

# Emerging Roles and Skills in Healthcare Procurement

Author: Stef Schrooten  
University of Twente  
P.O. Box 217, 7500AE Enschede  
The Netherlands

## ABSTRACT,

*Demographic ageing in the Netherlands will result in an increased demand for care. Meanwhile the active labour force is decreasing. This dual effect will create a staff shortage in healthcare. Innovation is essential to increase the labour productivity and therefore mitigate the staff shortage. On top of this, the healthcare sector is a polluting industry. With the European Green deal being signed, aiming to reduce Greenhouse gas emissions, healthcare is required to enhance sustainability through innovation. Innovation often originates from external suppliers in both known and unknown supply chains, however healthcare procurement is considered traditional, risk-averse and cost-oriented. This has to change to enhance innovation. By approaching innovative suppliers, the role of the purchaser is bound to change and new skills are required. This research aims to find these emerging roles and skills in healthcare procurement and prepare the procurement department in advance.*

## Graduation Committee members:

Dr. Klaas Stek

Prof. dr. Louise Knight

## Keywords

Six-eight keywords are your own designated keywords.

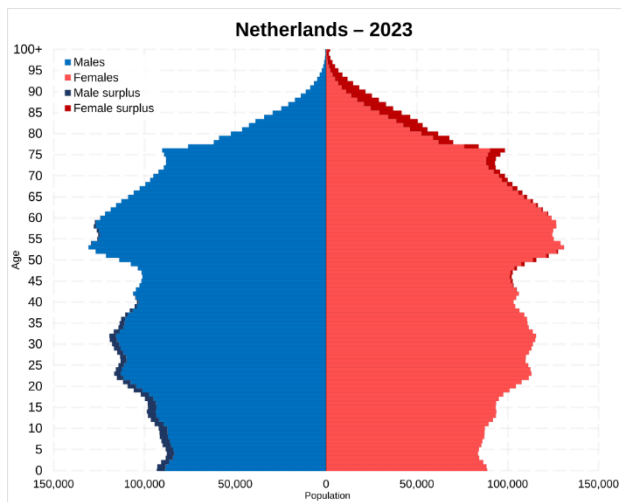
Healthcare, procurement, ageing, sustainability, roles, skills, innovation

# 1. INTRODUCTION

Academic research and foresight have shown that demographic ageing is becoming a significant problem in the Netherlands. In the upcoming years, the age category 67 years and above is increasing rapidly, resulting in substantial pressure on the active labour force (Centraal Bureau Statistiek, 2024a).

Upon examining the population pyramid of the Netherlands, it becomes evident that the demographic structure reveals a disproportionately high number of elderly individuals compared to the younger population (See Fig. 1). This disparity can be attributed to the demographic effect of the post-war baby boom, and the continued economic growth and social stability that followed. Although other countries had baby booms, the situation in the Netherlands was unparalleled. During the period from 1946 until 1956, the Netherlands recorded the highest birth rate in Western-Europe, these levels remained elevated, until a significant decline in 1970 (Centraal Bureau Statistiek, 2012).

**Figure 1: Population Pyramid of the Netherlands**



Retrieved from: (United Nations, 2024).

Demographic ageing occurs when the number of people retiring exceeds the number of new entrants to the labour force. This relative decrease in the labour force puts pressure across various domains of society, the most prevalent being the healthcare sector (Woittiez et al., 2021). Demographic aging has a dual effect on the healthcare sector; more people are in need of care and fewer people are able to provide it (Nederlandse Zorgautoriteit, 2023).

According to the Dutch Central Bureau of Statistics (CBS), the healthcare sector is the largest in terms of employment, with approximately one in every six people working across its ranks (Centraal Bureau Statistiek, 2023a). Due to ageing and emerging chronic care needs, this number is expected to increase to one out of four people in 2040 (WRR, 2021).

The population of individuals aged 65 and older is expanding, causing a decline in the working-age population. In 2040, a quarter of the population is expected to be 65 years or older compared to 20% in 2023 (Centraal Bureau Statistiek, 2023b). Moreover, the population aged 80 and above will double in 2050

(Centraal Bureau Statistiek, 2024b). With seniors having a higher susceptibility to illness and chronic diseases, an increase in demand for healthcare will follow.

A study conducted by Actiz, the Dutch Association for Elderly and Home Care, confirms the consequences of the dual effect (Actiz, 2021). It was calculated that there will be a labour shortage of 243.000 people in 2050, compared to 26.000 people in 2020.

Given the lack of professionals in the healthcare sector, an improvement in labour productivity is necessary. By improving an individual's labour productivity, a greater quantity of tasks shall be completed in a similar timeframe, mitigating the demand shortage (Hofmarcher, 2016).

In addition to the anticipated labour shortage, there are environmental sustainability challenges in the healthcare sector. The National Institute for Public Health and Environment in the Netherlands (RIVM) calculated that the Dutch healthcare sector is responsible for approximately 7% of national greenhouse gas emissions (Rijksinstituut voor Volksgezondheid en Milieu, 2022). In hospitals, the daily waste per patient could reach up to 8,4 kg (van Straten et al., 2023).

In December 2019, the European Union signed the European Green Deal. The Green Deal aims to reach climate neutrality by 2050 by increasing targets for the reduction of greenhouse gas emissions (Cuadros-Casanova et al., 2023). To reach the goals set by the European Green Deal, the EU member states have to reach sustainability targets. For the Netherlands to reach the climate goals set by the EU, drastic measures have to be taken in all unsustainable sectors, including healthcare.

To improve sustainability in the healthcare sector, a "Green Deal Healthcare" has been established in the Netherlands, to guide the healthcare economy toward a 55% reduction of CO2 emissions in 2030 (van Straten et al., 2023). The sustainability challenges faced by healthcare institutions could in turn be solved by innovating.

Innovation is necessary to address both challenges. It will potentially improve labour productivity and aid healthcare institutions to adhere to the rules and guidelines imposed by the Green Deal. The need for innovation is evident across all facets of healthcare. This paper will specifically focus on the procurement department and examine how this need for innovation will affect the functions and responsibilities of procurement experts.

With the need for innovation, a problem arises. Innovation often comes from external supply chains. An innovative supplier will share their innovations with preferred customers, consequently a customer should strive for preferred customer status (Vos et al., 2016). Healthcare procurement is considered traditional, risk averse and cost oriented (Meehan et al., 2017). To enhance innovation, a change is required. The role of the purchaser will alter, and different skills will be required. The goal of this research is to identify future roles and skills in healthcare procurement that will improve innovation within the healthcare sector.

## 1.1 Research Objective and Question

The research question for this report can be formulated as follows:

*“What emerging roles can be identified in healthcare procurement for innovation sourcing and sustainability procurement, and what skills do these roles require?”*

This research aims to recognise problems faced by healthcare institutions and procurement departments that are preventing further innovation. The goal is to identify future roles and skills in healthcare procurement to fill in the missing gaps and solve these problems.

By identifying these roles and skills in advance, the procurement department can prepare for the changes in the role of the purchaser. Employees can be trained to master the necessary skills and talent management can be optimised.

## 2. LITERATURE REVIEW

### 2.1 Value-Based Procurement in Healthcare

Literature identifies the evolution of the procurement function. It has shifted from a traditional administrative and transactional role, towards a more strategic one (Tassabehji & Moorhouse, 2008). Purchasing plays a key role between external suppliers and internal organisational customers in creating and delivering value to external customers (Chen et al., 2004).

Healthcare procurement ranks among the largest sectors globally, driven by the substantial demand for medical supplies, equipment, and services essential for healthcare delivery and patient care. In 2022, the Netherlands spent 127 billion euros on healthcare (Centraal Bureau Statistiek, 2024c).

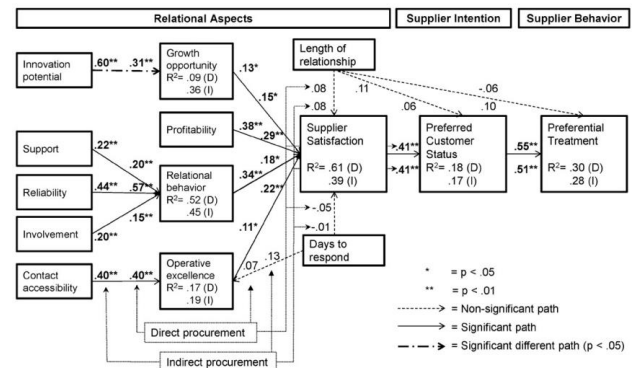
Michael Porter, the pioneer of competitive strategy, argues that the problem with healthcare procurement is that it does not create value for the patient. Porter first proposed the concept of value-based healthcare in 2006 (Porter & Teisberg, 2006). He and his co-author defined it as health outcome per dollar spent. The maximisation of medical quality and effectiveness using lower costs is emphasised in the book. They suggest that considering more efficient and cost-effective suppliers is necessary to solve many healthcare problems.

A group purchasing organisations (GPO) helps improve purchasing efficiency and reduce purchasing costs by pooling the purchasing volume of its members and utilising its negotiating power (Li, 2024). It will create leverage for the buying organisation, forcing its suppliers to meet their demands. This can enhance innovation; a supplier cannot afford to lose ground, because they want to remain relevant to the GPO and retain them as a client. This compels them to foster creativity and explore new solutions.

### 2.2 Enhancing Innovation through Supplier Satisfaction

The need for innovation was stated earlier. Research has been conducted into the best way to enhance innovation. Innovation often originates from external suppliers in both known and unknown supply chains. Therefore, procurement is crucial for improving innovation. Buyers are often dependent on their suppliers for innovating (Vos et al., 2016). Consequently, buyers should view suppliers as a key source of competitive advantage and innovation and try to achieve preferred customer status. By attaining preferred customer status, buyers will get preferential treatment (See Fig. 2). Preferential treatment includes aspects like sharing the newest and most innovative ideas (See Appendix C).

**Figure 2: Supplier Satisfaction Model**



Note. Retrieved from (Vos et al., 2016).

The model in figure 2 is created from a supplier's perspective. Thus, preferred customer status can be achieved by augmenting supplier satisfaction. It is indicated that supplier satisfaction is determined by four aspects: growth opportunity, profitability, relational behaviour and operative excellence. Only buyers that have a positive impact on these aspects and help the supplying firm accelerate in them can achieve preferred customer status and thus, preferential treatment.

Looking at figure 2, it becomes apparent that a buying firm should aim to collaborate with the supplier and improve the growth opportunity for both firms. Traditionally, healthcare procurement is considered, risk-averse and cost-oriented (Meehan et al., 2017). However, profitability, support and involvement are key aspects for strengthening supplier satisfaction and thus attaining preferred customer status. To address the challenges awaiting the healthcare sector, change is required in the role of the procurement expert. Purchasing firms will have to collaborate closely with external suppliers instead of merely focussing on costs.

### 2.3 European Green Deal

Greenhouse gas emissions are posing a threat to the environment and the upcoming generations. The increased concentration in our atmosphere is causing a prolonged rise in Earth's temperature known as global warming (van Straten et al., 2023). In December 2019, Ursula von der Leyen, the newly appointed President of the European Commission, unveiled the European Green Deal.

The European Commission aims to set the blueprint for the transformational change. All 27 EU member states have pledged to reach climate neutrality by 2050 (Kougias et al., 2021). To prepare Europe for this challenge, the EU has committed to reduce their net greenhouse gas emissions by at least 55% by

2030, compared to 1990 levels. It adopted the so called “Fit for 55” legislation package to turn this objective into a reality (Veugelers, 2024). This package contains legally binding climate targets covering all sectors of the economy and is expected to reduce EU net greenhouse gas emissions by 57% by 2030 (European Commission, 2023). Commission President Ursula von der Leyen says “*the European Green Deal is delivering the change we need to reduce CO<sup>2</sup> emissions. It does so while keeping the interests of our citizens in mind*” (European Commission, 2023).

This can be achieved by developing circular processes that re-use, re-purpose and recycle natural resources “*Sustainability means reducing energy consumption and greenhouse emissions, to avoid depletion and degradation of natural resources, to ensure the needs of today’s generations without jeopardising the needs of future generations*” (European Commission et al., 2021). This is especially relevant for the healthcare sector. The healthcare sector is often described as a linear economy (van Straten et al., 2023). Hygiene and sterile equipment are critical; thus, products are designed for one time use. This leads to tremendous waste.

A circular economy refers to a closed-loop, restorative and regenerative economic system, which aims to optimise resources and waste (Ranta et al., 2020). The key goal is to keep products, components and materials at their highest utility and value at all times. For healthcare institutions this means avoiding one time usage of gear and equipment and switch to reusables.

## 2.4 Theoretical Framework

### 2.4.1 Human Capital Theory

The Human Capital Theory can be defined as “productive wealth embodied in labour, skills and knowledge” (Tan, 2014). It states that the most valuable of all capital is that invested in human beings. It is suggested that an investment in education increases the marginal productivity of labour (Marginson, 2019).

A change in the healthcare sector is required, to cope with the regulations of the European Green Deal and the lack of professionals. Innovation through a strategic business partner will resolve these challenges, but for this, competencies are required. “*Relative little competence is needed when procuring off the-shelf goods for the lowest possible price, greater competence (of procurers) is required to encourage the supplier to innovate*” (Stek, 2021). Stek identified four categories, each with their required competencies.

First, establishing a relationship with the internal partner. “*Influencing and persuasion skills are required to coordinate and direct supply chain members both within and outside the organization*” (Stek, 2021). Secondly, procurers need to be connective and stay in touch with the market. They want to establish relationships with innovative suppliers and challenge them to be experimental and to come up with innovative solutions. Thirdly, the role of a strategic partnership needs to be filled. This is done through listening carefully to the internal partner and to raise critical questions to identify the “real need” behind the demand. Finally, it is important to stay visible to the internal partner. Job rotation is suggested for this.

In short, the need for a procurement expert with entrepreneurial behaviour and courage is shown. On top of that “*the procurer needs to be confident to innovate and create commitment for innovations to advocate innovations in the internal organisation.*”

*The procurer is creative, proactive and persistent and has excellent communication, presentation and networking abilities”* (Stek, 2021).

The conclusion can be made that procurement departments need to invest in human capital through training and educating their employees. Education will increase employee’s capacity, equipping them with knowledge and skills necessary for innovation (Dimand et al., 2022). Procurement experts in the healthcare sector need to equip themselves with the necessary skills to innovate their departments to be more productive and environmentally conscious.

### 2.4.2 Knowledge-Based View

The Knowledge-Based View (KBV) is a part of the Resource-Based View (RBV). The RBV treats knowledge as any other intangible resource. The worth of knowledge to a firm depends on how valuable, rare, appropriable, and difficult to imitate it is (Moreno et al., 2012). According to Grant, knowledge is the most strategically important of the firm’s resources (Grant, 1996). Knowledge-related processes that have been examined in the KBV are knowledge creation, transfer, and implementation, as well as learning at the individual and organisational levels.

Knowledge is considered a key driver of innovation (Block, 2012). It is important to have knowledge about a product for effective collaboration with suppliers (Eisenhardt et al., 2000). Knowledge will allow for better communication, clearer expectations and needs. It ensures both parties are aligned and can work together efficiently. It also helps for informed decision making of the buying firm (Soto-Acosta et al., 2018). They must understand the technology to choose the right suppliers and assess the potential outcome of the product.

## 3. METHODOLOGY

### 3.1 Research Design

For this research, a qualitative research method was used to collect relevant data and identify the new roles and skills within European healthcare procurement. By conducting approximately 40-minute interviews, first-hand knowledge from experts in the field of healthcare procurement was gathered. It allowed for a better understanding of the real-world setting (Yin, 2016). The interviews gave an in-depth insight into the research context. They were conducted in a semi-structured manner, allowing for flexibility and open-ended discussions. During the interviews, preestablished questions were asked, but there was room for follow-up questions, allowing for more in-depth answers (Babbie, 2013). Interview questions varied per respondent. Since people from different backgrounds were interviewed, I was interested in different topics. Ten interviews were conducted through Microsoft Teams, and data was collected using their transcribing tool. The final interview was done over the phone. After retrieving the transcriptions, Atlas TI was used to analyse and categorise them.

### 3.2 Sampling

This research focuses on the Dutch healthcare sector. Although many countries in Western-Europe experienced a post-war baby

boom and are restricted by the European Green Deal, the different laws, regulations, languages and other cultural influences lead to major differences in challenges between the countries. Eleven interviews would create a broad overview of all countries but would not allow for an in-depth analysis. Therefore, the focus of this research will be on one specific country. The Netherlands was chosen for this because the situation was unique. From 1946 until 1956, the Netherlands recorded the highest absolute birth rate in Western-Europe, on a relative scale, this was even more striking.

The population that this research focusses on can thus be conceptualised as procurement experts and consultants specialised in the Dutch healthcare sector. These experts are assumed to have the best understanding of their own department. Eleven interviews ensured a comprehensive understanding of the research context. Experts from multiple companies were interviewed, with the focus being on group purchasing organisations like Intrakoop and members of “The European Health Public Procurement Alliance” (EHPPA). EHPPA is an organisation specialising in the health & care sector in the European Union. It aims to facilitate cooperation and collaboration between its members to improve their procurement performance and to gain a competitive advantage in their own country.

To prevent one-sided research, it is important to look at changes from different perspectives. Three interviews were reserved for this. They aimed to provide either an outsider- or a unique insider perspective. For the outsider perspective, a supplier in the healthcare sector was interviewed. They shed light on their personal experience and the changes they noticed in their customers’ patterns regarding Industry 5.0. For the insider perspective, a project manager and speaker on social robotics, and a Green Team coordinator at a Dutch hospital were interviewed. It was assumed that their personal experience and first-hand knowledge would be beneficial in identifying the progress made and the expectations for the future. Eventually a diverse list of respondents was created (see Table 1).

In the end there was one outlier. They were employed at MercurHosp, a Belgian GPO and member of EHPPA. The insights provided in this interview are still relevant as the procurement processes and challenges in the Belgian healthcare sector closely mirror those in the Netherlands.

| Nr. | Nationality | Function  |
|-----|-------------|---|
| 1   | Dutch       | Director of Public Affairs and Healthcare               |
| 2   | Dutch       | Regional Manager  |
| 3   | Dutch       | Procurement Specialist / Product Manager                |
| 4   | Dutch       | Adviser hospitals                                       |
| 5   | Dutch       | Executive Director                                      |
| 6   | Dutch       | ICT Procurement Consultant for Healthcare Organizations |
| 7   | Dutch       | Procurement Specialist                                  |
| 8   | Belgian     | CEO   |
| 9   | Dutch       | Green Team Coordinator / Founder Green Team OR          |

|    |       |   |
|----|-------|---|
| 10 | Dutch | Project Manager / Speaker Social Robotics |
| 11 | Dutch | Manager Procurement and Logistics         |

**Table 1. Respondents**

## 4. RESULTS

In the following section, the results obtained through the interviews will be discussed. Several innovations and initiatives were mentioned during the interviews. Moreover, challenges preventing institutions from innovating further were identified.

In total 11 interviews were conducted. The respondents remain anonymous, they will therefore be referred to as IP (interview participant) + their unique number. After analysing the interviews using the software Atlas TI, the following results could be identified. Note that different interview questions were asked depending on the respondent. Not all respondents were procurement experts. For example, the Green Team Coordinator was not asked about labour productivity, since they have limited knowledge on the topic.

### 4.1 Productivity Enhancing Innovations

To get a better understanding of the future roles it is important to look at the current developments. During the interviews, 82% of respondents mentioned that they fear a labour shortage in the near future (IP1, IP2, IP3, IP4, IP5, IP6, IP9, IP10, IP11). Innovation is required to enhance labour productivity. By enhancing labour productivity, the total number of hours required can be reduced, thereby partially mitigating the labour shortage. Since (...) of respondents concerned their fear for a lack of professionals, they were asked what initiatives were taken to counteract it. 45% of the respondents mentioned various emerging technologies like robots, sensors and the Internet of Things (IP2, IP4, IP5, IP9, IP11).

IP9 stated that doctors can diagnose patients remotely using emerging technologies like Internet of Things. By using sensors, blood pressure and blood values can be measured remotely, and doctors can investigate these values without an appointment.

Internet of Things also support nurses in hospitals and nursing homes. “Under normal circumstances a nurse will do a check up on their patients every hour, the implementation of sensors can reduce this time immensely” (IP9). By using bed sensors, a detection can be made if someone is moving, this could indicate that they are uncomfortable and a check up is needed. On a similar note, smart incontinence diapers can be used in elderly care to notify caregivers about the wearer’s condition. It includes sensors and electronic component that track moisture levels, body temperature, urinary pH levels and signs of infection. Nurses no longer need to constantly monitor their patients. Notification alert them to issues requiring their immediate attention. This technological advancement allows nurses distribute their attention across more people and allocate their time to more critical tasks.

IP2 has been researching how social robotics can empower people to do basic human tasks. They mentioned that there are development trajectories for robots that wash and lift people, but they are unavailable in the Netherlands at this point in time. IP2

explained the benefits of using a verbal robot. Verbal robots can talk with clients, answer basic questions and reassure people if necessary. They mentioned that nurses are constantly helping clients answer basic questions and help them do basic tasks. "Robots are capable of taking over many tasks currently performed by humans" (IP2). In some practical cases in-home care became redundant.

Developments surrounding productivity enhancing innovations are advancing. Having a good network of suppliers is beneficial to stay informed on about new the new developments (IP9). However, according to IP2 and IP11 they are not advancing swiftly enough: "suppliers are actively engaged in attracting new customers, in my opinion they should focus more on research and development" (IP2). The problems IP11 faced were based in their own organisation. In the past they had experienced problems when a procurement expert would spend one or two hours per week on innovation. "I am almost certain that, in the near future, there will be an innovation manager whose sole purpose is to look for new innovations" (IP11).

## 4.2 Sustainability Initiatives

Similar to the productivity enhancing innovation, interview participants were asked about current developments. During the analysis of the interviews, several initiatives that would enhance sustainability were identified. However, according to IP3, the current pace of these innovations is not meeting expectations: "Currently it is seen as a hobby or luxury to work on sustainability, this needs to become more urgent".

This slow pace can be attributed to budgetary constraints: "We have established selection criteria for sustainability; however, it remains challenging due to the significant financial pressure faced by hospitals" (IP4).

However, when asked if reusables are more expensive than disposables, IP3 answered that "in the long-term sustainability often turns out to save money". The issue is that hospitals have an annual budget and they often do not consider the long term. IP9 cited that sustainability often goes hand in hand with quality and efficiency, however, people fail to see it. It is important to convince them to change. Despite this, progress has been made and changes can be identified.

When asked about sustainability, 36% of respondents referenced the "Milieuthermometer Zorg" (IP1, IP3, IP4, IP11). Milieuthermometer Zorg is a certification system developed for healthcare institutions in the Netherlands. It aims to improve sustainability within these institutions by setting criteria an organisation has to adhere to (MPZ, 2024). This environmental certification focuses on sustainable operations in the healthcare sector and includes various criteria, such as sustainable procurement and collaboration with suppliers. This means that healthcare institutions are encouraged to work with suppliers who offer sustainable products and services, thereby contributing to the overall productivity and sustainability of the organization.

Collaboration with suppliers is a key aspect for innovation. More than half of the respondents said their organisation works closely with their suppliers (IP1, IP2, IP4, IP5, IP8, IP9, IP11). IP11 stated that it is important for a buyer to be understanding of the

innovating party: "A buyer should not be too demanding, instead they ought to support them and grow together". This complies with the supplier satisfaction model (See Appendix B). Innovation comes with highs and lows; social skills are important to be compassionate and understanding of a supplier.

Sustainable procurement through a circular economy is another requirement of the Milieuthermometer Zorg. Hospitals contribute significantly to environmental pollution due to their substantial use of disposables: "The procurement director of Erasmus MC conducted a comprehensive analysis of plastic waste in the ORs, and the results were absolutely shocking." (IP8). Hospitals realise the waste piles they are creating are unsustainable and they are moving towards cleaner alternatives: IP3 stated that they are striving to transition away from disposables to reusables wherever it is possible.

Hospitals currently utilize washable isolation gowns and washcloths, and market research is aiming to discover other potential reusable items. Currently, washable underpads are being tested: "At my hospital alone, 482,000 disposable underpads are used annually, so they are a highly polluting item. It would be fantastic if their usage could be reduced." (IP3).

IP6 stated that their organisation recently started a circular kickstart association with various stakeholders. "We hope that this will support the circular economy process". A circular economy has financial benefits on top of being sustainable. Traditional procurement aims to haggle with a supplier to get a small discount, but there is way more potential impact in mitigating waste (IP11).

A problem occurs when implementing reusable items in the healthcare sector. "Circular economy is contradictory to the legislation around hygiene. It is a touchy theme in the healthcare industry" (IP6). There is hygienic risk involved and "patient safety is paramount" (IP8). In the last century, washable items were customary, but that was before these risks were recognised. It was demonstrated that isolation gowns spread particles. These particles could enter the wound during surgery, causing patient complications. "As a result, some patients left the hospital with infections" (IP1).

The Medical Device Regulation (MDR) was invented to prevent this. "It has a tremendous impact on the products entering the market in Europe" (IP1). The consequence of this is that unsustainable processes are not easily altered. "We will be reducing the use of plastic, but it must be realistic. If something needs to be double wrapped for sterile packaging, we are bound to it" (IP4).

IP3 is not denying the importance of the Medical Device Regulation, but according to them the market went along with it without thinking about the consequences it would have on the environment: "Some things are convenient to have as disposable, but for many other items it is completely absurd". IP11 agreed with this vision, he stated that companies often use the MDR as an excuse not to take action. "They look at what is forbidden, but you can also look at what you can do within the laws and regulations" (IP11).

The healthcare sector must factor in another set of rules and regulations. The Corporate Sustainability Reporting Directive is a regulatory initiative from the European Union aimed at enhancing corporate transparency and accountability regarding sustainability aspects. It obligates big corporations to include their impact on environmental and social aspects in the board report. Due to this regulation, suppliers must improve their transparency for their products and production processes (IP1). They are required to show that their products met the required criteria.

It is important to know the laws and regulations surrounding the MDR, CSRD and Green Deal. However, they can become overwhelming, which is why Intrakoop is working on establishing criteria for Corporate Social Responsibility (CSR) (IP1, IP4, IP11). These criteria are meant as guidelines, to prevent hospitals ending up with products that do not comply with laws or regulations in the long term. The "green suitcase" is a toolkit for organisations to get started with sustainability (IP1, IP4, IP11). "People often assume that sustainability is complex and expensive, but that does not have to be the case." (IP9). The toolkit

IP1 said the toolkit was useful in most cases, but he mentioned that in some cases it was taken out of proportion. Sustainability is important, but in some cases the costs do not outweigh the benefits. Certain factors like patient safety cannot be sacrificed in order to enhance sustainability, which is why the medical device regulation was introduced. IP1 cited that it is important for procurement experts to stay critical and be a discussion partner.

On top of circular initiatives, healthcare procurement aims to keep the CO2 footprint low by conducting research into how products are produced and how they are transported. "Sometimes new items enter the market, because they are more sustainable, but that is not always the case: it would be nice if a procurement expert could investigate whether these new items truly are more sustainable" (IP3). According to IP1 there will be a new role in the future "solely dedicated to monitoring the origins of a product, assessing their environmental friendliness, and ensuring they can be properly disposed of by waste management services". This initiative does create a dilemma: "the task of a purchaser is to procure the highest quality at the lowest possible cost. However, this can be contradictory to what is sustainable" (IP1). IP11 stated that this will be the new norm: "if you do not meet the sustainability requirements, you will no longer be considered as an option". IP9 compared the current situation to the one several years ago: "Sustainability has become increasingly important. We always have a separate section detailing the sustainability requirements suppliers must meet when issuing a tender" (IP9).

### 4.3 Collaboration

A returning theme that half of the respondents brought up was the lack of collaboration between similar institutions (IP1, IP4, IP5, IP6, IP9, IP11). The importance of supplier collaboration was mentioned previously, however, this desire for collaboration with similar institutions was not anticipated. This aspiration was set in motion due to the fact that all Dutch healthcare institutions face similar problems. "A lot of energy and resources are wasted on reinventing what already exists" (IP11). Moreover,

collaborating can save time, money and can also enhance sustainability (IP 6).

In the Netherlands, we often find ourselves reinventing the wheel in many areas. "It is a shame, we have the same problems, so why would we not share the knowledge?" (IP9). In healthcare there is a so called "not invented here syndrome" (IP11). Organisations are unwilling to copy what works for others, they state that their organisation is different. In practice this turns out to be untrue. IP11 mentioned that there are 12.000 healthcare organisations in the Netherlands: "you cannot convince me that all 12.000 are different to the point they can never work together".

Out of the interview participants, 54% agreed that data and knowledge is a significant bottleneck for innovation and growth (IP1, IP4, IP5, IP6, IP9, IP11). "I believe the greatest benefits can be achieved if we are truly able to share best practices and work together" (IP4). In healthcare the opposite can be observed, even when data is available. IP11 expressed that the Green OR recently launched a pilot. Instead of learning from the existing data, many healthcare institutions reacted by launching a similar pilot. A change in attitude is required to remove this bottleneck. By working with other organisations, "not everyone has to do it individually" (IP4) and more data becomes available. Sharing data will further contribute to a sense of transparency, leading to improved efficiency in general.

When asked who is responsible for making connections and enhancing collaboration with other organisations, half of respondents agreed that a procurement expert is responsible. The other half stated that in the end management is responsible, but procurement plays a supporting role.

## 5. DISCUSSION

This research aimed to identify new roles and skills in healthcare procurement that will enhance labour productivity and sustainability through innovation using the following research question:

*"What emerging roles can be identified in healthcare procurement for innovation sourcing and sustainability procurement, and what skills do these roles require?"*

After reflecting on the results and the obstacles preventing institutions from innovating further. Four future roles in healthcare procurement were identified. These roles were based on the challenges mentioned by the respondents. They are assumed to become essential in the future to tackle these challenges. Interview participants were asked what skills were required to fulfil these roles up to standard.

### 5.1 Chief Innovation Officer

The Chief Innovation Officer (CIO) is tasked with incentivising innovation within the organisation. It includes both technological innovations and new, more efficient methods for care. They need to conduct efficient market research and identify new technologies and innovations that can enhance productivity, efficiency and quality of care.

During the interviews, it became apparent that 82% of respondents feared a labour shortage. This fear is rational and supported by research and forecasts (See Appendix A). Innovation is capable of transforming the healthcare sector into a more efficient organism and find new methods to deliver care with a smaller workforce.

### 5.1.1 Required skills and competencies.

By reflecting on the results, certain skills and competencies a Chief Innovation Officer has to possess can be identified. To improve innovation, preferential customer status is essential (See Appendix C). Therefore, a CIO needs to be understanding of their suppliers. Collaboration will often lead to the best results and in order to maximize growth you need to work together (See Appendix A). To achieve this another skill is necessary. It is important to have social skills and talk with the supplier. It is important not to hold someone accountable solely based on their figures, but rather work with them to maximise growth (IP11).

A CIO needs to be familiar with the market and needs to have a certain level of knowledge about the technology they are looking for. It was previously established that when innovating through an external supply chain, collaboration with that supplier is essential. The CIO will be the representative for the buying organisation. By collaborating with the supplier, the CIO needs to be familiar with the terminology inherent to the product.

IP9 made an interesting point. They mentioned that genetics play a prominent role in what job someone ends up fulfilling. Extraverts often end up in commercial roles, while the more reserved types are more likely to work in procurement departments. A Chief Innovation Officer would need to set a good example. They need to be more proactive and seek confrontation if necessary (IP2)

## 5.2 Legislation Specialist

The Legislation Specialist is responsible for ensuring purchasing processes comply with the relevant laws and regulations. This role will be especially relevant in the healthcare sector, since there are multiple sets of regulation to consider. A Legislation Specialist will sort out the laws and regulations regarding the Medical Device Regulation, Corporate Sustainability Reporting Directive and the European Green Deal in an orderly fashion. Although purchasing aspects can be identified within this role, it might be shared with other departments within the organisation like the legal division.

From the results it became evident that 71% of respondents indicated that the rules and regulation healthcare firms have to adhere to can become overwhelming (IP1, IP3, IP6, IP8, IP9, IP10, IP11). These regulations can sound threatening. It will prevent some organisations from starting their sustainability transition. "That would be a shame, making it easily accessible in a straightforward way would be beneficial" (IP11). From an outsider perspective, the assumption might be made that sustainability is complex and expensive, but that does not have to be the case. A Legislation Specialist is tasked with making it more comprehensible.

### 5.2.1 Required skills and competencies.

It was mentioned that this role is shared with the legal division. A Legislation Specialist needs to possess legal expertise. They should have a thorough understanding of the relevant laws and regulations like the MDR. It was noted that the laws and regulations are overwhelming, to analyse and interpret complex legal documents, analytical cognition is essential.

Finally, communication skills are arguably the most important. Understanding the regulation is the first step to becoming a good Legislation Specialist, but they are tasked with communicating their findings to the rest of the company in a clear and simple manner.

## 5.3 Sustainability Specialist

A sustainability Specialist is responsible for developing and implementing sustainability strategies. IP3 mentioned the need for more roles regarding sustainability, to increase the pace of innovations regarding sustainability. The Sustainability Specialist has an overlap with the Chief Innovation Officer, although the roles originate from two different sides. Innovation is key for improving sustainability, but the Sustainability Specialist is tasked with improving the sustainability of the organisation overall.

A Sustainability Specialist is tasked with "pressuring" suppliers to change, "not in a negative sense, but it is important to create sustainability together" (IP11). A Sustainability Specialist is responsible for communicating with their suppliers and explain that the buying organisation is willing to assist them in innovating, but it is mandatory if they do not want to be replaced. They need to express to their supplier that sustainability is the new norm, and they will not be considered if they do not meet the requirements.

### 5.3.1 Required skills and competencies.

IP6 mentioned that he would prefer this role to be filled by the younger generation. Although not a skill, younger people generally care more about sustainability, and they can bring a fresh perspective. It is crucial to have an intrinsic value.

Arguably the most important skill is to be motivating. A significant proportion older employees at companies is not interested in sustainability or not educated on it. Therefore, it is important to be ambitious and motivate them (IP9). Sustainability is a complicated theme, so a Sustainability Specialist needs to be patient and willing to help others understand. It is important to be intrinsically driven (IP9), if you do not believe in your cause, it becomes nearly impossible to motivate others.

A Sustainability Specialist would require an in-depth understanding of environmental laws and the European Green Deal objectives. This aligns with data found in literature. In the literature the importance of knowledge as a key driver of innovation was mentioned.



On top of this it is important to be curious and analysing (IP11). Sustainability is often enhanced using long-term development strategies. The environmental goals of the European Green Deal to become climate neutral are aimed at 2050. A Sustainability Specialist would need to be able to think long term and plan ahead.

## 5.4 Collaborative Partnerships Manager

An unexpected, but interesting theme found during the interviews was a desire for collaborative partnerships with similar organisations. Dutch healthcare institutions often reinvent the wheel. 54% of the interview participants agreed that collaboration with similar institutions is essential for improving sustainability.

When asked who was responsible for initiating these partnerships, interview participants disagreed. Half of the respondents stated that this is a role of a procurement expert, the other half said it was a shared between management and purchaser, but in the end management was responsible.

A Collaborative Partnerships Manager is responsible for identifying, initiating and maintaining partnerships with similar organisations. They need to reach out to potential partners and explore collaboration opportunities. Moreover, they are in charge of communication. This includes organising meetings, sharing updates and ensuring regular communication between the collaborating parties. Finally, they are responsible for managing contracts and agreements, and risk management.

### 5.4.1 Required skills and competencies.

It is fundamental for a Collaborative Partnerships Manager to possess networking skills (IP6). Being capable of building relationships with stakeholders is crucial for starting a partnership. Another skill is communication skills and being able to express your desire. IP11 mentioned that it can be difficult to put your demands into words, however, this is crucial for a Collaborative Partnership Manager.

Other key competencies required for fulfilling the role of Collaborative Partnerships Manager are curiosity, researching and a motivation to look around (IP11).

Various skills found during the research align with the skills found in literature on innovation. Stek mentioned communication- and networking skills are important (Stek, 2021). This was mentioned by respondents as well.

## 6. LIMITATIONS AND FUTURE RESEARCH RECOMENDATAIONS

This research does have its limitations. Firstly, the sample was relatively small. Although eleven interviews gave good insights, it did not represent the entire population.

Secondly, the results could be considered speculative. Although every assumption was based on relevant data, it is impossible to predict the future. This research method is limited to the knowledge of the interview participants. It was attempted to mitigate potential bias by interviewing people from different backgrounds.

Finally, there was one respondent outside of the Netherlands working for a Belgian company. Belgium is a similar country to the Netherlands with similar demographics and challenges. The interview allowed for good insights, confirming data gathered from Dutch respondents and was therefore considered relevant.

An exciting opportunity for future research arises based on the results of this research. For future research the practical implementation of the identified future roles in healthcare procurement could be studied. The roles are based on challenges faced by purchasing organisations. They are assumed to tackle the challenges, however, in reality it needs to be investigated if this is the case. On top of that, research needs to be conducted for the skillsets required for the practical roles. This can be compared to the skills identified in this research.

## 7. ACKNOWLEDGEMENTS

I would like to thank my supervisor, Dr Klaas Stek, for his feedback and guidance throughout the process of writing my thesis. I would also like to thank the interview participants for their time and useful insights into the research context.

## 8. REFERENCES

- Actiz. (2021). *Houdbaarheid ouderenzorg tot 2050; Scenario 's voor toekomstig zorggebruik, arbeidsmarkt en huisvesting*. Retrieved from
- Babbie, E. (2013). *The Practice of Social Research*.
- Block, M. (2012). Knowledge sharing as the key driver for sustainable innovation of large organisations. *Sustainable Manufacturing: Shaping Global Value Creation*, 337-342.
- Centraal Bureau Statistiek. (2012). *Babyboomers: indrukken vanuit de statistiek*. Retrieved from Den Haag:
- Centraal Bureau Statistiek. (2023a). Arbeidsmarktprofiel van zorg en welzijn in 2022. Retrieved from <https://www.cbs.nl/nl-nl/longread/statistische-trends/2023/arbeidsmarktprofiel-van-zorg-en-welzijn-in-2022?onepage=true#:~:text=In%20het%20tweede%20kwartaal%20van,werkzaam%20in%20zorg%20en%20welzijn>.
- Centraal Bureau Statistiek. (2023b). Prognose: Met hoeveel inwoners zal de bevolking van Nederland nog groeien?
- Centraal Bureau Statistiek. (2024a). Bevolking; geslacht, leeftijd en burgerlijke staat, 1 januari. In.
- Centraal Bureau Statistiek. (2024b). *Verkenning Bevolking 2050: meer ouderen en meer hoogopgeleiden*. Retrieved from
- Centraal Bureau Statistiek. (2024c). Zorguitgaven; kerncijfers. Retrieved from <https://www.cbs.nl/nl-nl/cijfers/detail/84047NED>
- Chen, I. J., Paulraj, A., & Lado, A. A. (2004). Strategic purchasing, supply management, and firm performance. *Journal of Operations Management*, 22(5), 505-523. doi:<https://doi.org/10.1016/j.jom.2004.06.002>
- Cuadros-Casanova, I., Cristiano, A., Biancolini, D., Cimatti, M., Sessa, A. A., Mendez Angarita, V. Y., Dragonetti, C., Pacifici, M., Rondinini, C., & Di Marco, M. (2023). Opportunities and challenges for Common Agricultural Policy reform to support the European

- Green Deal. *Conservation Biology*, 37(3), e14052. doi:<https://doi.org/10.1111/cobi.14052>
- Dimand, A.-M., Abutabenjeh, S., Rodriguez-Plesa, E., Alkadry, M. G., & Ali, S. B. (2022). Human Capital Drivers of Employee Intent to Innovate: The Case of Public Procurement Professionals. *Review of Public Personnel Administration*.
- Eisenhardt, K. M., Santos, F. M., Pettigrew, I. A., Thomas, H., & Whittington, R. (2000). Knowledge based view. *Handbook of strategy and management*. London: Sage Publications.
- European Commission. Directorate-General for, R., Innovation, Breque, M., De Nul, L., & Petridis, A. (2021). *Industry 5.0 – Towards a sustainable, human-centric and resilient European industry*: Publications Office of the European Union.
- European Commission. (2023). Commission welcomes completion of key 'Fit for 55' legislation, putting EU on track to exceed 2030 targets [Press release]. Retrieved from [https://ec.europa.eu/commission/presscorner/detail/en/ip\\_23\\_4754](https://ec.europa.eu/commission/presscorner/detail/en/ip_23_4754)
- Grant, R. (1996). Toward a knowledge-based theory of the firm. *Strategic Management Journal*.
- Hofmarcher, M. M. (2016). Health sector employment growth calls for improvements in labor productivity. *Health Policy*, 120(8), 894-902. Retrieved from <https://ut-on-worldcat-org.ezproxy2.utwente.nl/atoztitles/link/?sid=Elsevier:Scopus>
- Kougias, I., Taylor, N., Kakoulaki, G., & Jäger-Waldau, A. (2021). The role of photovoltaics for the European Green Deal and the recovery plan. *Renewable and Sustainable Energy Reviews*, 144, 111017. doi:<https://doi.org/10.1016/j.rser.2021.111017>
- Li, Z. (2024). Research on the improvement mechanism of value-based healthcare objectives in pharmaceutical group procurement. *Heliyon*, 10(7). Retrieved from <https://ut-on-worldcat-org.ezproxy2.utwente.nl/atoztitles/link/?sid=Elsevier:Scopus>
- Marginson, S. S. (2019). Limitations of human capital theory. *Studies in Higher Education* 44.
- Meehan, J., Menzies, L., & Michaelides, R. (2017). The long shadow of public policy; Barriers to a value-based approach in healthcare procurement. *Journal of Purchasing and Supply Management*, 23(4), 229-241. doi:<https://doi.org/10.1016/j.pursup.2017.05.003>
- Moreno, V., Pinheiro, J., & LA, J. (2012). Resource-Based view, knowledge-based view and the performance of software development compnaies: A study of brazilian SMEs. *Journal of Global Information Management*
- MPZ. (2024). Milieuthermometer Zorg.
- Nederlandse Zorgautoriteit. (2023). *Stand van de zorg 2023*. Retrieved from
- Porter, M. E., & Teisberg, E. O. (2006). *Redefining health care: creating value-based competition on results*: Harvard business press.
- Ranta, V., Keränen, J., & Aarikka-Stenroos, L. (2020). How B2B suppliers articulate customer value propositions in the circular economy: Four innovation-driven value creation logics. *Industrial Marketing Management*, 87, 291-305. doi:<https://doi.org/10.1016/j.indmarman.2019.10.007>
- Rijksinstituut voor Volksgezondheid en Milieu. (2022). The impact of Dutch healthcare on the environment. Environmental footprint method, and examples for a healthy care environment. Retrieved from <https://www.rivm.nl/publicaties/effect-van-nederlandse-zorg-op-milieu-methode-voor-milieuvoetafdruk-en-voorbeelden-voor>
- Soto-Acosta, P., Popa, S., & Martinez-Conesa, I. (2018). Information technology, knowledge management and environmental dynamism as drivers of innovation ambidexterity: a study in SMEs. *Journal of Knowledge Management*, 22(4), 824-849. doi:10.1108/JKM-10-2017-0448
- Stek, K. P. M. (2021). *PURCHASING SKILLS LEADING TO SUCCESS*.
- Tan, E. E. (2014). Human Capital Theory: A Holistic Criticism. *Review of Educational Research*.
- Tassabehji, R., & Moorhouse, A. (2008). The changing role of procurement: Developing professional effectiveness. *Journal of Purchasing and Supply Management*, 14(1), 55-68. doi:<https://doi.org/10.1016/j.pursup.2008.01.005>
- United Nations. (2024). *World Population Prospects: The 2022 Revision*.
- van Straten, B., Dekker, R., van der Sijp, J., & Horeman, T. (2023). Van medisch afval naar grondstof en nieuwe producten. *iAM(3)*, 56-64.
- Veugelers, R. (2024). Green Industrial Policy in Europe: Past, Present, and Prospects. *Journal of Industry, Competition and Trade*, 24(1). Retrieved from <https://ut-on-worldcat-org.ezproxy2.utwente.nl/atoztitles/link/?sid=Elsevier:Scopus>
- Vos, F. G. S., Schiele, H., & Hüttinger, L. (2016). Supplier satisfaction: Explanation and out-of-sample prediction. *Journal of Business Research*, 69(10), 4613-4623. doi:<https://doi.org/10.1016/j.jbusres.2016.04.013>
- Woittiez, I., Ras, M., Eggink, E., & Verbeek-Oudijk, D. (2021). Vraag naar publieke zorg zal extra stijgen door achterblijven aanbod informele hulp. *TSG-Tijdschrift voor gezondheidswetenschappen*, 99(2), 47-53.
- WRR. (2021). *Kiezen voor Houdbare Zorg* Retrieved from
- Yin, R. K. (2016). Qualitative Research from Start to Finish. Retrieved from <https://eli.johogo.com/Class/Qualitative%20Research.pdf>

## 9. APPENDIX

### 9.1 Appendix A

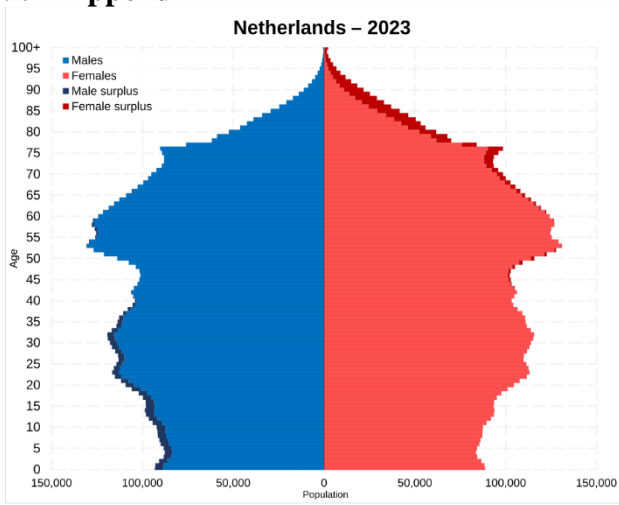


Figure 1: Population Pyramid of the Netherlands. Retrieved from: (United Nations, 2024)

## 9.2 Appendix B

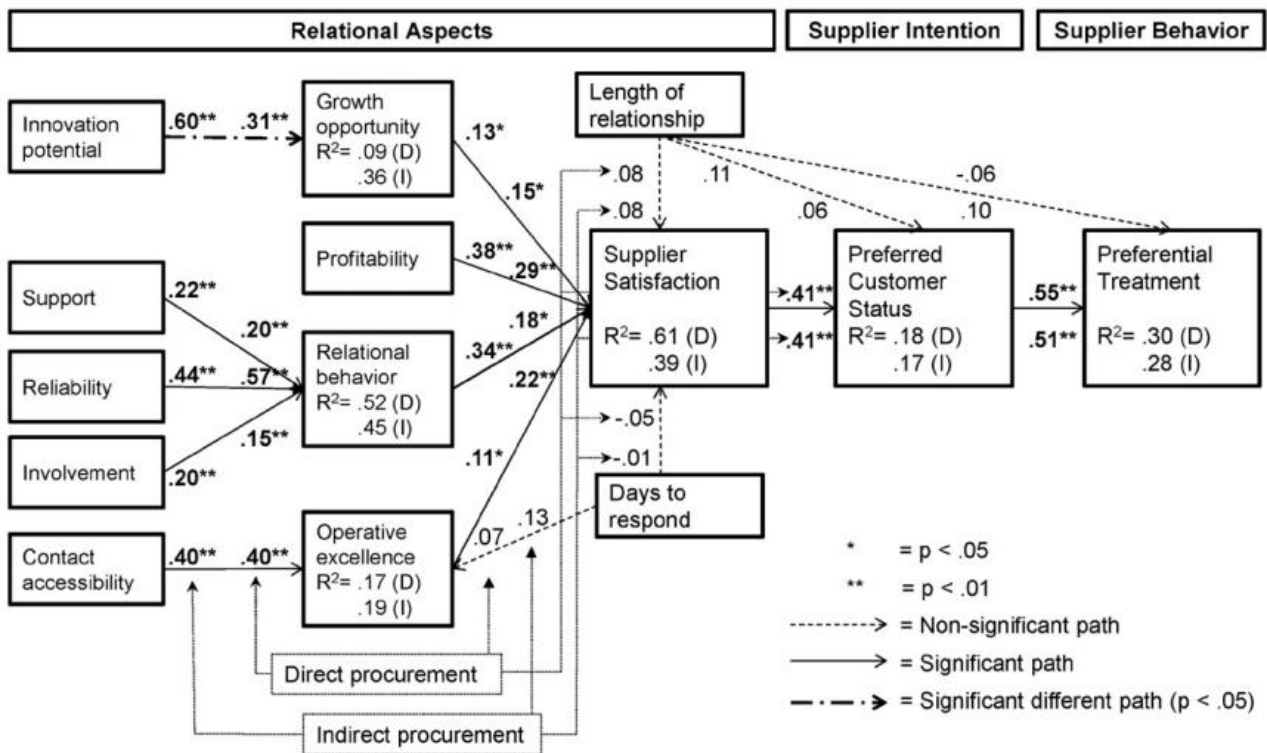


Figure 2: Supplier Satisfaction Model. Retrieved from (Vos et al., 2016).

## 9.3 Appendix C

### Preferential Treatment

*Our firm ...*

PT1 ... allocates our best employees (e.g., most experienced, trained, intelligent) to the relationship with this customer.

PT2 ... shares our best ideas (e.g., newest, most innovative) with this customer.

PT3 ... allocates more financial resources (e.g., capital, cash) to the relationship with this customer.

PT4 ... grants this customer the best utilization of our physical resources (e.g., equipment capacity, scarce materials).

PT5 ... shares more of our capabilities (e.g., skills, know-how, expertise) with this customer.

Preferential Treatment Perks. Retrieved from