system
Human characteristics → Perceived ease of use
Self-efficacy → Attitude towards the system
Social factors → Attitude towards the system
Organizational support → Perceived usefulness
Organizational support → Perceived ease of use
Trust → Attitude towards the system
Relevance to profession → Perceived usefulness
Personal innovativeness → Perceived ease of use
Perceived usefulness → Attitude towards the system
Perceived ease of use → Attitude towards the system
Attitude towards the system → Intention to use the Omaha system

Fourthly, given the comparative approach of the study, three assumptions on cultural differences between Chinese and Dutch health professionals are derived from the previous section. As we implicitly assume that cultural differences play a role in the use and acceptance

of (health) technology. It is therefore crucial to test these assumptions empirically. The first cultural assumption is that a difference exists between Chinese and Dutch health professionals and their experienced level of confidence with the Omaha system, as this confidence level is determined by human characteristics such as character, gender and individual's computer competency (Chen, Yang, Tang, Huang, & Yu, 2008) (Strudwick & McGillis Hall, 2015) (Handayani, et al., 2017). It is known that cultural differences between China and the Netherlands exist (Buckley, Clegg, & Tan, 2006). The characters of Buurtzorg professionals in China and the Netherlands therefore differ from each other, which influences their technology acceptance (Al-Jumeily, Hussain, & Crate, 2014). Furthermore, the main variable 'perceived ease of use' is influenced by the variable human characteristics. This means that when the level of confidence of health professionals with the Omaha technology is higher, their perceived ease of use of the technology also is higher (Chen, Yang, Tang, Huang, & Yu, 2008) (Strudwick & McGillis Hall, 2015) (Handayani, et al., 2017). It is useful to know whether this variable differs between Chinese and Dutch health professionals. As Dutch health professionals are more experienced with the Omaha technology and, therefore, probably experience more confidence with the system, the following hypothesis is formulated.

Hypothesis 4A suggests: The experienced level of confidence with the Omaha system is higher for health professionals in the Netherlands than for their colleagues in China.

The second cultural hypothesis which is tested is based on literature about the variable 'self-efficacy'. As self-efficacy directly influences someone's attitude towards the system and someone's intention to use the system, it is interesting to test this variable (Gredler & Schwartz, 1997) (Hsieh, Kuo, Wang, Chuang, & Tsai, 2016) (Handayani, et al., 2017). It is expected that differences exist between China and the Netherlands, as one's judgement influences self-efficacy. Dutch health professionals are more experienced with the Omaha technology and therefore their own judgement of their capabilities will probably be higher.

Hypothesis 4B states: The level of judgement of their capabilities to organize and execute courses of action required to use the Omaha technology is higher for health professionals in the Netherlands than for their Chinese colleagues.

The third cultural hypothesis is about the variable 'social factors'. When health professionals score high on social factors, their intention to use the Omaha technology will also be higher

(Venkatesh & Davis, 2000) (Al-Jumeily, Hussain, & Crate, 2014) (Okazi, Castaneda, Sanz, & Henseler, 2012) (Sharifian, Askarian, Nematollahi, & Farhadi, 2014) (Ifinedo, 2012) (Moore & Benbasat, 1991). As social factors are influenced by image, it is expected that there are differences between the Chinese and Dutch health professionals.

Hypothesis 4C states: The perception of Dutch health professionals regarding their intention to use the relatively new Omaha technology is higher than the perception of Chinese health professionals.

All these hypotheses are (statistically) tested in chapter 4 and will give an answer on subquestion 4: *What are the differences in the acceptance and use of technology by Chinese and Dutch health professionals?*

2.3.3 Limitations of TAM

A known limitation of studying the TAM model is self-reported usage of a technology. A number of TAM studies relied on self-reported use rather than measuring actual usage, assuming that self-reported usage successfully reflects actual usage (Lee, Kozar, & Larsen, 2003). However, it is known that self-reported usage is a bias-method, which disrupts the causal relationship between independent and dependent concepts (Agarwal & Karahanna, 2000). Another limitation of TAM study is the tendency to examine only one information system with a homogeneous group of subjects on a single task at a single point of time, and consequently it is difficult to generalize a single study (Lee, Kozar, & Larsen, 2003). A third limitation is the dominance of cross-sectional study. It is possible that user's perception and intention change over time, and therefore it is important to measure these concepts at several points of time, for example by conducting a longitudinal comparison (Lee, Kozar, & Larsen, 2003). In short, TAM has progressed continually during time and was developed by researchers, resolving its limitations, annexing other theoretical models or introducing new external concepts, and being applied to different environments, systems, tasks, and subjects.

To conclude, there are several concepts that, based on literature, provide more insight into the technology acceptance among health professionals in China. The selected studies mostly relate to western countries, making a comparison with non-western countries of prime importance. It is not known a priori whether the concepts influence each other. Or will other conclusions be drawn based on the results? In addition, it is also important for this research to take the

limitations of TAM studies (self-reported usage, generalisation of the study, and the dominance of cross-sectional study) into account and discuss them in the conclusion section of this study.

3. Method

In order to answer the research question and subquestion 4, in the spring of 2018, a pilot survey was constructed in English, and translated to Dutch and Chinese languages. In June, the survey was sent to the management of Buurtzorg in China and the Netherlands, and they distributed these to their health professionals. In addition, two semi-structured interviews were conducted with a nurse of Buurtzorg in the Netherlands, and with a Dutch specialist in the Omaha technology. This chapter describes the case selection, the method which is used for data collection, and the method (in steps) which is used to analyse the results.

3.1 Case selection

In this part of the method chapter, the selected case is further explained. As mentioned in the introduction, in this research the use and acceptance of the Omaha technology by nurses of Buurtzorg in China and the Netherlands is studied. Therefore, it is important to understand the Buurtzorg model and the context in which the survey will be administered. The concept of Buurtzorg consists of the use of community or neighbourhood-based generalist working nurses, who provide home care to independently living clients, in collaboration with the local general practitioner. The Buurtzorg nurses arrange their work themselves, reach clients through social media (e.g. Facebook) and co-produce with family caregivers. The clients of Buurtzorg are very enthusiastic about this concept (de Veer, Brandt, Schellevis, & Francke, 2008). A report from the Netherlands institute for health services research (NIVEL) shows that clients give Buurtzorg and its employees on average a nine out of ten score (de Veer, Brandt, Schellevis, & Francke, 2008). Reasons include the fact that the care is provided by a permanent team and the nurses of Buurtzorg take sufficient time for carrying out the necessary care. The Buurtzorg nurses adapt to their client and his context, also considering the clients' living environment, the people who are close to the client (e.g. partner or relatives at home), the informal network (e.g. friends, family, neighbours etc.) and the formal network of the client (e.g. other professionals). In the daily care, nurses take important principles such as self-management, continuity, building networks and relationships etc. into account.

The health professionals who work for Buurtzorg in the Netherlands and China use the Omaha technology in order to facilitate a.o.: a holistic approach (client care from a holistic perspective, not just physiological aspects), the whole care process (assessment, interventions and outcomes), patient self-management and patient empowerment (Buurtzorg, 2018). The Omaha system is an evidence-based classification system for care and well-being. The Omaha

technology can be used as a tool to better choose, sort and record the actions and outcomes of care for clients. The Omaha system is the most widely used classification system for home-based nursing (Stichting Omaha System Support, 2018). The Omaha system is developed in the United States by and for health professionals. Therefore, it is easy for them to understand and use the technology. The Omaha system focuses on four client domains: the physiological domain, the health-related behavioural domain, the environmental domain and the psychosocial domain, divided in 42 question areas (Koster & Harmsen, 2015). The mapping of the situation of the client is done on basis of scores around the knowledge, behaviour and status of the client. To these scores, the healthcare professional links actions and further specifies these actions so they connect with the client (Versteeg, 2018).

As indicated in the introduction, little is known about technology acceptance among Chinese health professionals and about the acceptance of the Omaha technology (both in China and the Netherlands). Home-based healthcare is an emerging sector in China, and the role that technology plays in health care is also increasing. Therefore, two different Buurtzorg teams (in Ningbo and Qingdao) in China were selected to join this research. Currently, there are three Buurtzorg teams active in China (also one in Shanghai). These teams together consist of about 34 health professionals. In order to compare the acceptance of the Omaha technology between China and the Netherlands, also five Buurtzorg teams in the Netherlands were selected to join this research.

3.2 Data collection

In order to collect the data, a mini-literature review, a pilot survey and two interviews were performed. The method for these different parts is described in this section of the report. The findings of the mini-literature review are explained in the theory section above (chapter 2).

3.2.1 Mini-literature review method

The best form of evidence is a systematic review, an explicit and reproducible method that can be used to gather all necessary evidence (Griffiths, 2002). Because performing a systematic review is very time-consuming, for this thesis the method '*mini-review*' is used (Griffiths, 2002). In this mini-review, the focus is on the acceptance of technology by health professionals (in this study the Omaha technology) in order to answer the subquestions 3 and 4. In order to conduct the mini-literature review, four databases were used which were Scopus, Web of Science, PubMed and Google Scholar. Two different search rounds are completed. In the first

round, the search terms “*technology acceptance model*” and “*health*” were used, as there is an enormous gap between health policy literature on understanding technical collaborative governance and health care. In the second round, the search terms “*technology acceptance*” and “*professionals*”, in order to include qualitative studies. Articles were excluded when they were written in 2007 or earlier, and when they were written about other species than humans. Using the snowball method, various articles written before 2008 were included, as they were important for the theory development or because they were recommended by one of the research supervisors. Articles written in English and Dutch (as the researcher speaks only these two languages), articles written since 2008 were included (to keep the research manageable) and articles about technology acceptance among (health) professionals. Eventually, 53,129 articles were found and 236 of them were assessed on title. After removing the duplicates, 151 articles remained. 64 articles were found suitable for this literature research and this specific study context, after assessing them on abstract and eligibility. In Appendix 2, the complete search strategy can be found. 64 records were fully assessed for their eligibility and after that they were included in this mini-review. The articles are assessed on how recent they are, the journal or database in which they are published and on basis of their results or on basis of their added value for the framework of this research. Other articles are included, as the research supervisors brought them in or advised to include them. The search strategy can be found in Appendix 2.

3.2.3 Pilot survey method

The derived model (Figure 4) forms the basis for the variables used to prepare the pilot survey. The survey mainly consists of validated concepts and questions. In Appendix 3 a table clearly displays all sources which are used for the items that are used as starting point for the different questions in the survey. The complete survey is shown in Appendix 4. The survey consists of 81 pre-structured questions, and one open question. The survey consists of four different parts. Part one consists of some general questions to retrieve some personal information of the participants. This part consists of nine questions. These questions are not based on specific literature but are drawn up by the researcher herself. The second part consists of questions about the Buurtzorg model (self-steering teams of professional nurses providing home care). These questions are formulated by Dr. Minna van Gerven and these questions are primarily formulated for her own research about Buurtzorg in China. The third part of the survey consists of 52 questions and these are the questions that are derived from the literature review (Appendix 3). Davis’ *Technology Acceptance Model* formed the basis of this part of the survey, as of all theories, TAM is considered the most influential and commonly employed theory for describing

an individual's acceptance of information systems (Davis F. , 1985) (Lee, Kozar, & Larsen, 2003). The fourth and final part consists of 15 questions for comparative analysis on cultural differences. These questions are derived from the article "*Computers in Human Behaviour*" (Baptista & Oliveira, 2015). The answer categories of the last three parts of the survey are based on the Likert scale.

This survey has a purely exploratory purpose, as it is very interesting for a compagnie such as Buurtzorg to know how Chinese healthcare professionals use and accept the Omaha technology. Because it is difficult to interview Chinese people, a survey has been opted for. Especially in China the survey sample (N) is very small (13 respondents), that makes it difficult to analyse the results in a quantitative way. Chinese people find it difficult to answer a question and by offering closed questions, we hope for more usable reactions. In China only a few teams of Buurtzorg are active, and therefore it was already known in advance that the sample would be relatively small. When distributing the survey in the Netherlands, we hoped for a sample of about 250 questionnaires (in that case, statistically significant results could be extracted). But, as the nurses in the Netherlands are very busy and the data collection took place during summer holiday season, the Dutch sample is relatively small as well (11 respondents).

As the use of the Omaha system is very new in China, this survey will be a pilot, and will be repeated after a year. The nurses from Buurtzorg China have just started working (from January 2018) with the Omaha technology and they are probably not used to it yet. It may be that after a year, their technology acceptance has changes, as they work longer with the Omaha system and are more used to it. That is why it is interesting to conduct a pilot survey at this moment and carry out the survey again in a year.

The survey was developed in English and translated into Dutch and Chinese (by native speakers), as the respondents are professionals from China and the Netherlands. The Dutch survey is tested by a Dutch nurse who works for Trivium Meulenbelt Zorg (TMZ), a Dutch home care organization that also works with self-steering teams of professional nurses providing home care. The Dutch survey is also tested by two persons: Dr. Somaya Ben Allouch (as an expert in surveys on TAM) and a nurse working on home care industry. Dr Ben Allouch is a part of the Technology, Health & Care department at the Saxion University in Enschede. The Chinese survey is tested by Pei Zhang, working a nurse at Buurtzorg Nederland and by a Chinese master student. The reason why the survey has been tested is to find out if the content

is valid (content validity). The testers fit into the target group and they have feeling with the subject of the survey. They had to see if the survey questions were clear and if the logic within the survey is correct. In addition, they had to test how long it took to complete the survey. The operationalization of the variables and the exact questions of the survey are described in paragraph 3.3 of this section.

3.2.3 Interview method

In order to collect more information in advance about the working method of Buurtzorg and the Omaha technology, three semi-structured interviews were conducted. General questions were formulated in advance, which served as guide during the qualitative interviews. The interviews are recorded and then transcribed. The first interview was conducted during a walk-along day with a nurse from Buurtzorg Enschede in the Netherlands (Code respondent: nurse 1). The questions were based on the interviewer's knowledge of the Omaha system (the interviewer was trained as a nurse and worked with the Omaha system during her job as a health professional) and on a focus group interview from 2017, that was conducted by Dr. Minna van Gerven by four Chinese nurses and their manager (Interview, 2017). The second interview was taken in the office of Buurtzorg in Almelo with a specialist in the field of the Omaha technology (Code respondent: Omaha specialist). Also, these questions were based on the interviewer's knowledge of the Omaha system and on the focus group interview from 2017. The third interview was taken with a manager of Buurtzorg China (code respondent: manager china). This interview took place after the analysis of the survey results. The questions were based on the results of the survey and were used to better understand the background of Buurtzorg in China. All interview schedules have been checked before being taken and adjusted if necessary by Dr. Somaya Ben Allouch and Dr. Minna van Gerven.

3.4 Steps of statistical analysis

In this last part of chapter 3, the steps of the analysis phase are described. First, a data sheet is created in the SPSS program (Statistical Package for the Social Sciences). All answers to the survey are included in this sheet by using the Likert scale (Totally agree = 1, Agree = 2, Neutral = 3, Disagree = 4, Totally disagree = 5). Then the sheet is cleaned up. All zeroes are removed, unfilled questions are not included in the calculations. A few respondents did not complete the whole survey. Nonetheless, I chose to include their surveys to make full use of the provided data. After cleaning the data sheet, the means of the various items are merged into the chosen variables (concepts), with the function *Transform – Compute – Statistical – Mean* in SPSS. This

is important, as the different items (questions in the survey) together form the concepts based on the literature. These concepts are ultimately analyzed in the result section (chapter 4). Then, in order to study the intention to use the Omaha technology, several bar charts are made, by using the function *Graphs – Chart Builder* in SPSS. Thereafter, the derived model is tested, by using the function *Analyze – Correlate – Bivariate* in SPSS. For the calculation of the *correlation coefficients* the Pearson, two-tailed, method is used. With this method, SPSS itself indicates the level of significance which is used. The interpretation of the size of the correlation coefficient is based on the article “*Statistics Corner: A guide to appropriate use of Correlation coefficient in medical research*” (Mumaka, 2012). An article that can be used as rule of thumb for interpreting the size of a correlation coefficient. The value for alpha (to compare the 2-tailed Sigma) is set on 10%. Then a number of T-tests are performed to answer the remaining hypotheses. For this, the function *Analyze – Compare means – Independent samples T-test* in SPSS is used. Hereby, equal variances are assumed when the Sigma Levene’s test for equality of variances is higher than 10%. The value for alpha (to compare the p-value) is set on 10%.

4. Data analysis

In this chapter, first both the Chinese and Dutch research population are described. Hereafter, the data is described and the results of the analyses are presented. In total, 13 Chinese and 11 Dutch surveys were collected during this study.

4.1 Research population

In this section, the Chinese and Dutch research population are described through different cross tables. These tables (cross tables 3,4, 5 and 6) give a clear overview of the number of men and women in the population, their age, their position in the organization and their experience with the Omaha system.

Table 3 Age distribution of the Chinese and Dutch sample (absolute numbers)

	Younger than 20 years	20-24 years	25-34 years	35-44 years	45-54 years	55-64 years	65 years (or older)	Subtotal
Chinese sample	0	1	8	1	3	0	0	13
Dutch sample	0	0	0	3	3	5	0	11
Total	0	1	8	4	6	5	0	24

Table 4 Country and experience distribution of the Chinese and Dutch sample (absolute numbers)

	Less than 1 month	1 to 3 months	3 to 6 months	6 months to a year	1-2 years	Longer than 2 years	Subtotal
Chinese sample	1	4	5	2	0	1	13
Dutch sample	0	0	0	0	0	11	11
Total	1	4	5	2	0	12	24

Table 5 Gender and position distribution of the Chinese sample (absolute numbers)

Chinese sample	Nurse director	Head nurse	Nurse	Caregiver	Subtotal
Man	1	0	0	1	2
Women	0	1	10	0	11
Total	1	1	10	1	13

Table 6 Gender and position distribution of the Dutch sample (absolute numbers)

Dutch sample	District nurse	Nurse in the neighbourhood	Caregiver	Subtotal
Man	2	1	0	3
Women	6	1	1	8
Total	8	2	1	11

First, cross table 3 shows that the responded health professionals in the Dutch sample are older than the professionals in the Chinese sample. Furthermore, table 5 shows that only a few men responded to the survey (2 Chinese men and 3 Dutch men). Table 4 shows that all Dutch health professionals have been working with the Omaha system for more than two years, in contrast to their Chinese colleagues. Only one of the Chinese health professionals has more than two years of experience with the Omaha technology. In addition, the functions are distributed differently in both countries (table 5 and 6). The functions of nurse director and head nurse do not exist at Buurtzorg in the Netherlands, were the highest function within the team is the district nurse. But in both countries most employees are nurses.

4.2 Data description and analysis

This section further analyses the collected data. The researcher has chosen to display a number of relevant results, as these are important to answer the main question: “*How do Buurtzorg professionals in China and the Netherlands differ in their use and acceptance of the Omaha technology?*”, and the different hypotheses which are derived from literature. First, an analysis of the use and acceptance of the Omaha system by Dutch and Chinese health professionals is given. Second, the derived model (Figure 4) and the subsequent hypotheses are statistically analysed.

4.2.1 The intention to use the Omaha system by Chinese and Dutch health professionals

As mentioned in chapter 2, hypothesis 1 states: *The intention to use Omaha technology is higher for health professionals in the Netherlands than in China.* First, an overview of the intention to use the Omaha system by Dutch and Chinese health professionals is given (Figure 5), to understand their acceptance of the Omaha technology.

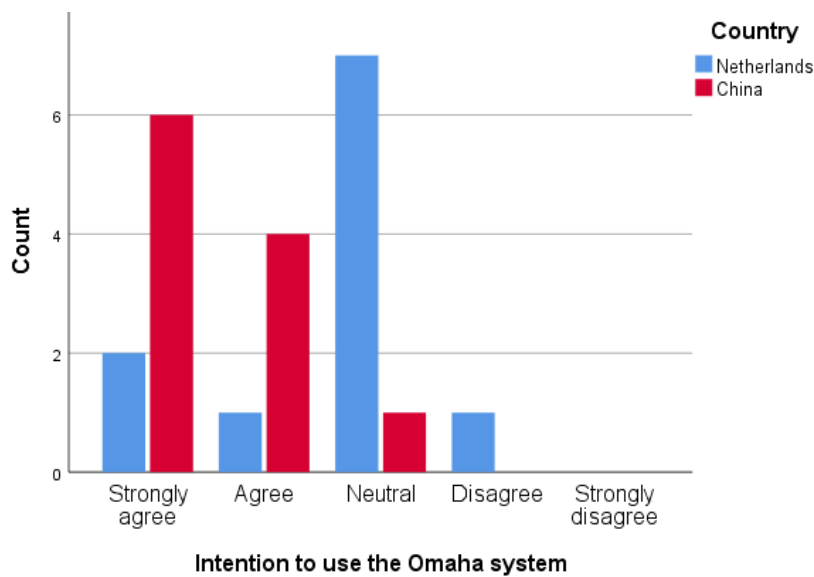


Figure 5 The intention to use the Omaha system by Dutch and Chinese health professionals (N=22)

In this bar chart, it is seen that the Chinese sample responds more positive than the Dutch research sample, and has more intention to use the Omaha system during their work. Based on the survey results, it is concluded that the Dutch sample responded less positive on questions about their intention to use the Omaha system. Note bene, the complete survey can be found in Appendix 4. However, the Chinese manager – the complete interviews are shown in Appendix 5 –indicated: *“I think that the Chinese health professionals are working very short with the Omaha system and have not seen the benefits yet. I think they do not fully accept the Omaha technology yet. The health professionals do not have sufficient confidence in the system, as it is not yet user-friendly enough.”*

On the other hand, both Dutch interviewed respondents are very enthusiastic about the use of the Omaha technology. Nurse 1 indicated: *“I really like working with the Omaha system. Before, we worked with paper files and now everything (except the medicine lists) is digital. This is much clearer and the system gives very useful notifications. For example, when an evaluation moment has to take place or if the client has special features (such as diabetes or an allergy) ... I would prefer that everything goes digital. For me, the added value of the technology is that I can really focus on the care with the client and that I can already prepare myself at home. I am aware when I step into someone's room. Furthermore, it goes much faster and the memories in the system make you forget fewer things. In addition, the assessments are more complete (for example, Gordon's health patterns), because of the many areas that the*

system knows.” Besides, she is also satisfied with the user-friendliness of the Omaha technology: “The system works very quickly and is very clear. You can really look up or read everything about the client.”

The interviewed Omaha specialist is also enthusiastic about the Omaha system. She has been able to give information about the Omaha system and the differences between the Netherlands and China: *“The Omaha system is a fixed classification system. It is what it is. At Buurtzorg, but also at other organizations in the Netherlands, no adjustments were made to the system. This means that no changes may be made to all terms and all parts of the Omaha system. If that does happen, you can no longer call it Omaha system ... No adjustments have been made for China. The beauty of this is that everywhere the same 'care language' is used. Translating that language, sometimes requires a lot of attention. For the Netherlands, that also lasted quite a long time. To properly interpret all terms from the Omaha system to the Dutch language. That was quite a search. We also have those experiences with other countries, that also takes a lot of time. That requires a lot of attention. An example is 'communication with social services' (one of the 42 areas), well that is sometimes quite difficult to interpret, what exactly is meant by that? What are social provisions in other countries? Sometimes it needs more explanation because, for example, the social system is very different in other countries.”*

To summarize, the quantitative data shows that the Chinese sample responds is more intended to use the Omaha system. Therefore, the quantitative data does not confirm hypothesis 1, which states that the intention to use the Omaha technology is higher for health professionals in the Netherlands than in China. On the contrary, the qualitative data indicates that Chinese health professionals have not yet seen the benefits of the Omaha system, and that the technology has not yet been fully accepted (interview with the Chinese manager). The qualitative data also indicates that the interviewed Dutch respondents are very enthusiastic about the use of the Omaha system, which confirms hypothesis 1. These results are more thoroughly analysed in the conclusion section of this thesis.

Based on information about the differences in organizational structure of Buurtzorg in the Netherlands and China in section 2.2, it is possible that the lower acceptance of the Dutch respondents is influenced by the variable ‘*organizational support*’, assuming that the variables in the derived model influence the intention to use. It is expected that the more organizational support someone experiences, the higher someone’s intention to use the Omaha technology is

(Handayani, et al., 2017) (Ifinedo, 2012) (Hsiao & Chen, 2011) (Escobar-Rodriguez & Mercedes Romero-Alonso, 2013). Therefore, Chinese health professionals might experience more organizational support, as Chinese organizations are organized in a rather hierarchical manner (Alscher, 2017). *Hypothesis 2 states: Health professionals of Buurtzorg in China experience more organizational support than health professionals of Buurtzorg in the Netherlands.* Figure 6 shows that Chinese health professionals indeed experience more organizational support than health professionals in the Netherlands.

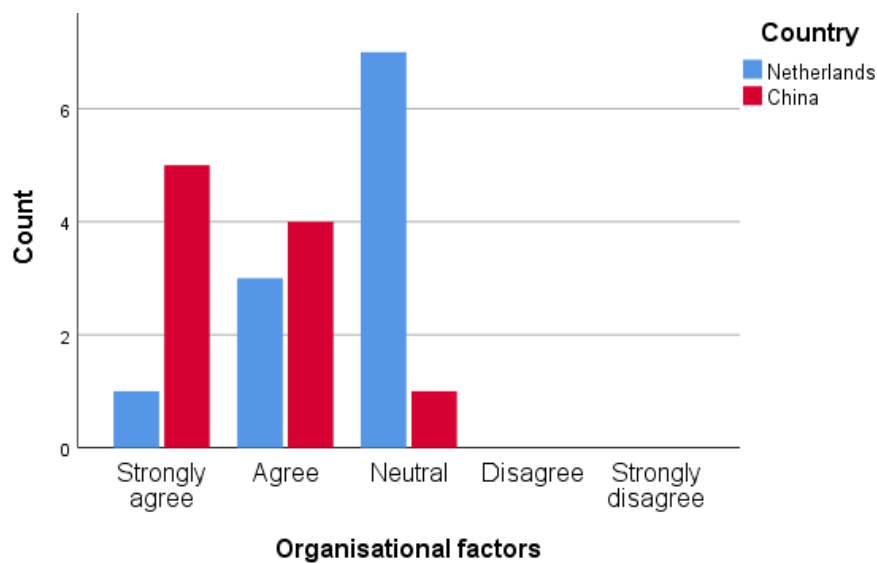


Figure 6 Experience of organizational support on the acceptance of the Omaha technology by Dutch and Chinese health professionals (N=21)

The interview with the Dutch Omaha expert (Appendix 5), confirms this result: *“When you go working at Buurtzorg, you can make the system your own through online training, through the learning environment and by sharing your knowledge with colleagues. But then you really have to go into that yourself. For other customers we give quite a lot of training. That is really a very nice support, in addition to the online education and the deepening that people have to do themselves. There also offer tools (movies, book that you can read, training of a whole day). But at Buurtzorg Nederland they only offer online education and share knowledge within the team. But abroad, we have chosen to add an online training. Then I actually have contact with the team through a kind of livestream and then I give real live training.”* She explained that the Chinese health professionals are actively trained, whereas in the Netherlands the training is limited to online education and informal information sharing. In China they also offer a live online training. Apparently, the Chinese respondents value the training in a positive way. In addition, there are also management functions at Buurtzorg China that support the teams, in contrast to the Buurtzorg teams in the Netherlands (Table 5 and 6). This management support

also contributes to the positive experience of organizational support of Chinese health professionals. The interviewed Chinese manager confirms this result: *“Naturally, training sessions were given with an explanation of the Omaha technology. I gave them myself. Besides, the professionals can ask the management for help, and they often do so. A few weeks ago, a Dutch coach visited the Chinese teams to support them in resolving a conflict. Furthermore, we have a biweekly team meeting and in that meeting a case is discussed. The nurse picks up a computer and discusses which diagnosis she has made and what she has used in the Omaha system.”*

To summarize, both quantitative and qualitative data show that Chinese health professionals experience more organizational support than their Dutch colleagues. This result confirms hypothesis 2, which states that health professionals of Buurtzorg in China experience more organizational support than health professionals of Buurtzorg in the Netherlands.

4.2.2 The derived model

As mentioned in the theory section of this thesis, hypothesis 3 states: *“All relations of the different concepts in the derived model are positive correlated”*. This hypothesis is statistically analysed. Therefore, all different relationships that are mentioned in Appendix 1 are tested using the Pearson correlation. To clearly present the result, the same structure has been used as in Figure 4 (derived model), and thus the dependent variable changes per table row. The hypothesis is that all variables that are related in the derived model, correlate positively with each other (hypothesis 3). The results of the Pearson correlations, based on the answers of the 24 respondents together, are shown in Table 7.

Table 7 Correlation of the variables in the derived model (N=22)

Variables	Coefficient	Correlation
Perceived behavioural control → Perceived usefulness	0,808	High positive correlation
Perceived behavioural control → Perceived ease of use	0,615	Moderate positive correlation
System factors → Attitude towards the system	0,826	High positive correlation
Human characteristics → Perceived ease of use	0,479	Low positive correlation
Self-efficacy → Attitude towards the system	0,858	Very high positive correlation

Social factors → Attitude towards the system	0,687	Moderate positive correlation
Organizational support → Perceived usefulness	0,632	Moderate positive correlation
Organizational support → Perceived ease of use	0,552	Moderate positive correlation
Trust → Attitude towards the system	0,820	High positive correlation
Relevance to profession → Perceived usefulness	0,836	High positive correlation
Personal innovativeness → Perceived ease of use	0,727	High positive correlation
Perceived usefulness → Attitude towards the system	0,891	High positive correlation
Perceived ease of use → Attitude towards the system	0,773	High positive correlation
Attitude towards the system → Intention to use the Omaha system	0,105	Negligible correlation

Based on the hypothesis 3, positive correlations are hypothesized between the different independent variables in the model. This does not imply a causal relationship between the tested variables. The results in Table 7 show that there is a positive correlation between all tested variables, the bulk of the correlations being highly positively correlated (Mumaka, 2012). It should be noted that the research sample is small ($N = 24$). In the current exploratory study, we now use the Pearson correlation, even though the author is aware of its limitations for small research samples, as the use of Pearson correlations is only recommended for $N \geq 25$ (David, 1938). These results are further interpreted in the conclusion section of this thesis.

4.2.3 Analysis of the cultural differences

Given the comparative approach of the study, three assumptions on cultural differences between Chinese and Dutch health professionals are derived from the previous section. First, hypothesis 4A suggests: *The experienced level of confidence with the Omaha system is higher for health professionals in the Netherlands than for their colleagues in China.* A paired independent samples T-test is performed to compare the experienced level of confidence (human characteristics) to Dutch and Chinese health professionals. There was a significant difference in the scores for Dutch health professionals ($M = 2.98$, $SD = 0.564$) and Chinese health professionals ($M = 2.16$, $SD = 0.785$); $t(20) = 2.808$, $p = 0.011$. Please note that the p-value is low, indicating a highly significant result.

Because there is a significant difference between the scores of both groups, a bar chart has been made to visualize the experienced level of confidence for both groups. In contrast to hypothesis 4A, Figure 7 shows that the experienced level of confidence with the Omaha technology is higher for Chinese health professionals than for their Dutch colleagues.

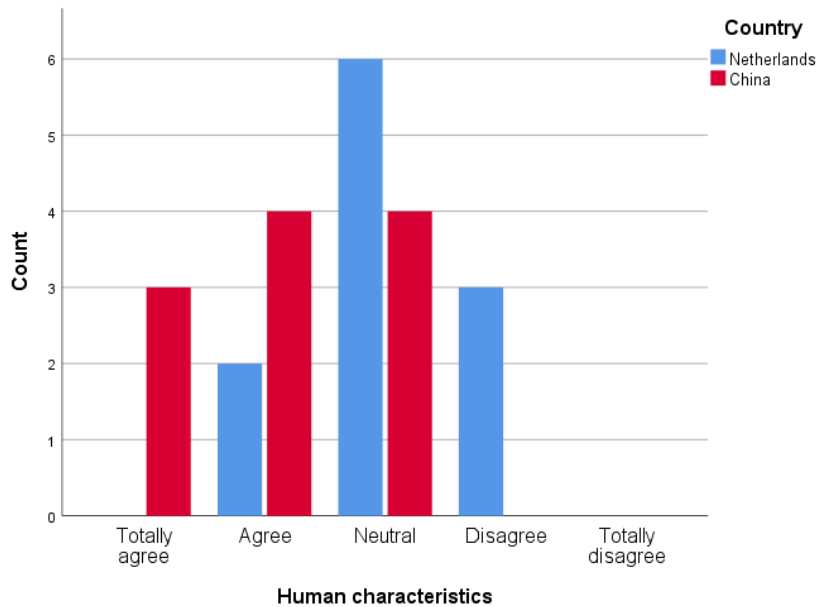


Figure 7 Experienced level of confidence with the Omaha technology by Dutch and Chinese health professionals (N=22)

However, the Chinese manager indicated: *“The Chinese health professionals do not experience the system as user-friendly. From their working experience in hospitals, they are used to a more directive and hierarchical working procedure. Now they have to think of everything themselves. They still have to get used to the method of the Omaha system.”*

This qualitative data contrasts the quantitative data above. Naturally, people not yet acquainted with a particular system experience less confidence in working with the system. As the Dutch professionals have been working with the Omaha system for quite some time and are more accustomed to the methods used by the technology, it is expected that they score higher on the experienced level of confidence with the Omaha technology. This is not supported by the quantitative data.

Hypothesis 4B states: *The level of judgement of their capabilities to organize and execute courses of action required to use the Omaha technology is higher for health professionals in the Netherlands than for their Chinese colleagues.* This hypothesis is tested by performing a paired independent T-test to compare the judgement of health professionals of their capabilities

to organize and execute courses of action required to use the Omaha technology (self-efficacy) to Dutch and Chinese health professionals. There was not a significant difference in the scores for Dutch health professionals ($M = 1.75$, $SD = 0.536$) and Chinese health professionals ($M = 1.70$, $SD = 0.732$); $t(20) = 0.166$, $p = 0.870$. Therefore, it is not statistically confirmed that there is a difference between Chinese and Dutch health professionals and their judgement of their capabilities to use the Omaha system. Given the fact that the means of the different groups are virtually identical, not even a trend can be noted.

Hypothesis 4C states: *The perception of Dutch health professionals regarding their intention to use the relatively new Omaha technology is higher than the perception of Chinese health professionals.* This hypothesis is also tested by performing a paired independent T-test to compare the perception to use the Omaha technology (social factors) to Dutch and Chinese health professionals. There was not a significant difference in the scores for Dutch health professionals ($M = 2.36$, $SD = 0.793$) and Chinese health professionals ($M = 1.80$, $SD = 0.771$); $t(19) = 1.648$, $p = 0.116$. Note bene, the p-value is close to the chosen alpha value.

5. Conclusion

In this thesis, the technology use and acceptance of the Omaha technology by health professionals at Buurtzorg in China and the Netherlands is studied. To do so, four subquestions and six hypotheses have been formulated.

5.1 Summary of the results

As explained in chapter 2, both the Chinese and Dutch populations are ageing fast. With the increase in the number of elderly people, the demand for care consequently increases as well (Getzen, 1992). A possible solution for this ageing problem is home-based care. An example of a successful home-based care organization is Buurtzorg (Schouten, 2017). Due to its organizational structure, Buurtzorg provides high-quality home-based care at lower cost than competing organizations, and might therefore be a good solution to the expensive problem of global ageing. In Buurtzorg the Omaha technology is used as a tool to better choose, sort and record the actions and outcomes of care for clients (Koster & Harmsen, 2015). Therefore, it is relevant to understand which factors play a role for health professionals in the intention to use and the acceptance of the Omaha technology. Based on literature about technology acceptance among health professionals, a technology acceptance model is designed (Figure 4). The different concepts which are important for the technology acceptance among health professionals form the basis for the pilot survey. These concepts are mainly based on Western studies, only little research is done on technology acceptance in China. Based on the results of the survey and various in-depth interviews, knowledge is gained about the technology acceptance among health professionals at Buurtzorg in China and the Netherlands.

Until now, little is known about the Buurtzorg concept in China and the experiences of the health professionals with Buurtzorg and the Omaha technology in China. The results of exploratory pilot study give a good first understanding and also offer directions for further research. All respondents, both Dutch and Chinese, are very positive about the Omaha system. Surprisingly, the results obtained from this study demonstrate that, contrasting hypothesis 1 - *the intention to use the Omaha technology is higher for health professionals in the Netherlands* - the intention to use the Omaha technology is higher for Chinese health professionals. This result means that the Chinese respondents indicated that they are highly willing to use the Omaha system in the future and that they would recommend the use of the Omaha system to other people more than their Dutch colleagues. This is interesting, as the intention to use the Omaha system is influenced by the *'perceived ease of use'* and the *'perceived usefulness'* of

the system. Consequently, it was hypothesized that the Dutch sample would have a higher intention to use the technology than the Chinese sample. The Chinese health professionals have only been working recently with the Omaha system and the expectation was that they would not yet experience it as easy to use or useful, as they still have to get familiar with the system. However, the interview with the Chinese manager shows that the survey results might not reflect the actual situation. He indicated that Chinese health professionals do not see the benefits of the Omaha system yet. It is possible that the lower acceptance of the Dutch respondents is influenced by the variable '*organizational support*' (training, management support, and information). It was expected that Chinese health professionals experience more organizational support (hypothesis 2), as Chinese organizations are organized in a rather hierarchical manner. This means that more managers work at Buurtzorg China than in the Netherlands, which give the Chinese health professionals more support (Alscher, 2017). The results show that Chinese health professionals indeed experience more organizational support than their Dutch colleagues do. The qualitative data shows that there is not only more management support for the Chinese professionals, but that they also receive more training than their Dutch colleagues. Nurse 1 indicates that she had to familiarize herself with the technology (with help of her teammates). The Chinese manager indicates that he trains every employee in the use of the Omaha system. The results imply that organizational factors such as management support and training would probably also be appreciated by health professionals of Buurtzorg in the Netherlands. It also implies that support from the organization is currently being missed. It would be interesting to further study this in follow-up research.

Secondly, the result section shows that there is a positive correlation between all tested variables (hypothesis 3). This result confirms other studies that indicate that the selected variables in the derived model are useful to study the technology acceptance of health professionals, e.g. (Beldad & Hegner, 2017) (Chen, Yang, Tang, Huang, & Yu, 2008) (Ketikidis, Dimitrovski, Lazuras, & Bath, 2012) (see Appendix 3 for the complete list of studies). The selected variables are in some sense similar, as they all refer to someone's attitude towards the Omaha technology. Therefore, it is not entirely surprising that most variables are highly positively correlate. This also applies to the original TAM model. Looking critically at this model, then you could state that all variables refer to very similar attitudes and personal characteristics, and high correlations could have been expected.

Third, some cultural differences are tested by performing paired independent samples T-tests. The results show that there is a significant difference in the scores on the experienced level of confidence with the Omaha system between Dutch and Chinese health professionals, and that the experienced level of confidence with the technology is higher for Chinese health professionals. The interview with the Chinese manager shows that he does not confirm this. He explains that the method of the Omaha technology is very new for the Chinese professionals, and that they do not experience it as user-friendly. Therefore, it was expected that their experienced level of confidence with the Omaha system would be low. The differences between the quantitative and qualitative data can be caused by the Chinese culture (*Mianzi*). This will be discussed in more detail in the next section.

To conclude, ageing China and the Netherlands differ in their use and acceptance of the Omaha technology in different ways. The (sometimes contrasting) results of this pilot study form a solid basis for future research. The TAM model provided sufficient support for this research, despite the known limitations of the model. One important question is whether the use of a survey is the best method with a Chinese target group. The validity of their answers is doubted as the Chinese results are sometimes surprisingly contradicting. In a subsequent study, a different research method may be better.

5.2 Limitations

There are various limitations to this study. First with regard to the generalizability of this research. In China, only a few Buurtzorg teams are active with a total of 34 health professionals. It is assumed that the 11 Chinese respondents are representative for the group of health professionals of Buurtzorg in China. For the Dutch sample (13 respondents), this is not the case, as Buurtzorg employs over 2000 health professionals in the Netherlands. Consequently, it is possible to question the generalizability of the results of the Dutch research sample. In addition, given the small population sample, nothing can be 'proven'.

Secondly, while performing the mini-literature review, some other articles – which were not all found during the review – were included, as the research supervisors brought them in or advised to include them. Therefore, the question can be asked whether the formulated search terms were correct and complete.

Thirdly, it is not clear whether the questions have been filled in completely honest. It is possible that cultural differences played a role in finishing the survey, as it is known that for Chinese people *Mianzi* is very important (Buckley, Clegg, & Tan, 2006). *Mianzi* is defined as “*the recognition by others of an individual’s social standing and position*” (Buckley, Clegg, & Tan, 2006). Someone’s *Mianzi* (dignity or prestige) has to be protected. Therefore, Chinese prefer not to admit a lack of understanding or job difficulties. As many questions in the survey focus on ease of use, necessary skills, and self-efficacy, it is possible to question the given answers. To give an example; Chinese professionals indicate their appreciation for the given organizational support by Buurtzorg. It might be possible that, given the hierarchical Chinese culture, employees are reluctant to criticize their superiors (Buckley, Clegg, & Tan, 2006). In this research, it has been assumed that a survey with mostly closed questions is a good way to measure the technology acceptance among Chinese health professionals. For future research, it is relevant to do a literature study on Chinese psychology, to see whether a survey is the best choice for Chinese respondents. The author is unaware of other available methods to perform a similar study. If better methods are found, bias caused by cultural differences is minimized and the internal validity of the study can be improved.

Fourthly, self-reported usage might bias this study, as the study relies on self-reported answers and not the measured actual usage (Lee, Kozar, & Larsen, 2003). It is possible that this bias disrupts the relationship between independent and dependent concepts (Agarwal & Karahanna, 2000). Another limitation of this TAM study is the dominance of cross-sectional study. It is possible that Buurtzorg professionals’ perception and intention change over time, and therefore it is important to further measure these concepts at several points in time, for example by conducting a longitudinal comparison (Lee, Kozar, & Larsen, 2003).

5.3 Concluding remarks

To conclude, I studied the differences in use and acceptance of the Omaha technology by Buurtzorg professionals in ageing China and the Netherlands. The results are interesting, but in some cases contrasting. One example is the intention to use the Omaha technology by Chinese health professionals and their experienced level of confidence. Whether a survey is the best way to study a Chinese population is not known, and should be studied in a follow-up study. Personally, I have my doubts on the validity and “fairness” of the given responses. In that sense, this study indeed is exploratory, and gives various directions for future research.

I would like to conclude with a personal note. It became clear that the more one knows, the more questions one has. Consequently, research is never "*finished*". I learned tremendously during my time as a Health Sciences student, for which I am very grateful.

Reference list

- Adams, D., Nelson, R., & Todd, P. (1992). Perceived usefulness, ease of use, and usage of information technology: A replication. *Mis Quarterly*, 227-247.
- Agarwal, R., & Karahanna, E. (2000). Time Flies When you're Having Fun Cognitive Absorption and Beliefs about Information Technology Usage. *MIS Quarterly*, 665-694.
- Agarwal, R., & Prasad, J. (1998). A Conceptual and Operational Definition of Personal Innovativeness in the Domain of Information Technology. *Information Systems Research*, 204-215.
- Ajzen, I. (2006). Constructing a theory of planned behavior questionnaire. 1-12.
- Ajzen, I., & Fishbein, M. (1980). Understanding attitudes and predicting social behavior. *Englewood Cliffs*.
- Al-Jumeily, D., Hussain, A., & Crate, S. (2014). The Impact of Cultural Factors on Technology Acceptance, Students Point of View. *International Conference on Frontiers in Education: Computer Science and Computer Engineering*.
- Alscher, P. (2017). *The Bureaucratic Steering of Local Governments and its Effects on Nursing Autonomy in Home Care for Elderly in the Netherlands and Shanghai*. Enschede: University of Twente.
- Baptista, G., & Oliveira, T. (2015). Computers in Human Behavior. *Information Management School*, 418-430.
- Beldad, A., & Hegner, S. (2017). Expanding the Technology Acceptance Model with the Inclusion of Trust, Social Influence, and Health Valuation to Determine the Predictors of German Users' Willingness to Continue using a Fitness App: A Structural Equation Modeling Approach. *International Journal of Human-Computer Interaction*.
- Boer, H., & Seydel, E. (1996). Protection motivation theory. In M. Conner, & P. Norman, *Predicting health behaviour: Research and practice with social cognition models* (pp. 95-120). Maidenhead England: Open University Press.
- Brouwer, K. (Director). (2017). *Tegenlicht: Zorgeloos leven volgens Jos de Blok* [Motion Picture].
- Buckley, P., Clegg, J., & Tan, H. (2006). Cultural awareness in knowledge transfer to China - The role of guanxi and mianzi. *Journal of World Business*, 275-288.
- Buurtzorg. (2018). *The Buurtzorg Model*. (Buurtzorg International) Retrieved February 16, 2018, from www.buurtzorg.com: <https://www.buurtzorg.com/about-us/buurtzorgmodel/>
- Buurtzorg. (2018). *The Buurtzorg Model*. (Buurtzorg International) Retrieved February 16, 2018, from www.buurtzorg.com: <https://www.buurtzorg.com/about-us/buurtzorgmodel/>

- Buurtzorg. (2018). *Welcome to Buurtzorg*. (Buurtzorg) Retrieved February 20, 2018, from www.buurtzorg.com: <https://www.buurtzorg.com/>
- Cen, S., & Powell, J. (2012). *Aging in China*. Boston: Springer.
- Chau, P., & Hu, P. (2002). Examining a Model of Information Technology Acceptance by Individual Professionals: An Exploratory Study. *Journal of Management Information Systems*, 191-229.
- Chen, I., Yang, K., Tang, F., Huang, C., & Yu, S. (2008). Applying the technology acceptance model to explore public health nurses' intentions towards web-based learning: A cross-sectional questionnaire survey. *International Journal of Nursing Studies*, 869-878.
- Chin, W., & Gopal, A. (1995). Adoption Intention in GSS Relative Importance of Beliefs. *Data Base*, 42-63.
- China Power. (2017, August 11). *China Power Team: "Does China have an aging problem?"*. (China Power) Retrieved February 20, 2018, from www.chinapower.csis.org: <https://chinapower.csis.org/aging-problem/>
- CMAP. (n.d.). *The Omaha System*. (CMAP Software) Retrieved February 24, 2018, from cmpaspublic3.ihm.us: http://cmapspublic3.ihmc.us/rid=1290438215218_1896624281_17913/2010-11-22%20Omaha%20System%20for%20NSFr.cmap
- David, F. (1938). *Tables of the ordinates and probability integral of the distribution of correlation coefficient in small samples*. Cambridge: Cambridge University Press.
- Davis, F. (1985). A technology acceptance model for empirically testing new end-user information systems: theory and results. *Sloan School of Management*, 1-291.
- Davis, F. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 319-339.
- Davis, F. (1993). User acceptance of information technology system characteristics, user perceptions and behavioral impacts. *International Journal of Man-Machine Studies*, 475-487.
- de Blok, J., & van Roessel, G. (2016, April). *Buurtzorg: A Neighborhood Model of Care*. Access Health International. New York.
- de Veer, A., Brandt, H., Schellevis, F., & Francke, A. (2008). *Buurtzorg: nieuw en toch vertrouwd*. Utrecht: NIVEL.
- Dehua, C. (2018, July 20). <https://gbtimes.com/chinas-elderly-population-to-peak-at-half-a-billion-in-2050>. Retrieved from www.gbtimes.com: <https://gbtimes.com/chinas-elderly-population-to-peak-at-half-a-billion-in-2050>
- DeLone, W., & McLean, E. (1992). Information Systems Success: The Quest for the Dependent Variable. *The Institute of Management Sciences*, 60-95.

- Escobar-Rodriguez, R., & Mercedes Romero-Alonso, M. (2013). Modeling Nurses' Attitude Toward Using Automated Unit-Based Medication Storage and Distribution Systems. *Computers, Informatics, Nursing*, 234-243.
- Florence Nightingale Instituut. (2018). *Verplegen in de thuiszorg*. (FNI) Retrieved February 23, 2018, from www.fni.nl: <http://www.fni.nl/verplegen-in-de-thuiszorg>
- Getzen, T. (1992). Population aging and the growth of health expenditures. *Journal of gerontology*, S98-S104.
- Gray, B., Sarnak, D., & Burgers, J. (2015, May). *Home Care by Self-Governing Nursing Teams: The Netherlands' Buurtzorg Model*. Retrieved February 16, 2018, from www.commonwealthfund.org: http://www.commonwealthfund.org/~media/files/publications/case-study/2015/may/1818_gray_home_care_nursing_teams_buurtzorg_model_case_study.pdf
- Gredler, M., & Schwartz, L. (1997). Factorial structure of the self-efficacy for self-regulated learning scale. *Psychological Reports*, 52-57.
- Griffiths, P. (2002). Evidence informing practice: introducing the mini-review. 2002.
- Handayani, P., Hidayanto, A., Pinem, A., Hapsari, I., Sandhyaduhita, P., & Budi, I. (2017). Acceptance model of a Hospital Information System. *International Journal of Medical Informatics*.
- Holden, J., & Karsh, B. (2010). The technology acceptance model: its past and its future in health care. *Journal of Biomedical Informatics*, 159-172.
- Hsiao, J. C., & Chen, R. (2011). A Study of Factors Affecting Acceptance of Hospital Information Systems: A Nursing Perspective. *Journal of Nursing Research*, 150-160.
- Hsieh, H., Kuo, Y., Wang, S., Chuang, B., & Tsai, C. (2016). A Study of Personal Health Record User's Behavioural Model Based on the PMT and UTAUT Integrative Perspective. *International Journal of Environmental Research and Public Health*.
- Hsu, H., & Wu, Y. (2017). Investigation of the Effects of a Nursing Information System by Using the Technology Acceptance Model. *Computers, Informatics, Nursing*, 315-322.
- Hubona, G., & P.H., C. (1994). System Effectiveness of Knowledge-Based Technology: The Relationship of User Performance and Attitudinal Measures. *Hawaii International Conference on System Sciences*, 532-541.
- Ifinedo, P. (2012). Technology acceptance by health professionals in Canada: An analysis with a modified UTAUT model. *Hawaii International Conference on System Sciences*, 2937-2946.
- Interview. (2017, December 12). Interview Recording 2 with Pei Zhang & coworkers. Buurtzorg Shanghai Office.
- Kaloudis, H. (2016, September 21). [www.medium.com](https://medium.com/@Harri_Kaloudis/a-systematic-overview-of-the-literature-in-english-on-buurtzorg-nederland-part-b-the-buurtzorg-189a7e4704b0). Retrieved February 18, 2018, from [www.medium.com](https://medium.com/@Harri_Kaloudis/a-systematic-overview-of-the-literature-in-english-on-buurtzorg-nederland-part-b-the-buurtzorg-189a7e4704b0): https://medium.com/@Harri_Kaloudis/a-systematic-overview-of-the-literature-in-english-on-buurtzorg-nederland-part-b-the-buurtzorg-189a7e4704b0

- Keijzer, N. (2018, April 23). Het Omaha Systeem. (J. Verschoof-Dekker, Interviewer)
- Ketikidis, P., Dimitrovski, T., Lazuras, L., & Bath, P. (2012). Acceptance of health information technology in health professionals: An application of the revised technology acceptance model. *Health Informatics Journal*, 124-134.
- Kiers, B. (2015, October 29). *Azië rolt rode loper uit voor Buurtzorg*. (Bohn Stafleu van Loghum) Retrieved February 21, 2018, from www.zorgvisie.nl: <https://www.zorgvisie.nl/azie-rolt-rode-loper-uit-voor-buurtzorg-2709660w/>
- King, W., & He, J. (2006). A meta-analysis of the technology acceptance model. *Information & Management*, 740-755.
- Koster, N., & Harmsen, J. (2015). *Het Omaha System, een introductie*. Vilans.
- Kowitlawakul, Y. (2011). The Technology Acceptance model: Predicting Nurses' Intention to Use Telemedicine Technology (eICU). *Computers, Informatics, Nursing*, 411-418.
- Lee, B., Yoon, J., & Lee, I. (2009). Learners' acceptance of e-learning in South-Korea: Theories and results. *Computers & Education*, 1320-1329.
- Lee, Y., Kozar, K., & Larsen, K. (2003). The Technology Acceptance Model: Past, Present, and Future. *Communications of the Association for Information Systems*, 751-781.
- Lu, B., Liu, X., & Yang, M. (2016). A Budget Proposal for China's Public Long-Term Care Policy. *Journal of Aging & Social Policy*, 84-103.
- Lu, C., Hsiao, J., & Chen, R. (2012). Factors Determining Nurses Acceptance of Hospital Information Systems. *Computers, Informatics, Nursing*, 257-264.
- Mayer, R., Davis, J., & Schoorman, F. (1995). An integrative model of organization trust. *Academy of Management Review*, 709-734.
- Moore, G. C., & Benbasat, I. (1991). Development of an instrument to measure the perceptions of adopting an information technology innovation. *Information Systems Research*, 192-222.
- Mumaka, M. (2012). Statistics Corner: A guide to appropriate use of Correlation coefficient in medical research. *Malawi Medical Journal*, 69-71.
- NRC Opinie. (2017, July 15). Opkomende supermacht China is al de grootste. *NRC.nl*.
- Oh, S., Ahn, J., & Kim, B. (2003). Adoption of broadband Internet in Korea: the role of experience in building attitudes. *Journal of Information Technology*, 267-280.
- Okazi, S., Castaneda, J., Sanz, S., & Henseler, J. (2012). Factors Affecting Mobile Diabetes Monitoring Adoption Among Physicians: Questionnaire Study and Path Model. *Journal of Medical Internet Research*, 1-13.
- Ouderenfonds. (2018). <https://www.ouderenfonds.nl/onze-organisatie/feiten-en-cijfers/>. Retrieved from www.ouderenfonds.nl: <https://www.ouderenfonds.nl/onze-organisatie/feiten-en-cijfers/>

- P. Ketikidis, T. D. (2012). Acceptance of health information technology in health professionals: An application of the revised technology acceptance model. *Health Informatics Journal*, 124-134.
- Pai, F., & Huang, K. (2011). Applying the Technology Acceptance Model to the introduction of healthcare information systems. *Technological Forecasting & Social Change*, 650-660.
- Park, Y., & Chen, J. (2007). Acceptance and adoption of the innovative use of smartphone. *Industrial Management & Data Systems*, 1349-1365.
- Peeters, J., Wiegers, T., de Bie, J., & Friele, R. (2013). *Technologie in de zorg thuis*. Nivel.
- Pons, H. (2017, January 31). *Vergrijzing legt zware druk op zorgsector*. (Zanders) Retrieved February 20, 2018, from www.zanders.eu: <https://zanders.eu/nl/latest-insights/vergrijzing-legt-zware-druk-op-zorgsector/>
- Population Pyramid. (2018). <http://www.populationpyramid.net/>. Retrieved from www.populationpyramid.net: <http://www.populationpyramid.net/>
- Raitoharju, R., & Laine, M. (2006). Exploring the differences in informatino technology acceptance between healthcare professionals. *Association for Information Systems*.
- Schouten, G. (Director). (2017). *Een andere kijk: Jos de Blok* [Motion Picture].
- Schumacher, J. (2017, December 27). *Cijfers: Vergrijzing en toenemende zorg*. (Zorg voor Beter) Retrieved February 20, 2018, from www.zorgvoorbeter.nl: <http://www.zorgvoorbeter.nl/ouderenzorg/hervorming-zorg-cijfers-vergrijzing.html>
- Schumacher, J. (2017, May 22). <https://www.zorgvoorbeter.nl/veranderingen-langdurige-zorg/cijfers-vergrijzing>. Retrieved from www.zorgvoorbeter.nl: <https://www.zorgvoorbeter.nl/veranderingen-langdurige-zorg/cijfers-vergrijzing>
- Sezgin, E., & Ozkan-Yildirim, S. (2016). A cross-sectional investigation of acceptance of health information technology: A nationwide survey of community pharmacists in Turkey. *Research in Social and Administrative Pharmacy*, 949-965.
- Sharifian, R., Askarian, F., Nematollahi, M., & Farhadi, P. (2014). Factors influencing nurses' acceptance of hospital information systems in Iran: application of the Unified Theory of Acceptance and Use of Technology. *Health Information Management Journal*, 23-28.
- Stichting Omaha System Support. (2018). *Omaha system support*. (Stichting Omaha System Support) Retrieved February 8, 2018, from www.omahasystem.nl: <http://www.omahasystem.nl/>
- Stichting Omaha System Support. (2018). *Omaha system support*. (Stichting Omaha System Support) Retrieved February 8, 2018, from www.omahasystem.nl: <http://www.omahasystem.nl/>
- Strudwick, G., & McGillis Hall, L. (2015). Nurse acceptance of electronic health record technology: a literature review. *Journal of Research in Nursing*, 596-607.

- Subramanian, G. (1994). A replication of perceived usefulness and perceived ease of use measurement. *Decision Sciences*, 863-874.
- The Economist. (2011). China's population: The most surprising demographic crisis. 2011.
- Tung, F., Chang, S., & Chou, C. (2008). An extension of trust and TAM model with IDT in the adoption of the electronic logistics information system in HIS in the medical industry. *International Journal of Medical Informatics*, 324-335.
- United Nations Population Fund and International Helpage. (2012). *Ageing in the Twenty-First Century: A Celebration and A Challenge*. New York, London: United Nations Population Fund and HelpAge International.
- Venkatesh, V. (2000). Determinants of Perceived Ease of Use Integrating Control, Intrinsic Motivation, And Emotion into the Technology Acceptance Model. *Information Systems Research*, 342-365.
- Venkatesh, V., & Davis, F. (2000). A Theoretical Extension of the Technology Acceptance Model: Four Longitudinal Field Studies. *Management Science*, 186-204.
- Venkatesh, V., & Davis, F. (2000). A Theoretical Extension of the Technology Acceptance Model: Four Longitudinal Field Studies. *Management Science*, 186-204.
- Venkatesh, V., Morris, M., Davis, G., & Davis, F. (2003). User Acceptance of Information Technology: Toward a Unified View. *MIS Quarterly*, 425-478.
- Venkatesh, V., Thong, J., & Xu, X. (2012). Consumer Acceptance and Use of Information Technology: Extending the Unified Theory of Acceptance and Use of Technology. *MIS Quarterly*, 157-178.
- Versteeg, M. (2018). *7 voordelen van het Omaha System*. (Vilans) Retrieved February 8, 2018, from www.vilans.nl: <https://www.vilans.nl/artikelen/de-7-voordelen-van-het-omaha-system>
- Xu, Q., & Chow, J. (2011). Exploring the community-based service delivery model: Elderly care in China. *54*(3).
- Yi, M., Jackson, J., & Park, J. (2006). Understanding information technology acceptance by individual professionals: Toward an integrative view. *Information & Management*, 350-363.
- Zhang, H., Cocosila, M., & Archer, N. (2010). Factors of Adoption of Mobile Information Technology by Homecare Nurses: A technology Acceptance Model 2 Approach. *Computers, Informatics, Nursing*, 49-56.

Appendices

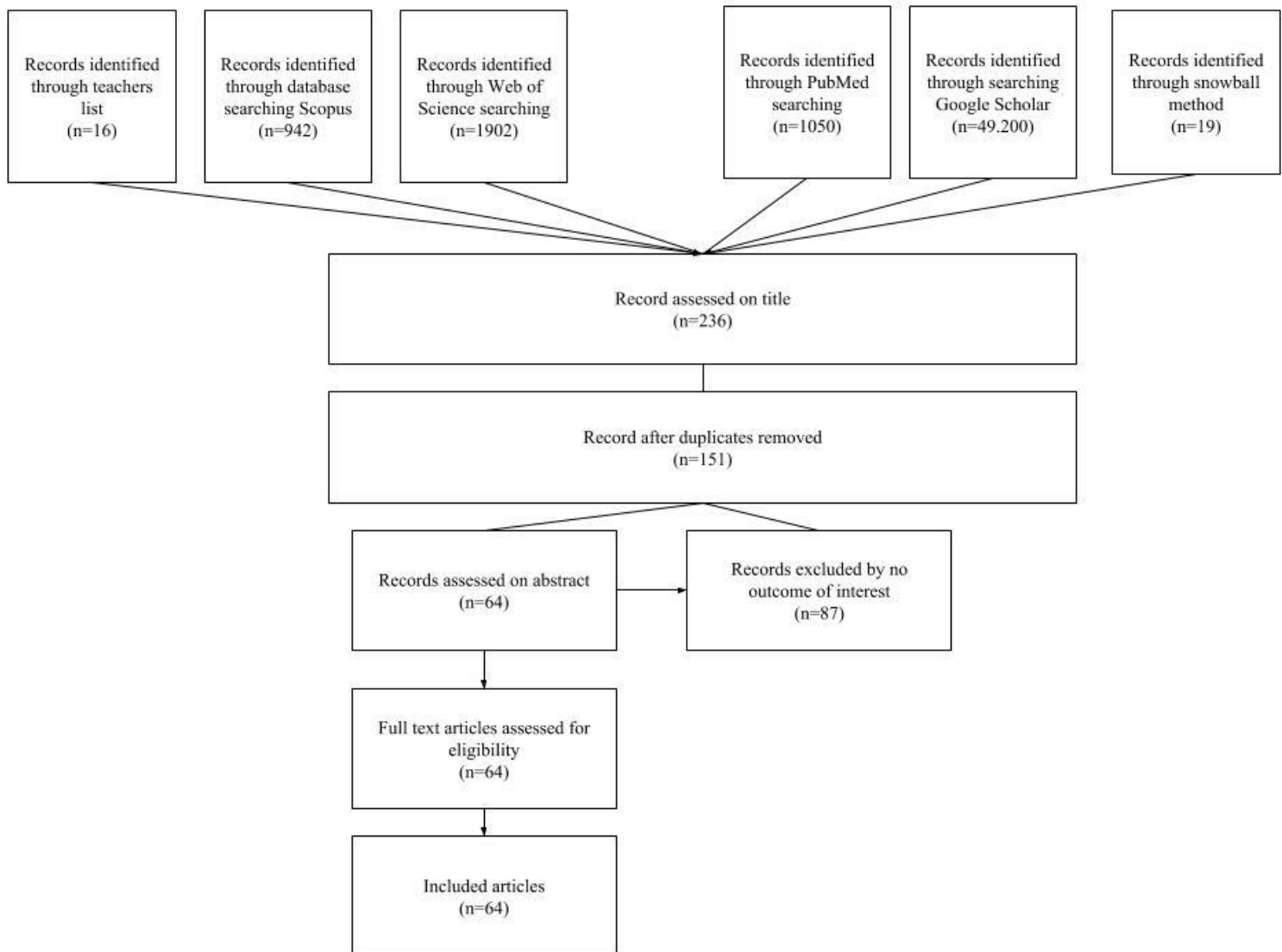
Appendix 1: Operationalization variables

Concept	Definition	Relation to other concepts	Hypothesis	Authors
Perceived behavioural control	The perceived ease or difficulty of performing the behaviour.	Significant effect on the perceived usefulness and the perceived ease of use of a technology.	When working with the Omaha technology is perceived easy, health professionals will perceive the system as more useful and easier to use.	(Sezgin & Ozkan-Yildirim, 2016) (Venkatesh, Thong, & Xu, 2012)
System factors (technological equipment, infrastructure, information quality, and technical support)	The degree to which an individual believes that a technical infrastructure exists to support use of the system.	System factors have a significant effect on the intention to use a technology.	When health professionals are satisfied with the Omaha system, their willingness to use the system is higher.	(Sezgin & Ozkan-Yildirim, 2016) (DeLone & McLean, 1992) (Pai & Huang, 2011) (Lu, Hsiao, & Chen, 2012) (Hsu & Wu, 2017) (Sharifian, Askarian, Nematollahi, & Farhadi, 2014)
Human characteristics (individual's computer competency, gender, and character)	The level of confidence that comes from users' experiences with the system.	Significantly influences the perceived ease of use of a technology.	When the level of confidence of health professionals with the Omaha technology is higher, their perceived ease of use of the technology will also be higher.	(Chen, Yang, Tang, Huang, & Yu, 2008) (Strudwick & McGillis Hall, 2015) (Handayani, et al., 2017)
Self-efficacy	People's judgement of their capabilities to organize and execute courses of action	Self-efficacy influences the intention to use a technology.	When the self-efficacy of health professionals is promoted, the behaviour intention	(Gredler & Schwartz, 1997) (Hsieh, Kuo, Wang, Chuang, & Tsai, 2016)

	required to use a technology.		to use the technology will increase.	(Handayani, et al., 2017)
Attitude towards using	A potential user's overall attitude toward using the technology.	Attitude towards using is influenced by the perceived usefulness and the perceived ease of use of a technology. This concept influences the intention to use a technology.	When the attitude towards using the Omaha technology of health professionals is high, their intention to use the system will also be higher.	(Ketikidis, Dimitrovski, Lazuras, & Bath, 2012) (Davis F. , 1985) (Escobar-Rodriguez & Mercedes Romero-Alonso, 2013) (Park & Chen, 2007)
Social factors (image, subjective norm, and voluntariness)	Social forces affecting an individual's perception regarding the opportunity to accept a new technology.	Social factors predict the intention to use a technology.	When health professionals score high on social factors, their intention to use the Omaha technology will also be higher.	(Venkatesh & Davis, 2000) (Al-Jumeily, Hussain, & Crate, 2014) (Okazi, Castaneda, Sanz, & Henseler, 2012) (Sharifian, Askarian, Nematolahi, & Farhadi, 2014) (Ifinedo, 2012) (Moore & Benbasat, 1991)
Organizational support (training, management support, and information)	Organizational factors affecting an individual's perception regarding the opportunity to accept a new technology.	Significantly influences the concepts perceived ease of use and perceived usefulness.	When health professionals experience organizational support, they will perceive the Omaha technology as easier to use and more useful.	(Handayani, et al., 2017) (Ifinedo, 2012) (Hsiao & Chen, 2011) (Escobar-Rodriguez & Mercedes Romero-Alonso, 2013)
Trust	The willingness of a party to be vulnerable to the actions of another party based on the	Positive influence on the intention to use a technology.	When health professionals experience trust, they are more willing to use the Omaha technology.	(Mayer, Davis, & Schoorman, 1995) (Tung, Chang, & Chou, 2008)

	expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party.			(Beldad & Hegner, 2017)
Relevance to profession	An individual's perception regarding the degree to which the technology is applicable for the job.	Significant effect on the perceived usefulness.	The more health professionals know about the relevance of the Omaha system to their profession, the more they are likely to accept that system.	(Venkatesh & Davis, 2000) (Ketikidis, Dimitrovski, Lazuras, & Bath, 2012)
Personal innovativeness	The willingness of an individual to try out any new information technology.	Influences the perceived ease of use of a technology.	The higher someone's level of personal innovativeness, the higher the perceived ease of use of the Omaha technology	(Agarwal & Prasad, 1998)

Appendix 2 Search strategy



Appendix 3 Table of constructs and items

Construct	Item	Authors
Intention to use	In the future, I plan to use the Omaha system.	(Ajzen, 2006)
Intention to use	In the future, I expect to use the Omaha system.	(Ajzen, 2006)
Intention to use	In the future, I intend to use the Omaha system.	(Ajzen, 2006)
Intention to use	I would recommend the use of the Omaha system to other people.	(Ajzen, 2006)
Perceived usefulness	The Omaha system is useful for my job.	(Sezgin & Ozkan-Yildirim, 2016)
Perceived usefulness	Using the Omaha system enhances my effectiveness on my job.	(Sezgin & Ozkan-Yildirim, 2016) (Davis F. , A technology acceptance model for empirically testing new end-user information systems: theory and results, 1985)
Perceived usefulness	Using the Omaha system helps to complete my duties successfully.	(Sezgin & Ozkan-Yildirim, 2016)
Perceived usefulness	Using the Omaha system helps to do my job easily.	(Sezgin & Ozkan-Yildirim, 2016) (Davis F. , 1985)
Perceived usefulness	In general, new technology is useful for my profession in elderly care.	(Sezgin & Ozkan-Yildirim, 2016)
Perceived ease of use	It is easy to become skilful in using the Omaha system.	(Sezgin & Ozkan-Yildirim, 2016)
Perceived ease of use	I find it easy to get the Omaha system to do what I want it to do.	(Davis F. , 1989)

Perceived ease of use	My interaction with the Omaha system is clear and understandable.	(Davis F. , 1989) (Sezgin & Ozkan-Yildirim, 2016)
Perceived ease of use	Using the Omaha system does not require a lot of mental effort.	(Sezgin & Ozkan-Yildirim, 2016)
Perceived ease of use	I find the option to rate a client in the Omaha system useful.	(Keijzer, 2018)
Perceived ease of use	In general, new technology is easy to use in my profession in elderly care.	Dr. Minna van Gerven
Perceived behavioural control	I have the skills to use the Omaha system.	(Sezgin & Ozkan-Yildirim, 2016)
Perceived behavioural control	I have the resources to use the Omaha system (computer, internet connection).	(Sezgin & Ozkan-Yildirim, 2016)
Perceived behavioural control	I am able to use all necessary functions on the Omaha system very well.	(Sezgin & Ozkan-Yildirim, 2016)
Perceived behavioural control	I have the knowledge to use the Omaha system.	(Sezgin & Ozkan-Yildirim, 2016)
System factors	The Omaha system includes all necessary functions that are needed to use in order to fulfil my duties.	(Sezgin & Ozkan-Yildirim, 2016)
System factors	The Omaha system works flawlessly.	(Sezgin & Ozkan-Yildirim, 2016)
System factors	When facing difficulty, service people from the information centre (or my colleague) can help me solve the problem.	(Pai & Huang, 2011)
System factors	The information covered in the Omaha system meets my needs.	(Pai & Huang, 2011)
Human characteristics	Using the Omaha system fits well with the way I like to work.	(Oh, Ahn, & Kim, 2003)
Human characteristics	Using the Omaha system is fun.	(Venkatesh, Thong, & Xu, 2012)

Human characteristics	The Omaha system is somewhat intimidating for me.	(Venkatesh, Thong, & Xu, 2012)
Human characteristics	It scares me to think that I could lose a lot of information (or make a mistake by) using the Omaha system by hitting the wrong key.	(Venkatesh, Thong, & Xu, 2012)
Open	What is your previous professional experience related with information technologies?	Based on the semi-structured interviews
Self-efficacy	I feel confident about using the Omaha system.	(Gredler & Schwartz, 1997)
Self-efficacy	I feel confident I know how to learn advanced skills related to using the Omaha system.	(Gredler & Schwartz, 1997)
Self-efficacy	I feel confident understanding terms/words relating to using the Omaha system.	(Gredler & Schwartz, 1997)
Self-efficacy	When having problems related to the use of the Omaha system I know I could work them out.	(Gredler & Schwartz, 1997)
Attitude towards using	My willingness to use the Omaha system is high.	(Hsieh, Kuo, Wang, Chuang, & Tsai, 2016)
Attitude towards using	I would like to continue to use the Omaha system.	(Hsieh, Kuo, Wang, Chuang, & Tsai, 2016)
Attitude towards using	Using the Omaha system is beneficial for me.	(King & He, 2006)
Attitude towards using	Using the Omaha system is beneficial for the clients.	(King & He, 2006)
Social factors	People who are important in assessing my work think that I should use the Omaha system.	(Chau & Hu, 2002)
Social factors	People who are important to my health-care services think that I should use the Omaha system.	(Chau & Hu, 2002)
Social factors	In general, my society thinks that I should use the Omaha system.	(Chau & Hu, 2002)

Social factors	People in my organization who use the Omaha system have more prestige than who do not.	(Venkatesh & Davis, 2000)
Organizational support	Specialized instruction concerning the Omaha system was available for me.	(Venkatesh, Morris, Davis, & Davis, 2003)
Organizational support	The kind of training provided to me about the Omaha system was complete.	(Escobar-Rodriguez & Mercedes Romero-Alonso, 2013)
Organizational support	Management provides a reasonable transition period from the old system to the new system.	(Handayani, et al., 2017)
Organizational support	Management provides an adequate working environment, such as a fun workplace, a sufficient number of computers, appropriate workload etc.	(Handayani, et al., 2017)
Trust	I believe the Omaha system can help to fulfil my work.	(Tung, Chang, & Chou, 2008)
Trust	I believe the Omaha system will have its desired effects.	(Tung, Chang, & Chou, 2008)
Trust	In general, I believe the technology has desired effects to home care.	(Tung, Chang, & Chou, 2008)
Relevance to profession	In my job, the usage of the Omaha system is important.	(Zhang, Cocosila, & Archer, 2010) (Venkatesh & Davis, 2000)
Relevance to profession	In my job, the usage of the Omaha system is relevant.	(Zhang, Cocosila, & Archer, 2010) (Venkatesh & Davis, 2000)
Innovativeness	If I heard about a new information technology, I would look for ways to experiment with it.	(Yi, Jackson, & Park, 2006)
Innovativeness	Among my peers, I am usually the first to try out new information technologies.	(Yi, Jackson, & Park, 2006)

Innovativeness	I like to experiment with new information technologies.	(Yi, Jackson, & Park, 2006)
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Appendix 4 Survey

For some time, the Omaha system has been used at Buurtzorg Nederland. Currently the Omaha system is also being implemented at Buurtzorg China. This survey is a part of an important research project at the University of Twente. We are studying the experiences of health care professionals with this system. I am Jolanda Dekker, a student of Health Sciences programme at the University and I have developed this survey as a part of my Master thesis project.

The survey consists of 79 questions and will **only take 25 minutes of your time**. It has four parts. The first part consists of some questions relating to you as a health care professional. The second part contains questions about your experiences with the Buurtzorg model. The third part consists of 52 questions about your experiences of and thoughts about the use of the Omaha system. The fourth part contains questions that allow us to compare cultural differences in the use of and experiences with the Omaha system between the Netherlands and China. For each question you can choose one answer from multiple options, unless stated otherwise. The questionnaire contains one open question.

The given answers will be treated with the strictest confidentiality and the data will remain anonymous. Only the researchers of this research project will have access to the results and the results of this survey will be utilised for the purpose of a scientific research. After the research period, you can request this report and the results will help to improve the use of the Omaha system. A short summary of the findings will also be added to the Buurtzorg intranet site.

As a student of the health sciences program at the University of Twente and a healthcare professional myself, I would like to thank you in advance for your participation in this research. I appreciate your time and effort put in this survey.

For additional questions you can contact me (Jolanda Dekker), or Dr. Minna van Gerven, the academic supervisor of this research project.

The survey starts on the next page.

Part 1: General questions

First you will be asked some personal information, please fill in the box that suits you best.

1. Where do you work?

- Buurtzorg Nederland
- Buurtzorg China

2. What is your gender?

- Male
- Female

3. What is your age?

- Younger than 20 years
- 20-24 years
- 25-34 years
- 35-44 years
- 45-54 years
- 55-64 years
- 65 years (or older)

4. What is your highest educational level? (In Dutch: Geen, Voortgezet onderwijs MAVO/HAVO, Voortgezet onderwijs VWO/gymnasium, MBO, HBO, Universitaire master, Postacademische master)

- None
- Primary School
- Secondary School
- Post-secondary School
- Bachelor's Degree
- Master's Degree
- Post-academic School

5. What is your current position in the organisation? (In Dutch: District nurse, Nurse in the neighbourhood, Caregiver)

- Nurse

- Assistant nurse
- Manager
- Something else, namely ...

6. How long have you been working for Buurtzorg?

- Less than 3 months
- 3 to 6 months
- 6 months to a year
- 1-2 years
- 3-5 years
- 5-10 years
- Longer than 10 years

7. Since when have you been using the Omaha system?

- Less than 1 month
- 1 to 3 months
- 3 to 6 months
- 6 months to a year
- 1-2 years
- Longer than 2 years

8. What is your actual frequency of use of the Omaha system (choose the most appropriate)?

- Every day, on average times a day
- Weekly, on average times a week
- Monthly, on average times a month
- Have not used the system

9. How many hours do you work in a week?

- Less than 8 hours
- 9-16 hours
- 17-25 hours
- 25-35 hours
- 36 hours or more

Part 2: Questions about the Buurtzorg model (self-steering teams of professional nurses providing home care)

Now, you will be asked some questions about the Buurtzorg model, please fill in the box that suits you best.

1. The Buurtzorg's home care model fits well with my country's vision of elderly care.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

2. The Buurtzorg's home care model fits well with my clients' vision of care.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

3. The Buurtzorg's home care model fits well with my clients' family's vision of care.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

4. I believe that using the Buurtzorg work model (self-steering teams of nurses) is useful for my country's elderly care.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

5. Using the Buurtzorg work model (self-steering teams of nurses) is easy for me.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

6. Using the Buurtzorg work model (self-steering teams of nurses) is important for me.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

7. Making decisions without managers is easy for me.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

8. Including family and neighbourhood in the care provision is easy for me.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

9. Including other health professionals in the care provision is easy for me.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

Part 3: Questions about the use of the Omaha system

Now, you will be asked some questions about your intention to use the Omaha system, and the usefulness and the ease of use of the Omaha system, please fill in the box that suits you best.

Your intention to use the Omaha system

1. In the future, I plan to use the Omaha system.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree
- I already use the Omaha system

2. In the future, I expect to use the Omaha system.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

3. In the future, I intend to use the Omaha system (This question is not part of the Dutch survey).

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

4. I would recommend the use of the Omaha system to other people.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

The usefulness of the Omaha system

5. The Omaha system is useful for my job.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

6. Using the Omaha system enhances my effectiveness on my job.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

7. Using the Omaha system helps to complete my duties successfully.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

8. Using the Omaha system helps to do my job easily.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

9. In general, new technology is useful for my profession in elderly care.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

The ease of use of the Omaha system

10. It is easy to become skilful in using the Omaha system.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

11. I find it easy to get the Omaha system to do what I want it to do.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

12. My interaction with the Omaha system is clear and understandable.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

13. Using the Omaha system does not require a lot of mental effort.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

14. I find the option to rate a client in the Omaha system useful.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

15. In general, new technology is easy to use in my profession in elderly care.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

Now, you will be asked some questions about the necessary skills to use the Omaha System, and about the system factors that influence the use of the system, please fill in the box that suits you best.

Necessary skills to use the Omaha system

16. I have the skills to use the Omaha system.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

17. I have the resources to use the Omaha system (computer, internet connection).

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

18. I am able to use all necessary functions on the Omaha system very well.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

19. I have the knowledge to use the Omaha system.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

System factors that influence your use of the Omaha system

20. The Omaha system includes all necessary functions that are needed to use in order to fulfil my duties.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

21. The Omaha system works flawlessly.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

22. When facing difficulty, service people from the information centre (or my colleague) can help me solve the problem.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

23. The information covered in the Omaha system meets my needs.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

Now, you will be asked some questions about your attitude towards the use of the Omaha System, please fill in the box that suits you best.

Your attitude towards the use of the Omaha system

24. Using the Omaha system fits well with the way I like to work.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

25. Using the Omaha system is fun.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

26. The Omaha system is somewhat intimidating for me.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

27. It scares me to think that I could lose a lot of information (or make a mistake by) using the Omaha system by hitting the wrong key.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

28. What is your previous professional experience related with information technologies?

.....

29. I feel confident about using the Omaha system.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

30. I feel confident I know how to learn advanced skills related to using the Omaha system.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

31. I feel confident understanding terms/words relating to using the Omaha system.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

32. When having problems related to the use of the Omaha system I know I could work them out.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

33. My willingness to use the Omaha system is high.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

34. I would like to continue to use the Omaha system.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

35. Using the Omaha system is beneficial for me.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

36. Using the Omaha system is beneficial for the clients.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

Now, you will be asked some questions about social and organizational factors that can influence your use of the Omaha system, please fill in the box that suits you best.

Social factors that influence your use of the Omaha system

37. People who are important in assessing my work think that I should use the Omaha system.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

38. People who are important to my health-care services think that I should use the Omaha system.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

39. In general, my society thinks that I should use the Omaha system.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

40. People in my organization who use the Omaha system have more prestige than who do not.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

Organizational support that influence your use of the Omaha system

41. Specialized instruction concerning the Omaha system was available for me.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

42. The kind of training provided to me about the Omaha system was complete.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

43. Management provides a reasonable transition period from the old system to the new system.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

44. Management provides an adequate working environment, such as a fun workplace, a sufficient number of computers, appropriate workload etc.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

Now, you will be asked some questions about your experience with the Omaha system, and the relevance of the system for your profession, please fill in the box that suits you best.

Your experience with the Omaha System

45. I believe the Omaha System can help to fulfil my work.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

46. I believe the Omaha System will have its desired effects.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

47. In general, I believe the technology has desired effects to home care.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

The relevance of the Omaha System to your profession

48. In my job, the usage of the Omaha System is important.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

49. In my job, the usage of the Omaha system is relevant.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

50. If I heard about a new information technology, I would look for ways to experiment with it.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

51. Among my peers, I am usually the first to try out new information technologies.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

52. I like to experiment with new information technologies.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

Part 4: Final general questions for comparative analysis on cultural differences

At last you will be asked some questions on cultural differences, please fill in the box that suits you best.

1. Being accepted as member of a group is more important than having autonomy and independence.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

2. Group success is more important than individual success.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

3. Individual rewards are not as important as group welfare.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

4. Order and structure are very important in a work environment.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

5. It's better to have a bad situation that you know about than that you have an uncertain situation which might be better.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

6. People should avoid making changes because things could get worse.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

7. Traditional values are important for me.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

8. I plan for the long-term.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

9. Respect for tradition is important for me.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

10. It is preferable to have a man in a high-level position rather than a woman.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

11. Women do not value recognition and promotion in their work as much as men do.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

12. It is more important for men to have a professional career than it is for women to have one.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

13. Managers should make most decisions without consulting subordinates.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

14. Employees should not question their manager's decisions.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

15. Managers should not ask subordinates for advice, because they might appear less powerful.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

You have reached the end of the questionnaire. I greatly appreciate that you took the time to complete this survey. You can contact j.j.dekker@student.utwente.nl if you have questions about the research or if you need additional information.

Appendix 5 Interviews

Interview with a nurse from Buurtzorg Enschede in the Netherlands

R: Respondent (nurse 1)

I: Interviewer

I: Kun je me laten zien hoe het Omaha systeem werkt?

R: Systeem uitgebreid laten zien op de iPad.

I: Uit welke onderdelen (gebieden) bestaat het systeem?

R: Het Omaha systeem bestaat uit vier domeinen (omgevings-domein, psychosociaal domein, fysiologisch domein en gezondheid gerelateerd gedrags-domein). Daarnaast bestaan die vier domeinen samen uit 42 verschillende gebieden (zie afbeelding). Tijdens elk assessment worden sowieso alle vier domeinen gebruikt. Sommige gebieden gebruik je minder omdat daar ook minder te melden is. Bijvoorbeeld groei en ontwikkeling, verwaarlozing, zwangerschap etc. Maar in principe loop je alle gebieden wel even bij langs. Vervolgens geef je scores aan de hand van status, kennis en gedrag (score 1-5; 1 is extreme signalen/geen kennis/niet passend gedrag en 5 is geen signalen/uitstekende kennis/passend gedrag)

I: Hoe bevalt Omaha jou als verpleegkundige?

R: Het werken met het Omaha systeem bevalt mij heel erg goed. Hiervoor werkten we met papieren dossiers en nu is alles (behalve de medicijnlijsten) digitaal. Dit is veel overzichtelijker en het systeem geeft hele handige meldingen. Bijv. als er weer een evaluatiemoment moet plaatsvinden of als de cliënt bijzonderheden heeft (zoals diabetes of een allergie). Daarnaast kun je je nu voor je route thuis al even inlezen en hoef je niet bij de cliënt eerst de map te lezen voordat je daadwerkelijk met de zorg kunt beginnen.

I: Heb je een training gehad?

R: Nee, ik moest het systeem mezelf eigen maken. Hierbij heb ik soms wel met een collega meegekeken. Maar als je er een tijdje mee werkt dan begrijp je het wel.

I: Is het gemakkelijk (gebruiksvriendelijk) te gebruiken?

R: Ja ik vind van wel. Het systeem werkt heel snel en het is erg overzichtelijk. Alles staat er duidelijk in en je kunt echt alles over de cliënt opzoeken of teruglezen.

I: In je dagelijks gebruik, wat vind jij het beste en het minst goede van het systeem (voorbeelden)?

R: Ik vind het fijn dat ik gegevens heel makkelijk in kan voeren. Als iemand bijvoorbeeld diabetes is, dan kan ik al zijn curves in een apart venster invoeren en dan zie ik meteen of er

veranderingen zijn en wat de trends van de afgelopen keren zijn. Daarnaast kan ik alle rapportages makkelijk inzien. Wat ik ook fijn vind, maar dat ligt ook aan Buurtzorg, is dat ik als niveau 4 verpleegkundige ook assessments mag afnemen (niveau 3 IG mag dat trouwens ook). Op die manier kan ik ook zelf de zorg aanpassen wanneer dat nodig is. Wat ik minder fijn vind, is dat sommige collega's niet altijd op tijd wijzigingen invoeren. Hierdoor loop je soms achter de feiten aan. Maar dit was bij de papieren dossiers ook al een probleem.

I: Is het systeem volgens jou volledig?

R: Ja, er ik mis niks. Wat ik nog wel fijn zou vinden, is als de medicatielijsten ook digitaal zijn en je digitaal kunt aftekenen. Nu is het nog heel veel werk om dat allemaal in te scannen.

I: Wat vind je van de instructies van het systeem?

R: Ik gebruik de instructies niet.

I: Moet je vaak vragen stellen over het systeem? Hoe vaak en bij wie kan jij terecht? Kun je ergens terecht met op- of aanmerkingen m.b.t. het systeem?

R: Ik had in het begin wel wat vragen, toen ik het systeem nog niet zo goed kende. Dan vroeg ik dat aan collega's uit mijn team. Nu heb ik niet zoveel vragen meer. Als ik een vraag heb dan stel ik die aan iemand uit mijn team. Op- of aanmerkingen heb ik niet, dus ik weet ook niet waar ik daarmee terecht kan.

I: Wat vind je van de scores die je moet invullen? Zeggen die ook daadwerkelijk wat je wil zeggen?

R: Ik vind het soms lastig om de scores in te vullen. Er wordt niet specifiek op de gebieden gerapporteerd, maar meer in het algemeen en elke collega scoort ook weer anders. Een score als: passend gedrag is soms best lastig. Wanneer is iets "passend"?

I: Betrek je de cliënt ook bij het gebruik van dit systeem? Zien de cliënten of hun familie soms problemen met het systeem?

R: Bij één cliënt kan de familie nu ook zelf via een bepaalde pagina wat dingen uit het dossier bekijken. Dat is een proef. Verder kunnen cliënten er niet bij. De cliënt betrek ik bij het systeem wanneer ik het assessment afneem, het assessment aanpas of een evaluatiegesprek houdt. Verder wordt de cliënt er niet bij betrokken. De familie wordt er verder ook niet bij betrokken. Ik weet niet of zij problemen met het systeem hebben. In dat opzicht was een papieren versie wel fijn want dat kon de familie altijd inzien. Om nu met de familie te communiceren gebruiken we vaak nog wel de papieren map (iedere cliënt heeft nog een papieren map met hierin zijn medicatielijsten).

I: Betrek je de collega's ook bij het gebruik van dit systeem?

R: Je leest elkaars rapportages, in die zin betrek je elkaar erbij. Verder ben je verantwoordelijk voor je eigen cliënten. Als ik iets niet begrijp dan ga ik wel naar een collega. Je kunt bijvoorbeeld ook een wonddossier van iemand bijhouden. Dat heb ik nog niet zo vaak gedaan, dus dan vraag ik hulp en betrek ik een collega erbij.

I: Hoe ziet je leidinggevende (organisatie) het Omaha systeem? Waarom wil Buurtzorg eigenlijk dat jij het systeem gebruikt?

R: Ik weet niet precies waarom we juist dit systeem hebben. Ik vind het wel mooier dan de gezondheidspatronen van Gordon, omdat het veel uitgebreider is. Misschien willen ze het omdat het voor meer eenheid zorgt? En natuurlijk omdat het digitaal is.

I: Hoe vind jij de rol van het Omaha systeem in je dagelijks werk? Hoe zou je het beschrijven? Wat is de toegevoegde waarde van de technologie voor jou?

R: Ik ben heel blij met het systeem. Liefst zou ik willen dat alles digitaal gaat. Zoals het aftekenen van medicatie en het dubbelchecken van medicatie. Of het digitaal ondertekenen van zorgplannen. Het inscannen kost namelijk heel veel tijd. De toegevoegde waarde van de technologie is voor mij dat ik bij de cliënt me echt kan richten op de zorg en dat ik me thuis al kan inlezen. Ik ben op de hoogte als ik bij iemand de kamer binnenstap. Verder gaat het veel sneller en door de herinneringen in het systeem vergeet je minder dingen. Daarnaast zijn de assessments vollediger (dan bijvoorbeeld de gezondheidspatronen van Gordon), vanwege de vele gebieden die het systeem kent.

I: Wat vind jij over het algemeen van het gebruik van technologie in je vak? Denk jij dat collega's ook zo denken?

R: Ik ben heel positief over het gebruik van technologie en ik denk mijn collega's ook.

I: Hoe zie je de ontwikkelingen voor de toekomst: wat is de rol van technologie straks. Wat zijn de mogelijkheden/gevaren. Hoe zie je dit als zorgprofessional?

R: Ik denk dat er in de toekomst nog veel meer gebruik van technologie zal worden gemaakt. Het zou mooi zijn om op een gegeven moment ook een soort portaal voor cliënten en familieleden te hebben, zodat zij ook informatie kunnen inzien en zodat je met elkaar kan communiceren. Daarnaast zou het fijn zijn als het aftekenen van medicatie en het ondertekenen van zorgplannen ook digitaal gaat. Er zijn al organisaties waarbij dit nu al gebeurt. Ik sta open voor alle ontwikkelingen op het gebied van technologie en ik vind het ook goed dat de zorg met zijn tijd meegaat. Ik zie gevaren m.b.t. de privacy van gegevens van cliënten.

Interview about the Omaha technology with a specialist

R: Respondent (Omaha specialist)

I: Interviewer

I: Kunt u mij iets vertellen over het proces van invoering van het Omaha systeem binnen Buurtzorg? Bijvoorbeeld: op wiens initiatief (management, werkvloer, wet-regelgeving etc.)?

R: Buurtzorg was ten opzichte van andere organisaties relatief vroeg met het invoeren van een digitaal classificatiesysteem. Buurtzorg management vond het zelf al heel erg belangrijk om met zo'n systeem te gaan werken. Pas later (2015) zijn daar vanuit de wet- en regelgeving afspraken over gemaakt, dat eigenlijk alle zorgorganisaties daar gebruik van zouden moeten kunnen maken. Dan niet zo specifiek het Omaha Systeem, maar een classificatiesysteem. Bijvoorbeeld Nanda is ook prima. Maar om ook zo te zorgen dat op het vlak van kwaliteit een enorme slag gemaakt kon worden.

I: Wat waren de grootse uitdagingen tijdens de invoering? Doorvragen: Waren ze intern (binnen Buurtzorg, bij wie dan) of extern (met de klanten, ziektekostenverzekeraars, gemeenten)?

R: Ik denk dat bij de invoering verpleegkundigen zich heel erg gesteund voelden met dit classificatiesysteem. Omdat ze eigenlijk nu een logisch model kregen waarmee ze hun zorg konden duiden en logisch konden vastleggen. Maar het vraagt wel om een stuk toelichting en uitleg, omdat het werken met het Omaha Systeem heel erg het methodisch denken stimuleert, maar er zitten ook onderdelen in die wel wat aandacht vragen. Als je wel wil dat het goed wordt gebruikt, dan moet je dat vertellen en uitleggen, omdat ze er anders niet altijd het nut van inzien. Het is heel goed ontvangen, mensen waren er blij mee, maar het blijft iets dat je aandacht moet geven.

I: Uit welke gebieden/onderdelen bestaat het systeem van Buurtzorg?

R: 42 gebieden, 4 domeinen en 75 actievlakken.

I: Waarin verschilt het Omaha systeem van Buurtzorg met andere Omaha systemen?

R: Het Omaha Systeem is een vast classificatiesysteem. Het is wat het is. Bij Buurtzorg, maar ook bij andere organisaties in Nederland, zijn geen aanpassingen in het systeem gemaakt. Inmiddels is Vilans de uitvoeringsorganisatie van het Omaha Systeem, zij bewaken het Omaha Systeem. Dat betekent dat er aan alle termen en alle onderdelen van het Omaha Systeem geen wijzigingen mogen worden aangebracht. Als dat wel gebeurt dan mag je het geen Omaha Systeem meer noemen. Voor al onze klanten die van deze software, die gebruiken het zuivere Omaha Systeem.

I: Wat werd er bij Buurtzorg gemist?

R: Tot nu toe wordt er nog niks aan het systeem gemist. Het Omaha Systeem bestaat al jaren uit deze domeinen en gebieden, in tegenstelling tot andere classificatiesystemen bijv. Nanda die hebben volgens mij eens in de paar jaar dat er een paar termen af gaan of dat er wat bij komen. Dus dat laat ook wel zien dat het een heel compleet systeem is.

I: Verschilt de lay-out van Omaha Buurtzorg met andere organisaties?

R: De lay-out van het Omaha Systeem is voor alle organisaties hetzelfde. De lay-out van de ‘werkomgeving’ van Buurtzorg verschilt natuurlijk wel van andere organisaties (denk aan kleur, pagina’s, inhoud etc.). Maar het Omaha Systeem wordt overal met dezelfde lay-out geïmplementeerd. Het is echt een standaard applicatie.

I: Hoe verschilt het Omaha systeem van Buurtzorg met het buitenland? Zijn er verschillen binnen Europa, maar ook tussen Europa en Azië, Amerika?

R: Er zijn geen verschillen (alleen natuurlijk de taal).

I: Hoe verschilt het Omaha systeem in China (van Buurtzorg) t.o.v. het systeem bij Buurtzorg Nederland?

R: We hebben voor het buitenland (alle landen buiten Nederland) is een buitenlandse module gebouwd, die inmiddels in meerdere talen is vertaald, maar deze module ziet er voor alle landen in het buitenland ook hetzelfde uit.

I: Zijn er bepaalde aanpassingen voor China gemaakt? Indien ja, kunt u mij meer hierover vertellen?

R: Nee, er zijn geen aanpassingen gemaakt. Het mooie hiervan is dat overal dezelfde ‘zorgtaal’ gebruikt wordt. Het vertalen dat vraagt soms wel heel veel aandacht. Voor Nederland heeft dat ook best een hele tijd geduurd. Om alle termen uit het Omaha Systeem goed te duiden naar de Nederlandse taal. Dat is best een zoektocht geweest. Die ervaringen hebben we ook wel met het buitenland, dat dat ook wel veel tijd kost. Dat vraagt behoorlijk wat aandacht. Een voorbeeld is ‘communicatie met maatschappelijke voorzieningen’ (een van de 42 gebieden), nou dat is soms best lastig te duiden, wat wordt daar dan precies mee bedoeld? Wat zijn maatschappelijke voorzieningen in andere landen? Soms heeft dat meer toelichting nodig omdat bijvoorbeeld het maatschappelijk systeem heel anders is in het buitenland.

I: Hoe gebruiksvriendelijk wordt OMAHA Buurtzorg door de professionals ervaren?

R: De professionals ervaren het systeem als goed. In Nederland merkten we eigenlijk heel snel dat mensen daar heel goed gebruik van maakten. We hebben toevallig de afgelopen twee weken de Buurtzorgdagen gehad en toen was het Omaha Systeem ook een workshop. Ik heb

dat samen met een collega vanuit Buurtzorg gegeven, daar viel wel op dat het scoren (het Omaha Systeem werkt met een huidige situatie/voortgang score op status, kennis en gedrag) wel als ingewikkeld wordt ervaren. Mensen hebben toch een beetje het gevoel dat ze de cliënt een cijfer moeten geven en hoe objectief is dat nou. Dan helpt dat wel om mensen daar toelichting over te geven. Want het is wel heel belangrijk dat dit gebeurt, want als je van grote groepen cliënten scores hebt verzameld, dan kun je gaan bepalen of de dingen die we doen ook helpen, of geven die eigenlijk vrij weinig resultaat. Daar kom je alleen maar achter, door goed gebruik te maken van die scores. Iedereen uit het zorgteam van Buurtzorg Nederland heeft altijd toegang tot alle zorginhoudelijke data, ze kunnen dus altijd zien welke gebieden het meest gebruikt worden. Wat wel een mooi voorbeeld is, is wondzorg. We kijken welke cliënten allemaal het gebied 'huid' hebben en wat de onderliggende signalen en symptomen zijn (want er hoeft niet altijd sprake te zijn van een wond). Dan focussen we specifiek op het signaal 'wond' of 'decubitus' en dan kijken we vervolgens van hoe lang hebben mensen een wond, wat is de doorlooptijd, welke acties worden daarop gezet. Dus we doen binnen Buurtzorg Nederland wel degelijk iets met de data die verzameld wordt door het Omaha Systeem. Uiteindelijk is Buurtzorg destijds gestart met het maken van een soort richtlijnen, dat als er sprake is van dementie, wat voor soort acties kun je dan het beste doen. En welke gebieden zijn er dan belangrijk om acties voor te maken. Inmiddels heeft Vilans dat overgenomen. Die zorgt ervoor dat die binnen Nederland, met een aantal zorgorganisaties bij elkaar gaat zitten en specifieke aandoeningen of kenmerken eruit pikt en daarvoor eigenlijk voorbeeld verpleegplannen maakt. Nou wat doen wij daarmee? Ecare automatiseert die voorbeeld verpleegplannen, op dit moment zijn wij in Nederland die dat zo doen. Andere softwareorganisaties maken wel gebruik van de voorbeeld zorgplannen, maar die hebben dat nog niet gedigitaliseerd. Daarmee kunnen verpleegkundigen dus ontzettend makkelijk, standaard acties kiezen die dus klaarblijkelijk goed werken. Dat is natuurlijk wel het mooie, als je al die data verzameld, dat je ook uiteindelijk kan komen tot acties waarvan eigenlijk al bewezen is dat ze goed werken. Dat is denk ik wel de kracht van het Omaha Systeem, dat het een systeem is waar je echt lering uit kan trekken. Het scheelt enorm veel tijd, maar je weet eigenlijk ook dat als wij het zo doen dan geeft dit het beste resultaat. Dus het verbetert zeer zeker de kwaliteit van zorg.

I: Wat zijn de grootse uitdagingen voor de verpleegsters/organisatie? Zijn ze van gebruiksvriendelijke aard, technische aard (i.v.m. privacy, sharing informatie, cyber security) of van menselijke aard (i.v.m. verpleegsters die het systeem niet willen/durven gebruiken, cliënten die hun gegevens niet willen geven)?

R: Het kost even tijd om het systeem eigen te maken. Er is wel geprobeerd om overal in het systeem uitleg in te bouwen. Dus gebieden worden heel goed uitgelegd met informatiebolletjes. Soms is het voor mij heel logisch, maar als je net gaat werken met het systeem, dan is dat niet zo logisch. Buurtzorg kent vanuit de basis het model dat als je komt werken bij Buurtzorg, dat je via online trainingen, via de leeromgeving en door je kennis te delen met collega's, dat je het je eigen maakt. Maar dan moet je je daar echt wel zelf in gaan verdiepen. Om je dat goed eigen te maken. Voor andere klanten geven we best wel heel veel training. Dat blijkt ook echt wel een hele prettige ondersteuning, naast de online educatie en de verdieping die mensen zelf moeten doen. Daar bieden ook wel hulpmiddelen bij aan (filmpjes, boek dat je kunt lezen, training van een hele dag). Maar bij Buurtzorg Nederland bieden ze alleen de online educatie en de kennis delen binnen het team. Maar in het buitenland hebben we er toch voor gekozen om er toch een online training aan toe te voegen. Dan heb ik werkelijk via een soort livestream contact met het team en dan geef ik echt live training. Dat is ook heel leuk. Dat hebben we inmiddels in Japan gedaan, in Korea, India en Duitsland. Maar Duitsland ben ik zelf naar toe geweest. Op dit moment is het zo dat cliënten altijd nog het papieren zorgplan in hun map hebben. Dat is niet veranderd. Inmiddels hebben we ook een cliëntportaal, dus ze kunnen ook het hele zorgplan digitaal zelf zien als ze inlog hebben op dit portaal. Maar wat eigenlijk het aardige is, is dat het Omaha Systeem gemaakt is ook ontzettend met de achterliggende gedachte, dat het eenvoudig en begrijpelijk en voor iedereen te snappen moet zijn. In eerste instantie moest het dus ook door de cliënt zelf te begrijpen zijn. Dus daar is heel erg goed naar gekeken, dat we geen gebruik maken van ingewikkelde medische terminologie. Dat maakte eigenlijk al gelijk dat de cliënt heel gemakkelijk meegenomen kan worden in dit plan. Dat wil niet zeggen, dat het nooit een keer toegelicht moet worden. Want sommige zaken zijn wel wat lastiger te begrijpen misschien voor cliënten. Maar over het algemeen denk ik dat we kunnen stellen dat het Omaha Systeem voor iedereen te begrijpen is. Dus de acceptatie door cliënten was denk ik vanaf het begin af aan ook al wel vrij groot. We hebben wel even moeten zoeken naar een goede vorm om het zorgplan ook in beeld te brengen voor ze. Omdat met name ook weer dat score-onderdeel, dat kan soms best confronterend zijn. Als de verpleegkundige vindt dat iemands kennis of gedrag misschien een 2 of een 3 is (score 1-5) en de cliënt er heel anders over denkt. Dat zijn wel zaken waar je over in gesprek moet gaan met de cliënt.

I: Waar hebben de professionals meeste problemen mee? Zijn dat zaken omtrent het systeem of juist zaken die niet direct met het systeem te maken hebben maar meer met organisationele factoren, inpassing in hun werkstructuur of tijdsdruk etc.

R: Zoals eerder genoemd vinden professionals het scoren binnen het systeem erg lastig. Verder is duurt het ook even om het systeem helemaal onder de knie te krijgen. Hierbij wordt echt wat eigen inzet verwacht.

I: Zijn er ook algemene problemen voor de organisatie?

R: Nee niet voor zover ik weet.

I: Hoe gaat het met ondersteuning bij deze problemen (training, ICT-services etc.)?

R: Als je een vraag hebt m.b.t. het Omaha Systeem (binnen Buurtzorg), dan is de eerste ring het team waarin je werkt. Dan ga je proberen het binnen je team op te lossen. Als je er dan samen niet uitkomt dan is er een expertteam waar je terecht kunt. Dat betekent dat er binnen Buurtzorg bepaalde mensen in het land zijn, die zich hebben gespecialiseerd in het Omaha Systeem. Die vinden het gewoon heel erg leuk om daar meer kennis over te hebben en die vinden het ook heel leuk om die kennis te delen. Dus via de leeromgeving, kun je zoeken naar een expert en je kunt die persoon dan benaderen. Dat is eigenlijk de weg binnen Buurtzorg Nederland. Ik word zelf ook wel eens gebeld, dus als mensen zoiets hebben van ik weet het echt niet, dan komt de vraag ook wel eens bij ons terecht. Voor het buitenland geldt dat we online trainingen geven, we geven informatie mee en op dit moment werken we eigenlijk met een model dat we training geven (2x). Dus één keer een theoretisch verhaal overbrengen, met daarbij een stukje knoppentraining. De tweede training daar gaan we eigenlijk direct de software in met een casus en dan laten we ze online de casus invoeren en daar sturen we eigenlijk continu bij als het nodig is, daar coachen we ze eigenlijk om een goed plan te maken. Na afloop wordt er ongeveer na 2/3 weken, is er nog een vraag- en antwoordsessie online en daar kunnen mensen vragen aan me stellen. We zien vooral in het buitenland (China en Japan) dat het zorgplan vaak veel te groot wordt, omdat ze bang zijn dingen te vergeten. Om dingen niet te benoemen. Vanuit die gedachte gaan ze voor de zekerheid heel veel gebieden opvoeren, met de typering 'potentieel'. Dan zie je dat plannen erg groot worden en dan hebben ze soms wel 14 of 16 gebieden in hun plan en dat gaat natuurlijk niet werken. Daar helpen we ze dan een beetje mee, om dat een beetje los te laten. Er is natuurlijk ook wel eens een storing in het systeem geweest, maar die zijn eigenlijk van hele korte duur. Het kan wel eens gebeuren dat de server eruit gaat, dan proberen we met man en macht ervoor te zorgen dat dat weer heel snel weer up en running is. Dat lukt eigenlijk altijd heel goed. Maar het is wel eens voorgekomen. Het kan natuurlijk ook voorkomen dat het internet een storing heeft en ook dan kun je het systeem inderdaad niet gebruiken. Maar de medewerkers lezen zich altijd van tevoren thuis in en die weten dan bij de cliënt toch wel wat ze moeten doen.

I: Wat zijn de huidige uitdagingen van het systeem (Binnen Buurtzorg of bij andere organisaties)?

R: Er zijn geen uitdagingen op dit moment. Het systeem is erg compleet, professionals missen niks en vinden het fijn om met het systeem te werken.

I: Ziet u ook veranderingen voor/in de toekomst?

R: Het systeem wordt eigenlijk vooral extramuraal gebruikt. Er wordt momenteel wat geëxperimenteerd met het systeem intramuraal. Vilans doet hier nu wat onderzoek naar. Ik denk zelf dat het wel mogelijk is, omdat ik zelf heel erg geloof in het systeem en ook de manier van vastleggen. Maar wat je wel regelmatig hoort, is dat de intramurale setting vindt dat het Omaha Systeem redelijk interventiegericht is. Dus er is een probleem en daar actie op gezet worden. Terwijl we nu op dit moment in Nederland, een soort beweging zien waarin veel meer gekeken wordt naar heeft de cliënt een fijne dag? Dus daar ben je niet zo sterk bezig met hoe is het nu en waar werken we naar toe, maar meer hoe kun je op de best mogelijke manier omgaan met een beperking die je hebt. Zonder dat je daar echt werkelijk interventiegericht mee omgaat met het idee dat het beter moet worden. Dus er zijn mensen die zijn er heel erg voor en er zijn ook mensen die zeggen dat het Omaha Systeem niet in de intramurale setting past. Maar wie weet zal dat in de toekomst nog veranderen.

Interview about Buurtzorg China with a manager of Buurtzorg in China.

R: Respondent (Chinese manager)

I: Interviewer

I: Hoe kijk je aan tegen het gebruik van het Omaha systeem bij Buurtzorg in China?

R: We willen graag met het Omaha systeem werken, maar de zorgmedewerkers zijn dit niet gewend. Het kost veel energie en tijd om het ze eigen te maken. Het liefst wilde ik zoveel mogelijk verpleegkundigen in mijn team omdat zij weten hoe ze methodisch moeten werken en zij weten wat verpleegkundige diagnoses zijn etc. Financieel is dit echter niet haalbaar, dan gaan we verlies draaien. Daarom moeten er ook verzorgenden in het team (verhouding 2 verpleegkundigen en 6 verzorgenden). Maar deze verzorgenden hebben vaak alleen de basisschool afgerond en soms een paar jaar middelbare school. Daarna hebben ze een tijd niet gewerkt. Toen ze bij Buurtzorg kwamen werken hebben ze een cursus van 120 uur gehad. Maar dit was vooral veel stage en weinig theorie. Het theorie gedeelte was dan vaak het kiezen van het juiste antwoord uit verschillende antwoordmogelijkheden. Ze vinden het moeilijk om zelf rapportages te schrijven. Misschien moet ik voor hun toch weer een traditioneel mapje maken, want de verpleegkundigen hebben wel bepaalde informatie nodig. Zoals hartslag en bloedsuikerwaarden.

I: Hoe lopen de Buurtzorg teams verder in China?

R: We zijn nu ongeveer 4 à 5 maanden bezig en zitten nog in de opstartfase. Maar het web is niet zo gebruiksvriendelijk. Het Omaha systeem is maar een onderdeel van het web. Andere delen zijn de planning en het communiceren met je team. Dit systeem moet snel verbeterd worden om het vertrouwen van de zorgmedewerkers te winnen. Als dit niet gebeurt dan gaat het niet werken.

I: Hoe zijn de medewerkers geschoold in het Omaha systeem? Is er gebruik gemaakt van trainingen?

R: Uiteraard zijn er trainingen gegeven met uitleg over het Omaha systeem. Dat heb ik zelf gedaan. Iedere medewerker die nieuw is krijgt een uitleg over het systeem.

I: Heeft het management de medewerkers ondersteuning (training, informatie etc.) in het Omaha systeem geboden bij het opstarten van de teams? Zo ja, op welke wijze?

R: Ja. De medewerkers kunnen zelf aangeven wanneer ze hulp nodig hebben, en dat doen ze ook vaak. En daarnaast is hier pas nog een coach uit Nederland geweest omdat we een conflict in een van de teams hadden.

I: Krijgen de medewerkers tussendoor ook nog een opfriscursus of is er een vervolgcursus?

R: Elke 2 weken is er een teamoverleg en daarin wordt een casus besproken. Dan pakt de verpleegkundige de computer erbij en bespreken ze welke diagnose gesteld is en wat ze precies allemaal in Omaha heeft gedaan.

I: Onze survey laat zien dat de intentie om te gebruiken hoog is in China. Denkt jij dat dit betekent dat de medewerkers de Omaha technologie geaccepteerd hebben? Zo ja, waar blijkt dit uit? Of zijn er dingen die deze acceptatie in de weg staan?

R: Ik denk dat de medewerkers nog te kort met het systeem werken en dat ze er nog te weinig voordeel van hebben gezien. Dus ik denk dat ze de technologie nog niet volledig geaccepteerd hebben.

I: Vertrouwen (trust) is vaak een belangrijke factor om te gebruiken van technologie. Vertrouwen de medewerkers het systeem? Zo ja, waar blijkt dat uit, zo nee waar blijkt dit uit?

R: De medewerkers hebben nog niet voldoende vertrouwen in het systeem. Maar dit komt omdat ze er nog kort mee werken en omdat het systeem nog niet gebruiksvriendelijk genoeg is.

I: Niet alleen medewerkers, maar ook cliënten moeten vertrouwen hebben in het Omaha systeem. Weten zij dat er gebruik gemaakt wordt van dit systeem? En zo ja, denk je dat ze er vertrouwen in hebben? Twijfelen de cliënten bijvoorbeeld om hun gegevens te geven aan het systeem? Of zijn er andere zaken waarin vertrouwen in Omaha systeem in twijfel wordt getrokken, (of juist niet)?

R: De cliënten weten nog niks van het gebruik van het Omaha systeem. Voor hun is de thuiszorg sowieso heel erg nieuw. Het is opgelegd door de overheid. De cliënten waren het gewoon helemaal niet gewend en ze wisten niet wat ze ervan konden verwachten. Eerst werden de wijkverpleegkundigen niet binnen gelaten door de cliënten. Er moest eerst gebouwd worden aan vertrouwen. Nu zijn de verpleegkundigen wel welkom en durven de cliënten hun informatie te geven.

I: Gebruiksvriendelijkheid is ook een belangrijk factor in de literatuur. Vinden de medewerkers het lastig of gemakkelijk om te werken met het Omaha systeem? Zo ja, waar hoor je de meeste klachten over?

R: Het systeem wordt nog niet als gebruiksvriendelijk ervaren. De verpleegkundigen zijn vanuit het ziekenhuis gewend om door de artsen opdrachten te krijgen en die uit te voeren. Nu moeten ze alles zelf bedenken. Ze moeten nog heel erg wennen aan de methodiek van het Omaha systeem.

I: Zie je verschil tussen medewerkers met verschillende functies als het gaat om werken met het systeem? Vinden laagopgeleide medewerkers dit lastiger dan hoogopgeleide medewerkers? Waarom is dat?

R: Niveauverschil is nog groter dan je verwacht. Verzorgenden weigerden eerst om het Omaha systeem te gebruiken. Ze weten niet wat methodisch werken is. Ze weten niet wat een verpleegkundige diagnose is. We kunnen niet hetzelfde niveau van hun verwachten als van de verpleegkundigen. Ze hebben maar 120 uur training gehad. Waarvan heel veel praktijk en maar weinig theorie. Ze hebben niet voldoende kennis. We kunnen niet van hun verwachten dat ze na die training gelijk op hetzelfde niveau als de verpleegkundigen in het team kunnen werken.

I: Zie je culturele verschillen tussen de medewerkers in Nederland en in China? Ons onderzoek laat zien dat de intentie om te gebruiken hoger staat in China dan in Nederland. Zo ja, waarom is dit en welke verschillen vallen je op?

R: Chinezen doen niet graag hun mond open. De vraag is of zelfsturing in China wel te realiseren is. Ik ben zelf vol vertrouwen in de werkwijze van Buurtzorg. Maar we kunnen het niet letterlijk naar China kopiëren. De managers in Nederland denken gewoon dat we dan beter moeten sturen, maar dat is niet de oplossing. De lagere niveaus kun je wel sturen, maar de hoge niveaus raken alleen maar geïrriteerd als je meer gaat sturen. Daarnaast kun je de teams in China moeilijk vergelijken met de teams in Nederland. In Nederland is 70% van de Buurtzorg zorgmedewerkers hoogopgeleid (niveau 5 en 4). Dat is een goede basis voor zelfsturing. Die basis heb je niet in China. Ik vraag me soms wel eens af hoe lang ik het hier nog moet volhouden. Daarnaast zijn Chinezen bang voor gezichtsverlies. Ze zijn ook heel passief. Niet zo ondernemend. Als ze ergens niet uit komen dan vragen ze snel om hulp en ze gaan niet zelf op onderzoek uit. Dit is heel anders dan in Nederland. In Nederland doen de verpleegkundigen alles zelf, ook de ADL. De Chinese verpleegkundigen vinden dit raar. Dat soort taken doen de verzorgenden. Maar omdat preventie in de thuiszorg heel belangrijk is, mis je als verpleegkundige op die manier signalen. Signalen die je waar kunt nemen als je de ADL uitvoert. De vraag is of de verzorgenden die signalen wel oppikken. Dit is iets wat we hebben gemist in China.