

Joakim Lindberg  
Simen Karlsen  
Supervisor: Ragnhild Silkoset

## Master Thesis

# - Causes of Price Premiums with the Presence of Performance Ambiguity in the Occupational Health Services Market -

Hand-in date:

1.9.2011

Campus:

BI Oslo

Exam code and name:

*GRA 19002 Master Thesis*

Program:

Master of Science in Strategic Marketing Management

This thesis is a part of the Master program at BI Norwegian School of Business. The school takes no responsibility for methods used, results found and conclusions drawn.

**Preface**

This master thesis marks the end of a five-year process of obtaining the title Master of Science in Strategic Marketing Management. The thesis has been a long and very rich learning experience.

First, we would like to express our gratitude to our supervisor, Ragnhild Silkoset, for her guidance and help. She has been an ever-present source of help, and has at all times supported us with constructive criticism. Ragnhild has had a profound impact on the direction of our work, and has provided us with invaluable insights.

Second, we thank the companies for participating in our study. Without them this thesis would not have been achievable. In addition, we thank Odd Bjørnstad and Arve Lie at the Norwegian Institute of Occupational Health for their insights and comments throughout the process.

Finally, we want to thank our families and friends for their support and encouragement during this period. We are proud to end our master degree with this thesis report.

Oslo, 1.9.2011

---

Simen Felipe Hedenstad Karlsen

---

Joakim Lindberg

**Abstract**

Managers and academics have historically paid little attention to pricing. To set the right price is the fastest and most effective way for a company to maximize profits. Therefore, it is surprising that it has received limited interest. The main focus of our study is to examine suppliers' ability to gain price premiums through factors that influence performance ambiguity and branding investments. We apply a business-to-business context in the Norwegian Occupational Health Services (OHS) market. This market is characterized by services that are hard to evaluate, due to intangible properties. Consequently, buyers have problems distinguishing between high-quality providers and low-quality providers. This is labeled as performance ambiguity. In the study, we address two types of OHS units: companies that offer OHS service themselves (make) and companies that purchase OHS services from other units (buy). We use the terms internal OHS units (make) and external OHS units (buy) throughout the thesis. We develop a conceptual model that we empirically test, with a sample of 161 OHS units in a quantitative setting.

The results from our study show that buyers exist that are willing to pay a price premium to overcome the problems of performance ambiguity. Furthermore, our findings indicate that switching costs and environmental uncertainty have a significant effect on reducing performance ambiguity, and thereby contribute to sellers' ability to charge price premiums. Contrary to our expectations, brand investments do not have an indirect effect on price premium through brand credibility. Furthermore, signaling brand credibility does not have a significant effect on sellers' propensity to gain price premiums. A possible explanation is that OHS units spend limited resources on marketing efforts. For internal OHS units only environmental uncertainty has an effect on reducing performance ambiguity. This may be due to a lack of perceived competition, and the organization structure in itself.

---

## Table of contents

|   |           |
|---|-----------|
| <b>PREFACE</b> .....  | <b>I</b>  |
| <b>ABSTRACT</b> .....   | <b>II</b> |
| <b>CHAPTER 1 INTRODUCTION</b> .....                                       | <b>1</b>  |
| 1.1 BACKGROUND FOR THE STUDY AND CURRENT RESEARCH ON PRICE PREMIUMS ..... | 1         |
| 1.2 PROBLEM DEFINITION .....  | 2         |
| 1.3 CONTRIBUTIONS .....   | 3         |
| 1.4 LIMITATIONS .....   | 4         |
| 1.5 PROPERTIES OF THE OCCUPATIONAL HEALTH SERVICES MARKET .....           | 4         |
| <b>CHAPTER 2 LITERATURE REVIEW</b> .....                                  | <b>7</b>  |
| 2.1 PERFORMANCE AMBIGUITY .....   | 7         |
| 2.1.1 <i>Information Asymmetry</i> .....                                  | 8         |
| 2.2 TRANSACTION COST THEORY .....   | 11        |
| <b>CHAPTER 3 HYPOTHESES AND RESEARCH MODEL</b> .....                      | <b>13</b> |
| 3.1 THE ROLE OF INTERNAL AND EXTERNAL OHS UNITS .....                     | 13        |
| 3.2 PRICE PREMIUM.....  | 13        |
| 3.3 INDEPENDENT VARIABLES WITH HYPOTHESES.....                            | 15        |
| 3.3.1 <i>Performance Ambiguity and Price Premium</i> .....                | 15        |
| 3.3.2 <i>Quality and Performance Ambiguity</i> .....                      | 16        |
| 3.3.3 <i>Reputation and Performance Ambiguity</i> .....                   | 17        |
| 3.3.4 <i>Punishment and Performance Ambiguity</i> .....                   | 18        |
| 3.3.5 <i>Brand Investments and Brand Credibility</i> .....                | 19        |
| 3.3.6 <i>Brand Credibility and Price Premium</i> .....                    | 20        |
| 3.3.7 <i>Switching Costs and Performance Ambiguity</i> .....              | 21        |
| 3.3.8 <i>Environmental Uncertainty and Performance Ambiguity</i> .....    | 23        |
| 3.3.9 <i>Information Costs Saved and Performance Ambiguity</i> .....      | 24        |
| 3.3.10 <i>Market Turbulence and Performance Ambiguity</i> .....           | 25        |
| 3.4 RESEARCH MODEL .....  | 26        |
| <b>CHAPTER 4 RESEARCH METHODOLOGY</b> .....                               | <b>28</b> |
| 4.1 RESEARCH DESIGN .....   | 28        |
| 4.2 KEY INFORMANTS .....  | 28        |
| 4.3 DATA COLLECTION METHOD .....  | 28        |
| 4.4 SAMPLING .....  | 29        |
| 4.5 MEASURES .....  | 29        |
| 4.5.1 <i>Dependent variable</i> .....                                     | 30        |
| 4.5.2 <i>Independent variables</i> .....                                  | 31        |
| 4.6 PRETEST .....   | 34        |
| <b>CHAPTER 5 DATA ANALYSIS</b> .....                                      | <b>35</b> |
| 5.1 DATA COLLECTION PROCESS .....   | 35        |
| 5.2 SAMPLE CHARACTERISTICS .....  | 36        |
| 5.3 FACTOR ANALYSIS .....   | 37        |

|   |           |
|---|-----------|
| 5.3.1 Requirements before performing EFA and CFA.....                                 | 38        |
| 5.3.2 Exploratory Factor Analysis (EFA).....  | 41        |
| 5.3.3 Confirmatory Factor Analysis (CFA).....   | 43        |
| <b>CHAPTER 6 RESULTS.....</b>   | <b>46</b> |
| 6.1 STRUCTURAL EQUATION MODELING (SEM).....   | 46        |
| 6.1.1 SEM model fit.....  | 46        |
| 6.1.2 SEM model without Performance Ambiguity.....                                    | 48        |
| 6.2 TEST OF THE HYPOTHESES.....   | 49        |
| <b>CHAPTER 7 DISCUSSION.....</b>  | <b>54</b> |
| 7.1 GENERAL DISCUSSION.....   | 54        |
| 7.1.1 Performance Ambiguity and Price Premium.....                                    | 54        |
| 7.1.2 Quality and Performance Ambiguity.....  | 55        |
| 7.1.3 Reputation and Performance Ambiguity.....                                       | 55        |
| 7.1.4 Punishment and Performance Ambiguity.....                                       | 56        |
| 7.1.5 Brand Investments and Brand Credibility.....                                    | 56        |
| 7.1.6 Brand Credibility and Price Premium.....  | 57        |
| 7.1.7 Switching Costs and Performance Ambiguity.....                                  | 58        |
| 7.1.8 Environmental Uncertainty and Performance Ambiguity.....                        | 58        |
| 7.1.9 Information Costs Saved and Performance Ambiguity.....                          | 59        |
| 7.2 THEORETICAL IMPLICATIONS.....   | 59        |
| 7.3 MANAGERIAL IMPLICATIONS.....  | 61        |
| <b>CHAPTER 8 LIMITATIONS AND FUTURE RESEARCH.....</b>                                 | <b>64</b> |
| <b>REFERENCES.....</b>  | <b>65</b> |
| <b>APPENDICES.....</b>  | <b>70</b> |
| APPENDIX 1 – OPERATIONALIZATION OF THE VARIABLES.....                                 | 70        |
| APPENDIX 2 – QUESTIONNAIRE.....   | 71        |
| APPENDIX 3 – COVER LETTER.....  | 75        |
| APPENDIX 4 – RESPONSE RATE.....   | 77        |
| APPENDIX 5 – CFA MEASUREMENT MODEL STANDARDIZED REGRESSION COEFFICIENTS.....          | 77        |
| APPENDIX 6 – CFA MEASUREMENT MODEL T-VALUES.....                                      | 78        |
| APPENDIX 7 – CFA IMPROVED MEASUREMENT MODEL STANDARDIZED REGRESSION COEFFICIENTS..... | 79        |
| APPENDIX 8 – RECODED MEASUREMENT MODEL STANDARDIZED REGRESSION COEFFICIENTS.....      | 80        |
| APPENDIX 9 – SEM EXTERNAL OHS STANDARDIZED REGRESSION COEFFICIENTS.....               | 81        |
| APPENDIX 10 – SEM INTERNAL OHS STANDARDIZED REGRESSION COEFFICIENTS.....              | 82        |
| APPENDIX 11 – SEM EXTERNAL OHS T-VALUES.....  | 83        |
| APPENDIX 12 – SEM INTERNAL OHS T-VALUES.....  | 84        |
| APPENDIX 13 – SEM WITHOUT PERFORMANCE AMBIGUITY EXTERNAL OHS UNITS T-VALUES.....      | 85        |
| APPENDIX 14 – SEM WITHOUT PERFORMANCE AMBIGUITY INTERNAL OHS UNITS T-VALUES.....      | 86        |
| APPENDIX 15 – PRELIMINARY THESIS REPORT.....  | 86        |

## **Chapter 1 Introduction**

In the following chapter we present the background for the study and current research on price premiums. We develop a problem definition and discuss contributions and limitations, before looking into the properties of the Norwegian Occupational Health Services market.

### ***1.1 Background for the study and current research on price premiums***

The background for the study is the new law regulations that were amended on 1.1.2010. These new regulations require new branches of the Norwegian industry to offer Occupational Health Services (OHS) to their employees. The focus of the study is to investigate how OHS units can gain price premiums. Throughout the paper, we examine this phenomenon from the business-to-business market perspective. In the study, we address two types of OHS units: companies that offer OHS service themselves (make) and companies that purchase OHS services from other units (buy). We use the terms internal OHS units (make) and external OHS units (buy) throughout the thesis. This is consistent with transaction cost theory proposed by Williamson (1975). OHS units have traditionally paid little attention to marketing their services (Meeting with NIOH, 23.6.2010). Nevertheless, in recent years, OHS units face increased competition with larger private-owned players entering the market (Lie 2009). As such, we investigate which factors influence price premiums.

Current research proposes different strategies and methods on how to achieve price premiums. Most of the literature on how to charge price premiums is related to quality, reputation and uncertainty. Rao and Monroe (1996) argue that delivering high product quality as a strategy can provide sellers with the ability to charge price premiums. They further argue that charging a price premium may be used as a signal to solve problems related to moral hazard. When moral hazard is present, Monroe (2003, 86) proposes that it can be solved by offering incentives such as quality signals. Buyers can then pay a price premium in order to receive the level of quality desired. The more the buyers are concerned about quality, the greater their willingness to pay price premiums. Klein and Leffler (1981) also study the link between quality and price premium. However, they incorporate the effect of reputation on price premium. They argue that under some conditions,

---

sellers can charge a price premium that is higher than the minimum average cost of high quality. Price premium can be thought of as “protection money” paid by buyers to secure performance, and thereby reduce uncertainty around the transaction. Also, Klein and Leffler (1981) investigate the link between punishment and price premium. If a seller wishes to cheat customers, the ultimate punishment they receive is that the buyer stops purchasing their services. Furthermore, they argue that sellers with a positive reputation receive a price premium as a return on their investments. This is further supported by Shapiro (1982, 1983).

Rao and Bergen (1992) study the link between quality, reputation and information asymmetry in relation with price premium. Some buyers are willing to pay a price premium in order to ensure that the promised quality of a product is delivered. They further argue that the logic for price premiums is information asymmetry. Under conditions of uncertainty, buyers may pay a price premium in order to prevent sellers from cheating on quality. However, buyers’ willingness to pay price premiums for quality declines when a seller has a reputation for good quality, as buyers trust the quality delivered from sellers. This contrasts with the findings of Klein and Leffler (1981) and Shapiro (1982, 1983).

Nelson (1970) investigates the link between uncertainty and price premium and the fact that buyers are likely to pay a price premium for services where the quality cannot be discovered before purchase. Mishra, Heide and Cort (1998) also find that price premium is a function of information asymmetry. The less information available to buyers the greater the required price premium. Lastly, when focusing on the link between branding and price premium, Erdem, Swait and Louviere (2002) find that the effect of investing in brand credibility should be that companies gain a price premium.

### ***1.2 Problem definition***

Price has historically been one of the least understood and most underutilized marketing tools in organizations (Morris, Avila, and Pitt 1996). It is where marketers feel the most pressure to perform and where they are least certain that they do a good job. Smith et al. (1999) agree that pricing is the biggest marketing

headache for managers, as it is difficult to set objectives and measure results.

Furthermore, Smith et al. (1999) argue that a slight change in the pricing strategy of a company can lead to tremendous consequences. To set the right price is essential, as it is the fastest and most effective way for a company to realize its maximum profits. Thus, it is crucial to gain control over the pricing functions. However, Morris, Avila and Pitt (1996) argue that managers have tended to view price by focusing on margins and cost, and not as a strategic marketing variable.

Within pricing strategies, we address price premiums in our study. Price premium is defined as: *“the difference between the super-high price and the perfectly competitive price for high-quality output”* (Rao and Monroe 1996, 512). It has been found that because of information asymmetry, a buyer may allow the seller to charge a higher price to reduce the level of uncertainty (Akerlof 1970). Snow (2010) argues that due to performance ambiguity, some are willing to pay for information, thus reducing the level of uncertainty. According to Lie (2009), the Norwegian Institute of Occupational Health (NIOH) experience that the majority of buyers of OHS services are not able to distinguish between effective OHS units and “charlatans”. This creates a degree of performance ambiguity in the OHS market. Rao and Bergen (1992) show that under conditions of uncertainty and complexity, buyers may knowingly pay price premiums to sellers in order to prevent them from cheating on quality. In addition, quality-seeking buyers are more likely to pay a price premium for services whose quality cannot be ascertained prior to purchase (Nelson 1970). Price premiums can therefore play a key role in the OHS market. However, price premiums can only be achieved if one develops a better understanding of which factors influence the likelihood of sellers receiving price premiums. In this respect, we propose the following problem definition:

***Which factors in the OHS market contribute to suppliers’ ability to gain price premiums in a market influenced by performance ambiguity?***

### ***1.3 Contributions***

Hinterhuber (2004) finds that pricing has received limited attention by academics. As such, our study contributes to the under-studied area of pricing. Furthermore, research has shown contradictory results of various factors on price premiums



---

(Shapiro 1982, 1983; Rao and Monroe 1996; Klein and Leffler 1981; Rao and Bergen 1992; Nelson 1970; Mishra, Heide, and Cort 1998; Erdem, Swait, and Louviere 2002). Therefore, we contribute to further theoretical and managerial comprehension of factors influencing the construct price premium. Monroe (2003, 3) argues that managers make bad pricing decisions because they rely on invalid assumptions about their customers, their competitors or inadequate and incorrect information. As such, our study aims to provide managers with a better foundation regarding decisions that can be used to obtain price premiums. Our study also gives a better understanding of factors that have an impact on performance ambiguity, and how managers can utilize factors to reduce performance ambiguity in connection with price premium. Lastly, we contribute to transaction cost theory by examining make or buy decisions linked with performance ambiguity and price premiums.

#### ***1.4 Limitations***

This thesis has some limitations in relation to the range of the study. First, the thesis is limited to a national setting. The focus is therefore restricted to a Norwegian setting and not an international setting. Furthermore, we only investigate one market, the OHS market. Within the OHS market we limit our study by only collecting responses from managers of OHS units. Also, there exist several definitions of the concept price premium, however in the thesis we follow Rao and Monroe's (1996) definition. These limitations are deliberately incorporated in our work to set the scope and provide guidelines for the thesis.

#### ***1.5 Properties of the Occupational Health Services market***

The OHS market in the Norwegian setting has undergone vast changes (Lie 2009). The modern OHS supplier dates back to 1977, when the Work Environment Act was passed (Lie 2009). Norwegian work environment legislation, aligned with rules and regulations in the European Union, make up the framework for the market. The regulation states: 1) The employer is responsible for having an OHS in place and assessing the quality of the OHS personnel, and 2) Describes the types of services companies should require of an OHS. In Norway, two ministries are involved: the Ministry of Labor and Social Inclusion and the Ministry of Health and Welfare (Meeting with NIOH, 23.6.2010).

---

Browsing the OHS market is a complex task. The market is multidisciplinary, meaning that some OHS units provide services to many companies. Both internal and external OHS units make up the market. In an European context, Norwegian OHS units are relatively small, with an average of four full-time OHS professionals covering 2000 employees (Lie 2009). The OHS registry, published by NIOH, provides the closest estimate of number of players in the market. Now, around 410 OHS units employ some 2500 professionals (NIOH 2010). It should be noted that the registry is voluntarily and therefore not completely accurate (Meeting with NIOH, 23.6.2010).

As mentioned, Norwegian OHS units focus little on marketing of its services, but focus on competing on price (Meeting with NIOH, 23.6.2010). The reason for this might be that law regulates the market. Recently, two trends have developed in the market: 1) OHS units merge, and as such larger players enters the market, and 2) The OHS units and market as a whole moves towards commercialization (Lie 2009). Hence, marketing and pricing structures become more important. Lately, pricing structures have moved towards a basic price and a price by the hour (Meeting with NIOH, 23.6.2010). These trends have led to an increase in competition in the market. In order to stay competitive OHS units have started to change their organizational structure from non-profit organizations to private companies (Lie 2009).

As of 1.1.2010, two new regulations were introduced. Firstly, the introduction of accreditation of providers of OHS, and secondly the introduction of industry regulation for new sectors of the Norwegian market (Norwegian Labour Inspection Authority 2010). New sectors that are required to offer OHS services to their employees include, amongst others, education, health care and hairdressers (Norwegian Labour Inspection Authority 2010). Severe changes will occur in the marketplace due to these law amendments. International players and franchise units are likely to enter the market (Meeting with NIOH, 23.6.2010). OHS units operating in the market now fear this competition. Traditionally, OHS units have not considered competition as a major threat. Therefore, they are likely to oppose these changes. In addition, the OHS units have not conveyed their added value to their customers. They have focused on price, presenting it as the lowest possible

---

cost for buyers. As such, the focus has only been on price and not on quality (Meeting with NIOH, 23.6.2010).

The rest of the thesis is organized as follows: The following chapter presents the relevant literature connected with our study. We then discuss the dependent and independent variables, with hypotheses that together make up our research model. Thereafter, we propose the research methodology, before presenting the data analysis. Next we describe the results from the structural equation model and perform hypotheses testing. Subsequently, we discuss the findings of the study, and its implications for theory and managerial practice. We conclude by highlighting the limitations of our study, and provide possible areas for future research.

---

## Chapter 2 Literature review

In the following chapter we present the relevant literature connected with our study. We examine performance ambiguity and information asymmetry before addressing transaction cost theory.

### *2.1 Performance Ambiguity*

Ellsberg (1961) was one of the first to discuss ambiguity in an economical setting. It refers to something vague or unsure, and is often mentioned in connection with uncertainty of information. Snow (2010, 133) builds upon Ellsberg's research and proposes the following definition of ambiguity: "*uncertainty about probability, created by missing information that is relevant and could be known*". Mishra, Heide and Cort (1998, 283) provide a more accurate definition of performance ambiguity: "*the difficulties faced by the customers in evaluating a service offering*". Snow (2010) argues that there exists ambiguity averters that are willing to pay for information that reduces ambiguity. Nelson (1970) discusses ambiguity in relation with determining quality of products. He postulates that quality is among the more difficult types of information to evaluate. Ambiguity creates uncertainty for customers. Such problems are likely to be found in the OHS market, consisting of different providers with services that can be challenging to evaluate (Lie 2009). Often, consumers are risk averse and tend to choose higher-priced alternatives in order to reduce the level of uncertainty (Zeithaml 1988). We address this type of difficulty in relation with OHS services throughout the paper as performance ambiguity.

Signaling is an important mechanism that may be used in order to overcome problems with performance ambiguity (Spence 2002). It can also be used to distinguish low-quality providers from high-quality providers (Kirmani and Rao 2000). A signal is defined as: "*an action that the seller can take to convey information credibly about unobservable quality to the buyer*" (Rao, Lu, and Ruekert 1999, 259). Serious actors might unravel problems related to performance ambiguity in connection with information asymmetry and adverse selection through signaling.

---

Lie (2009) states that the OHS market is moving towards a free market characterized by increasing competition between service providers. Accordingly, signaling might be used to reduce performance ambiguity by communicating the accurate quality provided by an OHS unit.

Signaling to reduce the level of performance ambiguity can be transmitted in many forms like brand name, price or advertising expenditures (Kirmani and Rao 2000). This is further supported by Erdem and Swait (1998) who argue that brands can be used as a signal mechanism in order to reduce customers' ambiguity related to purchases. Consequently, signaling can be used as an instrument to differentiate from competitors (Grant 2010; Porter 1996). Traditionally, signaling through marketing efforts has not been widely used in the OHS market (Meeting with NIOH, 23.6.2010).

### *2.1.1 Information Asymmetry*

Information asymmetry can be described as one party acquiring more or better information than the other in a given transaction (Akerlof 1970; Lützkendorf and Speer 2005; Husted 2007). Akerlof (1970) discusses how some car sellers have more knowledge about the product than the buyers, making it problematic for buyers to separate between high and low-quality cars. Akerlof (1970) concludes that information asymmetry exists in the marketplace, therefore it can be argued that a perfect market does not exist. However, Darby and Karni (1973) claim that the closest one can get to a perfect market is the market for search services, as consumers can easily evaluate such services. Credence services on the other hand are more difficult to evaluate. As a consequence, information asymmetry is more distinctive in markets with experience and credence services. This is because it is not necessarily possible to evaluate the service, even after purchase and consumption (Darby and Karni 1973). In addition, Urbany, Dickson and Kalapurakal (1996) find that customers do not inform themselves fully about prices, as searching in the market is costly.

Sellers competing in the marketplace can solve the problem of information asymmetry by the use of signaling to communicate their offerings (Kirmani and Rao 2000). In general, the more intangible a service is, the greater the information

asymmetry between the company and its customers (Skaggs and Snow 2004). Because OHS services are hard to evaluate and intangible, NIOH together with the Labor Inspectorate developed a quality assurance system named “Good Occupational Health Services” (Lie 2009). This evaluation system can be seen upon as a tool for reducing performance ambiguity for buyers in the OHS marketplace.

In order to fully understanding the underlying concept of information asymmetry the following table is proposed by Husted (2007) (Table 1):

Table 1: Information asymmetry

|                       |            | Information Completeness             |                        |
|-----------------------|------------|--------------------------------------|------------------------|
|                       |            | Incomplete                           | Complete               |
| Information asymmetry | Asymmetric | Adverse selection                    | Moral hazard           |
|                       | Symmetric  | Incomplete and symmetric information | No information problem |

As we see from Table 1, information asymmetry can occur in two different settings: adverse selection and moral hazard. The rationale behind adverse selection is that customers are not always able to detect good quality from bad quality as they have access to different information. Also, the buyers will have difficulty distinguishing between high and low-quality products (Mishra, Heide, and Cort 1998). These properties are present in the OHS market, with a multidisciplinary and complex structure (Lie 2009). As a consequence, adverse selection issues might occur in the market of study.

When asymmetric information exists in a market, it is likely that the customers select the bad products instead of the good products. Akerlof (1970) examined this when he studied the health insurance industry. Thus, adverse selection states whether a seller possess the skills required to acquire a certain quality or not (Akerlof 1970). In the OHS market there can be buyers without the required skills for evaluating quality, substantiating the presence of adverse selection issues in the market. Over time however, customers are likely to discover the intentions of sellers’ dishonesties. This might result in a negative impact on a seller’s reputation (Erdem and Swait 1998). According to Husted (2007) adverse selection occurs before contract agreement and the motives between the relationship (buyer

---

and seller) is hidden in an attempt to obtain a resource. In such situations, information is both asymmetric and incomplete.

To overcome the problem with adverse selection, the sellers can use signaling, which sheds light on the information about the product characteristics (Mishra, Heide, and Cort 1998). The “Good Occupational Health Services” evaluation system is an example of a signal intended to overcome adverse selection (Lie 2009). In situations of information asymmetry, it is possible for people to signal their type (i.e., education) and thus transfer this information to the other party and therefore resolving the asymmetry (Spence 1973). Furthermore, Keller and Lehman (2003) argue that a brand can serve as a signal by highlighting the different characteristics of the product or service and thereby decrease the perceived risk. Thus, it can help the customer to determine the quality of the product or service. This is further supported by Mishra, Heide and Cort (1998), suggesting that a brand name might serve as a signaling tool. However, branding and marketing efforts are not extensively used in the OHS market as a signaling mechanism (Meeting with NIOH, 23.6.2010). When emphasizing high quality, signaling efforts should only be undertaken when a company provides the customers with the actual promised quality (Kirmani and Rao 2000).

The second problem related to information asymmetry is moral hazard. Moral hazard is characterized by hidden actions or hidden effort. In essence, it is difficult to observe the effort that parties puts into action (Husted 2007, 185). This is problematic as the seller can influence the level of quality provided for each transaction (Mishra, Heide, and Cort 1998). Holmstrom (1979, 74) proposes the following:

*It has long been recognized that a problem of moral hazard may arise when individuals engage in risk sharing under conditions such that their privately taken actions affect the probability distribution of the outcome.*

The problem of moral hazard appears since the seller has the ability and motivation to cheat by providing low quality instead of the agreed high quality. Unfortunately, low quality can be difficult to discover (Mishra, Heide, and Cort 1998). As Husted (2007) argues, moral hazard occurs after a contract is signed. In

---

the OHS market contracts often last several and quality is difficult to evaluate years (Meeting with NIOH, 27.4.2011). An example is that if a company spends a given amount on OHS services in order to improve the well-being of employees, it is close to impossible to measure the output or end result of a given input. It should be noted that when the contract signing occurs, the information is complete and symmetric, as no action on how to behave afterwards is taken into consideration. However, as the intention between buyer and seller are unknown after contract signing, moral hazard is characterized as complete, but with asymmetric information (Husted 2007). The main difference between adverse selection and moral hazard is that adverse selection occurs before the contract is agreed upon, while moral hazard with hidden information occurs after the contract is agreed (Husted 2007, 185).

To overcome the problem with moral hazard, one can use incentives, which prevent subsequent quality cheating (Mishra, Heide, and Cort 1998). Kreps (1990, 577) argues that the quality problem may be solved if the customer provides the seller with incentives to deliver the undertaken quality. Mishra, Heide and Cort (1998) suggest that incentives, like price premiums, may prevent moral hazard, as buyers are willing to pay a price premium in order to reduce the seller's ability and motivation to cheat.

## ***2.2 Transaction Cost Theory***

Transaction cost theory builds upon the fundamental contribution of Williamson (1975; 1981). Performance ambiguity is a principal source of transaction costs (Bowen and Jones 1986). The central question within transaction cost theory is whether a transaction is more efficiently performed within a company (make) or outside the company by other providers (buy) (Geyskens, Steenkamp, and Kumar 2006). Hence, transaction cost theory revolves around the choice of the company (make) or the market (buy). The OHS market consists of companies selecting either make or buy strategies. In transaction cost theory the focus is on the analysis of exchange and the central claim is that transaction will be handled in such a way as to minimize the cost involved in carrying out the transaction (David and Han 2004). The greater the performance ambiguity the higher the associated transaction cost in a given transaction (Bowen and Jones 1986). An indication in



---

the OHS market is that smaller companies buy their services from external OHS units, and thereby pursue a buy strategy. Larger companies are more prone to selecting a make strategy, thus having their own internal OHS unit within the company (Meeting with NIOH, 23.6.2010). The assumption within transaction cost theory is that a buy strategy is more efficient than a make strategy due to the benefits of competition. When a “market failure” occurs, a make strategy is assumed to be more efficient (Geyskens, Steenkamp, and Kumar 2006). Furthermore, channel members are assumed to be limited by bounded rationality and behave opportunistically (Klein 1989). These theories are connected with performance ambiguity, in the sense that opportunistic actors might contribute to increase ambiguity in the OHS market. This is because actors have limited information regarding transactions (Klein 1989).

According to transaction cost theory, there are three key dimensions that contribute to increasing transaction cost and combined create “market failure” (Geyskens, Steenkamp, and Kumar 2006). These dimensions are asset specificity, uncertainty and transaction frequency (Williamson 1975). Transaction-specific assets are ones that are tailored to a particular transaction, and cannot be easily used outside the relationships of the parties of the transaction (Geyskens, Steenkamp, and Kumar 2006). If the specificity is irrelevant, the asset specificity is zero. The second dimension, uncertainty, refers to when there is unpredictability *ex ante* of the transaction. If uncertainty is present the performance cannot be evaluated ahead of the transaction. Such uncertainty is present in the OHS market, as the services both have credence qualities and is highly intangible. Skaggs and Snow (2004) argue that intangible services create more uncertainty. The last dimension, transaction frequency, refers to the extent to which transactions recur (Geyskens, Steenkamp, and Kumar 2006). A make strategy may be the preferred choice if the transaction has a high level of recurrence (Rindfleisch and Heide 1997). It is hard to establish how frequent transactions occur in the OHS market, as contracts are ongoing and complex. In addition, the OHS services purchased by companies varies considerably (Lie 2009).

---

## **Chapter 3 Hypotheses and Research Model**

This chapter begins with an explanation of the role of internal and external OHS. We then present the dependent variable, price premium, before examining the independent variables respectively. Each of the independent variables has related hypotheses. Lastly, we propose the research model.

### ***3.1 The role of internal and external OHS units***

There are differences between internal and external OHS units. Internal OHS units do not serve companies other than their owner. This is more common for large enterprises such as Aker. External OHS units are characterized as units serving several companies at the same time. Aleris AS is an example of an external unit. We want to investigate if price premium, performance ambiguity and branding investments influence internal and external OHS units differently.

### ***3.2 Price Premium***

We examine factors contributing to suppliers' ability to charge price premiums in the OHS market. Aligned with this frame of mind we base our study on the dependent variable price premium. Rao and Monroe (1996, 512) define price premium as: "*the difference between the super-high price and the perfectly competitive price for high-quality output*". In essence, focus on quality will increase revenue and lead to higher profits (Babakus, Beinstock, and Van Scotter 2004). Furthermore, Klein and Leffler (1981) argue that the high prices accrue to sellers in the form of above-average profits. Price premiums differ from premium prices. Premium prices are considerably above average, reflecting the higher cost of producing high quality, but may not necessarily provide profits to sellers (Rao and Bergen 1992).

A main rationale for price premiums is information asymmetry (Rao and Bergen 1992). Information asymmetry stems upon the notion that not all buyers possess all information about the quality of the services provided (Akerlof 1970). This implies that the supplier has more information about the object of an exchange compared with the buyer (Mishra, Heide, and Cort 1998, 277). Because of the new law regulations in the OHS market, more companies must select an OHS unit

---

(Lie 2009). As companies with no previous experience in the OHS market are forced to select an OHS unit, information asymmetry can occur in the selected market. Such information asymmetry can result in opportunistic behavior (Klein 1989). When such situations arise, two problems exist: adverse selection and moral hazard. In terms of adverse selection, suppliers do not possess the skills required to provide certain quality levels (Mishra, Heide, and Cort 1998). There might be instances where OHS customers cannot identify whether an OHS unit provides sufficient quality or not. Moral hazard occurs when suppliers easily influence the level of quality provided for each transaction (Mishra, Heide, and Cort 1998). In addition, moral hazard arises because suppliers have the ability and motivation to reduce the quality. The motivation for an OHS unit to cheat occurs because companies searching for an OHS unit do not necessarily have sufficient information. Therefore, companies might be willing to pay a price premium to reduce the risk of cheating.

The theory of information economics is linked with information asymmetry theory. Nelson (1970) developed a framework for how difficult it is to evaluate services based on their properties. He classifies search services as types where quality can be determined prior to purchase. Therefore, customers do not need to use much effort on evaluating the service. In experience services, quality can only be determined after purchase and usage (Darby and Karni 1973). Darby and Karni (1973) added a third category to Nelson's framework, credence services. It refers to services where quality is not necessarily possible to evaluate even after purchase and consumption. This is due to the high level of knowledge required to understand what the service does. Since OHS units offer services that are hard to evaluate and are intangible, they are classified as credence services. Because of this, there is an incentive for OHS units to cheat by offering unnecessary services for an extra fee. In addition, it can be hard for companies to define what to expect from the services with credence properties, as they might lack the expertise of identifying their own needs and demands (Galetzka, Verhoeven, and Pruyn 2006). This might be a problem for buyers in the market for OHS services. In credence setting, the customers tend to focus less on price, since they do not know how to compare prices with alternatives (Monroe 2003, 66). A similar view is proposed by Hsieh, Chiu and Chiang (2005), who postulate that credence services are often specialized for each customer. This makes comparison based on price more

---

difficult. Lie (2009) finds that the number of OHS services purchased by companies varies considerably, supporting the notion that services are specialized in the OHS market.

### ***3.3 Independent variables with hypotheses***

#### *3.3.1 Performance Ambiguity and Price Premium*

Performance ambiguity relates to what degree buyers can judge service quality prior to purchase and during use. Specifically, revealing a supplier's true level of performance (Stump and Heide 1996). It stems from the inability to measure performance of parties to an exchange, or inability even if performance can be measured, to accurately value it (Bowen and Jones 1986, 431). As the OHS market is characterized by services that are difficult to evaluate, with credence qualities, it is reasonable to believe that there exists performance ambiguity in the market. This corresponds with Bowen and Jones (1986), who argue that the dominating factor of performance ambiguity for services in particular, is the presence of intangibility. The more intangible the service is, the greater the performance ambiguity, as less evidence is available to assess the level of performance. Because buyers consider services from external OHS in the open market, with many actors, it is reasonable to believe that performance ambiguity is more present in this context than for internal OHS units.

Zeithaml (1988) argues that consumers are risk averse. In order to overcome risk, they tend to select higher-priced alternatives to reduce the uncertainty, and thereby avoid the wrong alternative. This risk aversion is more likely to occur in an open market where buyers of external OHS services must evaluate the different levels of price offered by competing OHS units. As the company owns internal OHS units themselves, the level of performance ambiguity may be reduced, due to less perceived risk. Therefore, price premiums are not evaluated to the same extent as for buyers of external OHS units. Snow (2010) denotes the fact that risk averters willingly pay a price premium to reduce ambiguity. Following the preceding argument, risk is likely to be higher in the external OHS market, as information is more ambiguous. Hence, paying price premiums to reduce ambiguity is more likely to play an important role in the external OHS market. Therefore, we propose the following:

---

H1a: *External OHS units experience a positive impact from performance ambiguity on price premium.*

H1b: *Internal OHS units do not experience a positive impact from performance ambiguity on price premium.*

### 3.3.2 Quality and Performance Ambiguity

According to Zeithaml (1988, 3) quality is defined as: “*superiority or excellence*”. A more general definition is proposed by the American Society for Quality (2010), which defines quality as: “*the characteristics of a product or service that bear on its ability to satisfy stated or implied needs*”. In other words, quality is an essential aspect for customers making a choice. Quality is therefore also important for units to stay competitive, sustain over time and differentiate themselves from competition.

In the OHS market, quality is of vital importance. Particularly after the new law regulations, enabling OHS companies to compete against each other in an open market (Norwegian Labour Inspection Authority 2010). As a result, quality might be an important factor for companies deciding on their choice of an OHS unit. Since a typical OHS unit consists of several positions such as nurses, ergonomists and physicians, quality evaluation can vary depending on the interactions in the treatment process (Lie 2009). Therefore, it might be difficult to evaluate the overall quality of an OHS unit. In addition, quality in respect of OHS may be hard to evaluate after treatment because it is a credence service (Darby and Karni 1973). Ostrom and Iacobucci (1995) argue that because the quality of credence services is difficult to judge, a low price may be a cue for poor quality. It is therefore evident that evaluation of quality from the buyer’s perspective is important both when dealing with internal and external OHS units. As previously mentioned, a higher level of performance ambiguity is more likely to occur in the market for external OHS units. As such, evaluating quality can be harder for buyers looking for external OHS units compared with internal OHS units.

Moreover, perceived quality is also a major factor with regards to choosing OHS units, because service quality is formed by prior experiences. Hence, it refers to

---

the customer's judgment of the superiority or excellence. Keller (2003, 238) defines perceived service quality as: "*the customers perception of the overall quality or advantage of a service relative to relevant alternatives and with respect to its intended purpose*". For internal OHS units the level of quality will have a limited effect on reducing performance ambiguity, as they are owned by the company that is responsible for the evaluation. As such, the incentives for evaluating and comparing the level of quality are absent, compared with buyers evaluating the level of quality for external OHS units. For buyers looking for external OHS units, quality is more likely to reduce performance ambiguity, as long as quality can be evaluated to some extent. For instance, a buyer in the market for an external OHS unit might be able to evaluate and compare some characteristics of OHS offerings, despite the fact that there is a limited amount of information for buyers. Quality might therefore be used as a signaling strategy for external OHS units, in order to overcome problems with performance ambiguity (Spence 2002). As Kirmani and Rao (2000) argue, signaling quality can distinguish low-quality providers from high-quality providers. Such signaling could reduce performance ambiguity for buyers in the market for external OHS units. Therefore, we propose the following:

H2a: *External OHS units experience a positive impact from quality on performance ambiguity.*

H2b: *Internal OHS units do not experience a positive impact from quality on performance ambiguity.*

### 3.3.3 Reputation and Performance Ambiguity

Shapiro (1983) postulates that reputation only makes sense in an imperfect information world. Imperfect information is present in the OHS market. As a consequence, reputation might be one way for buyers to overcome the problem of performance ambiguity in the OHS market (Herbig and Milewicz 1993). Herbig and Milewicz (1993, 18) define reputation as: "*the estimation of the consistency over time of an attribute of an entity*". They further argue that reputation is established by the flow of information from one user to another. Such a flow of information is more likely to occur in the external OHS market. A transaction

---

between two parties must have occurred in order for a reputation to be established (Herbig and Milewicz 1993). Internal OHS units may not consider a transaction between itself and its owner as a transaction between two parties. Therefore, reputation might be less important for internal OHS units compared with external OHS units where transactions actually consist of two separate parties. As external OHS units compete in the open market (Lie 2009), using reputation as a signaling tool to reduce performance ambiguity becomes more essential. This is because potential buyers might use reputation as a tool to evaluate external OHS units.

In addition, reputation occurs primarily through signaling (Herbig and Milewicz 1993), meaning: “*actions that the parties take to reveal their true types*”(Kirmani and Rao 2000, 66). In essence, signaling helps identify procedures unknown to the buyers because the motives of a potential seller can be unknown or hidden. In the OHS market, this can be problematic when the buyer does not have sufficient information about OHS units. Hence, signaling might increase reputation and prevent opportunistic behavior, since its purpose is to reduce performance ambiguity. In line with our previous argument, signaling a reputation is more relevant for external OHS units. Therefore, we propose the following:

*H3a: External OHS units experience a positive impact from reputation on performance ambiguity.*

*H3b: Internal OHS units do not experience a positive impact from reputation on performance ambiguity.*

#### *3.3.4 Punishment and Performance Ambiguity*

Punishment follows the notion that OHS units can have an incentive to cheat, by providing poor quality. This can occur if the buyers do not have the opportunity or ability to punish the seller. If sellers can cheat the customer, they are likely to earn above-average profits by charging a price premium. The ultimate punishment an OHS unit can receive is that the buyer stops purchasing their services. Obviously, if buyers punish the seller, they will lose all future profits (Rao and Bergen 1992). Recent trends in the OHS market show that buyers change their OHS units more frequently (Meeting with NIOH, 23.6.2010). This could be due to such cheating.

---

It is more likely that external OHS units expose themselves to punishment from their buyers. This is because internal OHS units are less likely to cheat their owners than external OHS units. In addition, control mechanisms attempting to detect cheating might be more common in the market for external OHS units, thus making punishment more frequent.

Because we deal with a credence service, evaluating cheating is a problem. As such, punishment might be an important variable in the OHS market. Given that the buyer cannot punish the seller, there is a clear incentive of obtaining a price premium in the marketplace. Rao and Bergen (1992) argue that buyers reward honest sellers with price premiums and punish dishonest sellers by denying them future sales. Therefore, we propose the following:

*H4a: External OHS units experience a negative impact from punishment on performance ambiguity.*

*H4b: Internal OHS units do not experience a negative impact from punishment on performance ambiguity.*

### *3.3.5 Brand Investments and Brand Credibility*

When other factors such as reputation and quality are lacking or hard to evaluate, branding can serve as a promise to the customer (Erdem and Swait 1998). This is based upon the notion that the brand will convey and confirm the seller as the responsible body in a given transaction. The American Marketing Association define brand as a: “*name, term, design, symbol, or any other feature that identifies one seller's good or service as distinct from those of other sellers*” (American Marketing Association 2010). In the OHS market, brands might serve as an important information cue contributing to separating between competing OHS units. Arguably, this will be more important for external OHS units competing in the open market, compared with internal OHS units. Since internal OHS units are owned by the parent company, they are not likely to use resources to brand their services.



---

Brand investments can lead to brand credibility (Erdem and Swait 1998). Erdem and Swait (2004, 192) define brand credibility as: “*the believability of the product information contained in a brand, which requires that consumers perceive that the brand have the ability (i.e., expertise) and willingness (i.e., trustworthiness) to continuously deliver what has been promised*”. Erdem and Swait (1998) argue that brand credibility is one of the most important choice criteria for buyers.

Furthermore, they postulate that when a market is characterized by imperfect and asymmetric information, it is important for a company to convey credible information to consumers (Erdem and Swait 1998). Hence, the information about a brand’s position signaled to consumers by a company should be perceived as truthful and dependable. Buyers looking for external OHS units must deal with asymmetric information in a given transaction to a greater extent than “buyers” of internal OHS services. Therefore brand credibility might be an important choice criterion for external OHS units.

Increasing brand investments are likely to increase brand credibility (Erdem and Swait 1998), and as such make it easier for customers to choose between OHS units. This is particularly important for external OHS units that compete more directly with competitors, than internal OHS units. Therefore, we propose the following:

*H5a: External OHS units experience a positive impact from brand investments on brand credibility.*

*H5b: Internal OHS units do not experience a positive impact from brand investments on brand credibility.*

### *3.3.6 Brand Credibility and Price Premium*

In the OHS market, the tendencies of merging companies can effectively create larger organizations (Lie 2009). This might contribute to larger and more credible brands. The rationale is that credible brands will be more trustworthy, thus reducing perceived risk and simplify decisions for consumers (Erdem and Swait 1998). Credible brands can reduce risk, and some buyers are willing to pay a price premium to reduce uncertainty (Snow 2010). Price premiums are more likely to

---

occur for buyers looking for external OHS units, because brand credibility might be more valuable in the competitive market where there is more uncertainty.

In addition, it is likely that companies will use more money on building brand credibility, to stand out in a more competitive market. OHS units with a credible brand have less incentive to cheat the customer as it would effectively damage brand equity, reputation, and ultimately put future profits at risk (Rao and Monroe 1996). The more the company has spent on making the brand credible, the more risk the company faces by cheating the buyer. Evidently, a credible brand reduces the risk for the buyers and makes selection easier (Keller 2008, 7), which could lead to price premiums. Arguably, internal OHS units might focus less on building brand credibility, and thus are not able to obtain price premiums that easily. The effect of investing in brand credibility should be that companies gain a price premium (Erdem, Swait, and Louviere 2002). The notion follows that enhancing the brand informs consumers about the presence of price premiums and consequently be accepted by the purchaser (Klein and Leffler 1981). Therefore, we propose the following:

*H5c: External OHS units experience a positive impact from brand credibility on price premium.*

*H5d: Internal OHS units do not experience a positive impact from brand credibility on price premium.*

### *3.3.7 Switching Costs and Performance Ambiguity*

Heide and Weiss (1995) argue that buyers switching costs stems from earlier commitments to a particular technology or commitments to a specific seller. In the OHS market, switching costs is likely to be more related to commitments to specific sellers rather than technology. Switching costs can be related to transaction cost theory, in the sense that the goal is to minimize the cost involved in carrying out transactions (David and Han 2004). All else being equal, buyers will be motivated to stay in existing relationships to economize on switching costs. Often this is because the expected benefits of choosing a new seller are

---

negligible compared with the potential switching costs involved (Heide and Weiss 1995).

In the OHS market, the more one perceives switching costs, the more likely one is to stay with its current OHS unit. Buyers currently having an external OHS unit might have fewer barriers to switch OHS unit as they are part of a competitive market. Internal OHS units are less likely to be replaced, as they are owned by their parent company. In transaction cost theory, an important rationale is that performance ambiguity is a key determinant of maintaining long-term relationships with sellers (Williamson 1975; Bowen and Jones 1986). When performance ambiguity exists in the market, buyers tend to favor the commitment of a long-term relationship to decrease switching costs. This occurs because negotiating, monitoring and evaluating quality will be greater when performance ambiguity is present (Bendapudi and Berry 1997). Bowen and Jones (1986) postulate that when there is a high level of performance ambiguity, buyers will rely on a single relationships as it results in lower switching costs.

Since OHS units deliver services to their buyers, it involves a high level of performance ambiguity due to its credence properties (Darby and Karni 1973) and its intangibility (Shostack 1987). Investing in a specific relationship increases customer dependency as it raises the cost of switching to competitors. By switching to a competitor, the buyer is likely to lose the established benefits, which take time to build with a new seller (Bendapudi and Berry 1997). However, the OHS services might not be that relationship specific, and as such switching costs may not be perceived as high in the marketplace. This is especially for buyers of external OHS services, as they are less likely to invest as many resources in a relationship. In contrast, owners of internal OHS units are likely to be highly committed to their parent company, contributing to higher switching costs. Internal OHS units are likely to be more dependent on their owner than external OHS units. Not only can it take more time for the owner of an internal OHS unit to effectively deal with a new supplier, but it would also involve discontinuation of OHS activities within the company. Therefore, we propose the following:

---

H6a: *External OHS units experience a positive impact from switching costs on performance ambiguity.*

H6b: *Internal OHS units do not experience a positive impact from switching costs on performance ambiguity.*

### *3.3.8 Environmental Uncertainty and Performance Ambiguity*

Uncertainty is used in a variety of ways (Downey and Slocum 1975). Within organization theory literature, uncertainty is a central concept where one seeks to explain the nature of the relationship between organizations and their environments (Milliken 1987). There exist several definitions of environmental uncertainty. We follow the definition presented by Milliken (1987, 134) that environmental uncertainty is: “*an inability to predict accurately what the outcomes of a decision might be*”. Duncan (1972) argued that environmental uncertainty involves not knowing the outcome of a decision in relation to how much an organization would lose if the decision were incorrect. A rationale within environmental uncertainty, is that the source of uncertainty stems from the organization's external environment (Milliken 1987). In other words, there are factors in the environment of the organization that are unpredictable. Furthermore, environmental uncertainty relates to performance ambiguity in the sense that it involves not understanding how the environment is changing. Performance ambiguity refers to problems of evaluating true level of performance, due to something vague or unsure in connection with missing information (Stump and Heide 1996; Bowen and Jones 1986; Ellsberg 1961). This is aligned with environmental uncertainty, involving the inability to predict accurately because of insufficient information (Gifford, Bobbitt, and Slocum 1979). Evidently, a higher level of environmental uncertainty leads to greater performance ambiguity. The more volatile, complex and heterogeneous a market is the more environmental uncertainty (Milliken 1987). In other words, unstable markets are subject to more environmental uncertainty than stable markets.

It is likely that there is more environmental uncertainty for buyers looking for external OHS units, as the market can be more unstable than for owners of internal OHS units. Milliken (1987) postulates that organizations that are

uncertain about their environment will devote a greater amount of resources to understand the mechanisms operating in the market, compared with organizations that believe they understand their environment. This can be related to transaction cost theory, in the sense that organizations uncertain about their environment will increase their transaction costs. It is due to the cost of monitoring and comprehending the market, in an effort to reduce environmental uncertainty and performance ambiguity. Buyers in the market for external OHS units are likely to put more resources in comprehending the market in order to stay competitive and reduce environmental uncertainty. Arguably, internal OHS units might not have the same incentives to monitor the market, as they are owned by their parent company and are less likely to put effort into dealing with competition. Therefore, we propose the following:

*H7a: External OHS units experience a positive impact from environmental uncertainty on performance ambiguity.*

*H7b: Internal OHS units do not experience a positive impact from environmental uncertainty on performance ambiguity.*

### *3.3.9 Information Costs Saved and Performance Ambiguity*

In a competitive market, understanding how organizations perform information search activities can be important in order to succeed. If performance ambiguity is present in the market, the amount of search effort is extended contributing to increasing information costs (Bunn, Butaney, and Hoffman 2001). The logic is that buyers incur costs when gathering and processing information to reduce uncertainty and perceived risk (Shugan 1980). Furthermore, Hutton (1997) argues that organizational buying behavior can be characterized as almost entirely a function of risk. However, different signaling strategies can help to lower information costs, and thereby reduce the degree of performance ambiguity (Erdem and Swait 1998). Mitchell (1995) states that buying from well-known companies may be one way to reduce risk and thereby lower information costs. Furthermore, signaling the clarity of a brand can also reduce performance ambiguity, and therefore convey information effectively, contributing to reducing information costs (Erdem and Swait 1998).

---

As performance ambiguity exists in the OHS market, a viable strategy for an OHS unit can be to convince buyers of what they can gain from the provided services. If an OHS unit provides customers with what they want, it is likely to reduce information costs, as buyers do not have to spend resources on finding OHS alternatives. Consequently, this might lead to reduced performance ambiguity for buyers. The level of perceived risk and information costs accrued depends on the informational structure of the market (Erdem and Swait 1998). As external OHS units compete more fiercely than internal OHS units, it might be more important to convey credible information. This is because the informational structure of the external OHS market is likely to be more complex than for internal OHS units. Conveying such information to potential buyers can reduce their information costs and thus performance ambiguity. Therefore, we propose the following:

H8a: *External OHS units experience a positive impact from information costs saved on performance ambiguity.*

H8b: *Internal OHS units do not experience a positive impact from information costs saved on performance ambiguity.*

### 3.3.10 Market Turbulence and Performance Ambiguity

Market turbulence has been conceptualized in different ways by different authors (Santos-Vijande and Álvarez-González 2007). Kohli and Jaworski (1990, 14) define it as: “*changes in the composition of customers and their preferences*”. Slater and Narver (1994) follow this definition, however they point out that market turbulence is a subset of the environmental turbulence construct. Furthermore, market turbulence is similar to the concept heterogeneity, which Miller (1987, 62) defines as: “*differences in the marketing and production requirements of different market segments*”. Greenley (1995) supports Miller, emphasizing the extent to which marketing operations change as a consequence of new customer needs. Hult, Hurley and Knight (2004) sum up the construct nicely. They argue that market turbulence reflects rapidly changing buyer preferences, wide-ranging needs and wants, ongoing buyer entry and exit from the market place and constant emphasis on offering new products. All the authors agree that market turbulence concerns change in the market; however the elements of change

---

they focus on differs. Market turbulence can also encompass change of the companies' competitors and the market uncertainty (Santos-Vijande and Álvarez-González 2007). In that manner, companies evaluate the change of competitors in order to cope with new competitive scenarios.

Within the OHS market, several changes have occurred recently. Many OHS professionals are worried about the future of OHS in Norway, due to major structural changes (Lie 2009). Buyers of services from external OHS units are likely to face more market turbulence than owners of internal OHS units. Because competition in the external OHS market can be fiercer, it might be harder to evaluate the services offered. As a result, competition can increase performance ambiguity, both for buyers and for external OHS units trying to stay competitive in the market. Organizations that operate in a more turbulent market, might be more required to modify their services constantly, to cater to changing customer needs (Jaworski and Kohli 1993). Chakravarthy (1997) postulates that when a market is complex and rapidly changing, the resulting turbulence makes responding to competition more difficult. As external OHS units often cater to many customers, they are required to serve more complex and diverging customer needs than internal OHS units. Therefore, we propose the following:

*H9a: External OHS units experience a positive impact from market turbulence on performance ambiguity.*

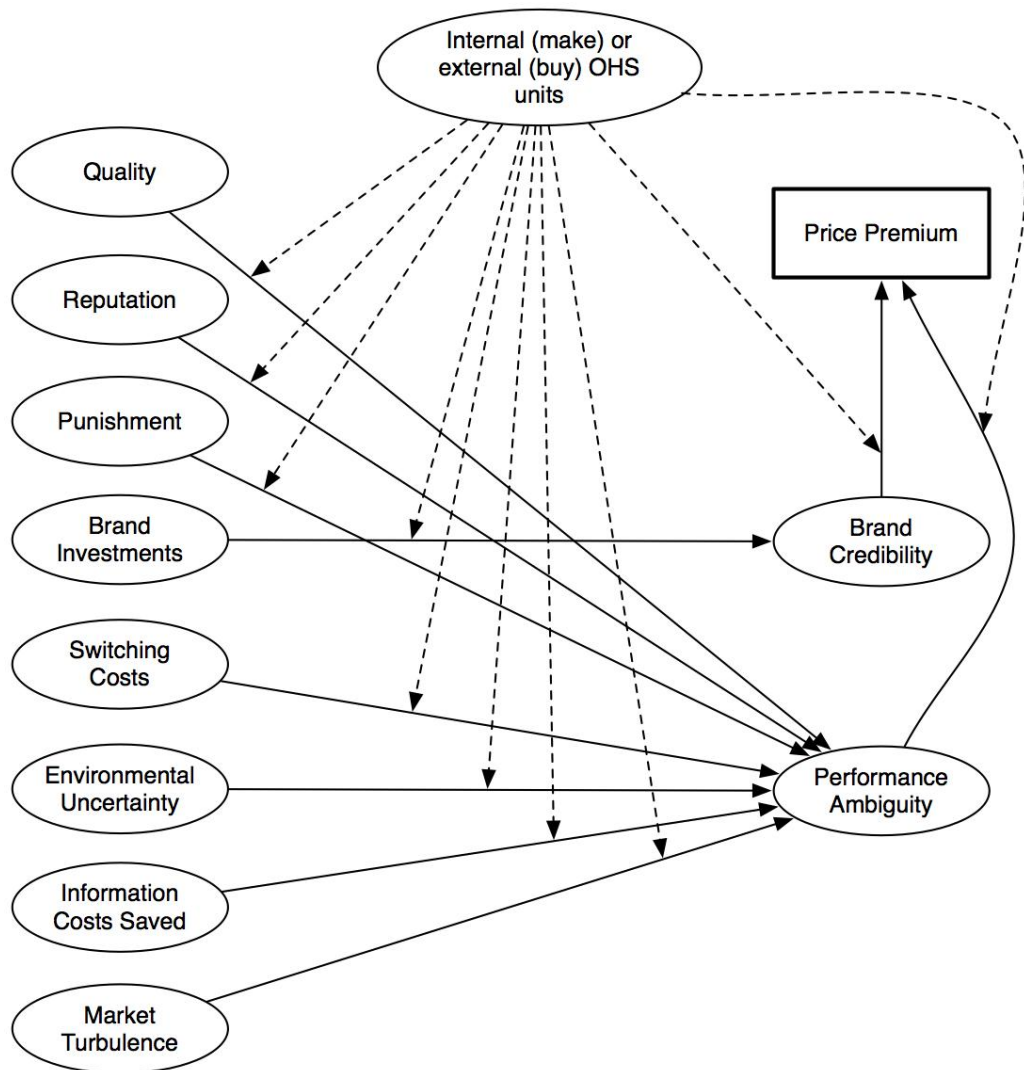
*H9b: Internal OHS units do not experience a positive impact from market turbulence on performance ambiguity.*

### **3.4 Research Model**

Based on our literature review, we propose the following research model consisting of price premium as the dependent variable and performance ambiguity, quality, reputation, punishment, brand investments, brand credibility, switching costs, environmental uncertainty, information costs saved and market turbulence as independent variables (Figure 1). We want to capture which factors allow suppliers to receive price premiums in the market. In addition, we separate

between internal and external OHS units to investigate if the factors influence the types of OHS units differently.

Figure 1: Conceptual model





## **Chapter 4 Research Methodology**

In the following chapter we describe the research method used in the study. We discuss research design, key informants, data collection method, sampling, measures and lastly the pretest.

### ***4.1 Research design***

A research design is the heart and soul of a marketing research project. It outlines how the marketing research project is done and guides data collection, analysis and report preparation (Malhotra 2010, 100). According to Ghauri and Grønhaug (2002), the choice of a research design serves as an overall strategy with the purpose to answer the research problem in the best possible manner. Malhotra (2010, 102-103) states that a research design may be classified as either exploratory or conclusive. The objective of an exploratory study is to provide insights and understanding of a phenomenon, whereas for a conclusive study, the objective is to test specific hypotheses and examine relationships. As we investigate causes of price premiums, the study is characterized as a descriptive research. The objective of a descriptive research is to describe something, often market characteristics (Malhotra 2010, 106).

### ***4.2 Key Informants***

The unit of analysis in our study is the organizations in the Norwegian OHS market. Since measuring an organization is complex and difficult, one should ideally rely on key informants for obtaining information. Campbell (1955) argues that the key informant should be a member of the company who has such a role that he or she is well-informed about the research topic. Even though it would be beneficial to specifically ask for key informants in our study, we decided not to, fearing a low response rate. However, NIOH explained that it is not common to specifically ask for key respondents when performing surveys in this market (Meeting with NIOH, 27.4.2011).

### ***4.3 Data collection method***

We used an internet survey as the data collection method. One inherent disadvantage of using an internet survey is the risk of expired and incorrect e-mail

---

addresses. This is a profound problem as people and companies change e-mail addresses frequently. Another risk is that companies receive a large number of invitations to surveys. Therefore, it might be hard to be chosen by the respondent. Furthermore, the risk of obtaining answers from unintended persons is also present, as companies often use generic e-mails. A low barrier for not responding is another problem with internet surveys, at least if the survey becomes too long.

One of the major advantages of using an internet survey is the low economic cost. Another advantage is its easy distribution across a vast geographical distance. Furthermore, internet surveys are much faster to conduct than telephone surveys (Frankfort-Nachmias and Nachmias 2008, 225). The time span from distributing the data and collection is often short, which leads to an efficient data collection process. Also, sending reminders to the panel increases the possibility of getting as many respondents as possible. An internet survey also let the respondents choose when to answer. As such, it is more convenient compared with telephone interviews, where reaching respondents at an appropriate time is difficult. Lastly, we have free access to the internet survey provider QuestBack, which facilitates design and distribution of the survey to the respondents.

#### ***4.4 Sampling***

Our sample is generated from two sources. The first source was from an OHS registry acquired from NIOH. Their list consists of e-mail addresses ranging from private e-mail addresses to company e-mail addresses. We combined the OHS registry with a registry provided by the Norwegian Labor Inspection Authority. These two registries combined provide us with more data and in the end a possibly higher response rate.

#### ***4.5 Measures***

Because we use a questionnaire as a measurement tool for the study, we describe how we plan to measure each variable in the following section. We based the questionnaire on previous studies conducted by researchers. We tried to make the wordings in the statements as similar to the statements in the research articles, since those statements already have been used successfully. Logically, this reduced the chances of errors such as leading or biased question, because the

---

authors already have taken such problems into consideration (Malhotra 2010, 348). However, we modified some of the statements slightly in order to fit our setting more appropriately. We did this in order to make the statements reflect our constructs in the best possible manner. Operationalization of the variables can be found in Appendix 1.

We use a seven-point Likert scale in our questionnaire. The scale ranges from one to seven, where one (1) is equal to strongly disagree and seven (7) is equal to strongly agree. When applying such a scale respondents are required to indicate their degree of agreement or disagreement (Malhotra 2010, 338). We applied the Likert scale because of its advantages. It is easy to develop and administer, and it is simple for respondents to comprehend how to use the scale. Lastly, Likert scales are suitable for electronic questionnaires (Malhotra 2010, 309).

#### *4.5.1 Dependent variable*

According to Malhotra (2010, 253), dependent variables are the variables that measure the effect of the independent variable on the test unit. From the research model, the dependent variable used in this study is price premium (Figure 1). In this study, price premium is referred to as: “*the difference between a super-high price and the perfectly competitive price for high-quality output*” (Rao and Monroe 1996, 512). We measure the dependent variable using scales developed by Rao and Bergen (1992) and Mishra, Heide and Cort (1998) as guidelines. We propose the following four items:

- Our customers are willing to pay us a higher price than normal for similar OHS services.
- The typical price that we charge for our OHS services is considerably higher than what our competitors charge for the same service.
- We are in the highest price level for our OHS services compared with the market in general.
- Our company claims a price whose magnitude or size is higher than normal for this kind of OHS services.

#### 4.5.2 Independent variables

Independent variables are variables or alternatives that are manipulated (i.e., the levels of these variables are changed by the researcher) and whose effects are measured and compared (Malhotra 2010, 253). From the research model, we use the following independent variables: performance ambiguity quality, reputation, punishment, brand investments, brand credibility, switching costs, environmental uncertainty, information costs saved and market turbulence (Figure 1).

*Performance ambiguity* is defined as: “*the difficulties faced by the customers in evaluating a service offering*” (Mishra, Heide, and Cort 1998, 283). Mishra, Heide and Cort (1998) and Rao and Bergen (1992) serve as a basis for seven items related to performance ambiguity:

- Customers have to assume that they are getting good service from us.
- It would be very time consuming to check up on how well an employee is performing his job.
- It is difficult for customers to evaluate the right amount of OHS service that we offer.
- Our customers are not able to evaluate the quality until the services are delivered.
- There are no sufficient standards for measuring OHS service quality prior to purchase.
- Our customers have difficulties in defining the level of quality they need when buying from us.
- For the type of OHS services our OHS provides, customers are only able to evaluate the quality after an extended period of usage.

*Quality* describes the characteristics of a product or service that have a bearing on its ability to satisfy stated or implied needs (American Society for Quality 2010).

We identify four items adopted from the scale of Rao and Bergen (1992):

- Our company feels that high service quality is crucial for our customers.
- Our customers would suffer a significant monetary loss if the quality of our services was low.

- Our customers check that the quality of the services they receive from us always are of a high level of quality.
- The services provided by our company consist in general of a high level of quality.

*Reputation* is defined as: “*the estimation of the consistency over time of an attribute of an entity*” (Herbig and Milewicz 1993, 18). We use three items adopted from the scale of Rao and Bergen (1992):

- Our company has a superior reputation in the market place.
- Our company has a reputation for delivering services with superior quality relative to other OHS units.
- Our company is highly trustworthy.

*Punishment* refers to buyers’ willingness to punish cheating by discontinuing business with the seller. We use two items in the questionnaire based on the scale from Rao and Bergen (1992):

- Our company would suffer significant economic losses if our service quality is revealed to be low.
- Our customers would blacklist and not do business with us again if we deliver low quality OHS services.

*Brand investments* refer to the amount of money spent on marketing the company to the public. We use three items based on the scale by Erdem and Swait (1998):

- Our company spends annually significant amounts of money on marketing.
- Our company has invested considerable amounts of money on the community over the years.
- Our company spends annually considerable amounts of money to be visible in the market place.

---

*Brand credibility* refers to the degree to which consumers believe in the promises made by the brand. We use three items based on Erdem and Swait (1998) in this study:

- Our company delivers what it promises.
- Our services are believable.
- Our company has a brand our customers can trust.

*Switching costs* stems from commitments to a technology or commitments to a specific seller (Heide and Weiss 1995). Heide and Weiss (1995) serve as a basis for two items related to switching costs:

- Our belief was that developing procedures to deal effectively with a new OHS supplier would take a lot of time and effort.
- We thought that developing working relationships with new OHS suppliers would be a time-consuming process.

*Environmental uncertainty* refers to uncertainty in a company's environment, and an inability to predict accurately the outcome of a decision. We use five items based on the scale by Jaworski and Kohli (1993) as a basis to measure environmental uncertainty:

- It is very hard to predict the number of OHS units in the market.
- The competition between the different OHS units in the local market we operate in is fierce.
- There are many promotion wars in our market.
- Price competition is a hallmark in our market.
- Our competitors are relatively weak.

*Information costs saved* regards costs involved in processing information in order to reduce uncertainty. Erdem and Swait (2004) provide us with three items that measure information costs saved:

- Our customers know what they get from our OHS, which saves them time on finding other alternatives.
- Our customers know that our OHS will be present in the future.
- Our OHS provides our customers with what they want, which saves both time and energy on finding other alternatives.

*Market turbulence* involves changes in the market such as buyer preferences and needs. We use four items based on the study by Jaworski and Kohli (1993) as a basis to measure market turbulence:

- Our customers are price-sensitive.
- We are witnessing demand from our services from customers who never bought them before.
- We cater to many of the same customers that we used to in the past.
- Our customers tend to look for new OHS services all the time.

#### ***4.6 Pretest***

Before publishing our questionnaire, we asked representatives from NIOH to quality assure the questions. Based on their feedback we made some minor adjustments. After this we conducted a quantitative pretest in order to ensure that the operationalization of the variables was valid and understandable for the respondents. We also did this in order to check how much time respondents used. We applied the debriefing method suggested by Webb (2000). This implies that we presented the respondents in the pretest with a questionnaire as similar as possible to the one we were going to use in the main study. The pretest was done on a small sample of four OHS units selected from the OHS registry by NIOH. All of the OHS units answered the pretest. Their feedback indicated no need for serious changes. Only small modifications such as expected time usage were changed before finalizing the questionnaire.

## **Chapter 5 Data Analysis**

In the following chapter we present our analysis and interpretation of the data. We present the data collection process, an overview of the sample characteristics, before performing both an exploratory factor analysis and a confirmatory factor analysis.

### ***5.1 Data collection process***

We conducted our questionnaire through the online survey provider QuestBack. The questionnaire used in the study can be found in Appendix 2. The online survey provider is easy to use, suitable for collecting a large amount of data, has the possibility to export data to statistical programs. By using an online survey provider we avoid the risk of punching errors in the data collection.

Respondents were presented with a letter of introduction before responding to the survey (Appendix 3). In the letter, the respondents were informed of an incentive for answering the survey, namely a free copy of the summarized results and findings of the study. To achieve a higher credibility of the sender, we received permission from both NIOH representatives and Ragnhild Silkoset to include their names in the invitation. Contact information to reach both of the authors was also included in the letter of introduction.

The survey time frame was between 5.5.2011 and 19.5.2011. In total, 500 invitations were sent out. In the period after we published the questionnaire and before a reminder was distributed on 11.5.2011, we obtained 95 responses accounting for 19 % of the total sample size. As the use of e-mail often gets low respondent rates, we decided to send a follow-up reminder to the respondents who had not answered the survey to get the highest possible response rate. After the reminder was sent out, and until the questionnaire was completed, we acquired an additional 62 responses. We included the respondents from the pretest, as we did not alter anything. In total, we ended up with 161 responses (Appendix 4). This computes to a total response rate of 32.2 %. 161 responses is acceptable, as it provides us with the opportunity to conduct statistical analyses in SPSS and LISREL (Tomassen 2004, 85).



## 5.2 Sample characteristics

161 respondents from the OHS market make up our sample. 116 respondents represented external OHS units accounting for 72 % of the sample. The remaining 28 % represented internal OHS units (Table 2).

Table 2: Type of OHS unit

|              | Frequency | Percent |
|--------------|-----------|---------|
| External OHS | 116       | 72      |
| Internal OHS | 45        | 28      |
| Total        | 161       | 100     |

The distribution of the OHS units is relatively skewed. According to NIOH, this is an actual representation of the market characteristics, and therefore our sample is pertinent to the total OHS market (E-mail from NIOH, 21.5.2011).

Most of the companies in the sample are private, with a total of 135 units accounting for 84 %. Public service companies denoted a total of 26, representing only 16 % of the total sample size. By performing a cross tabulation we revealed that external OHS units in large are private companies. Some 107 out of 116 are private companies (92.2 %). Within internal OHS units private companies also represent the largest amount, although not as much as for external OHS units. In total, 28 out of 45 are private companies (62.2 %) (Table 3).

Table 3: Type of companies

|              | Frequency | Percent |       |
|--------------|-----------|---------|-------|
| Public       | 26        | 16.1    |       |
| Private      | 135       | 83.9    |       |
| Total        | 161       | 100     |       |
|              | Public    | Private | Total |
| External OHS | 9         | 107     | 116   |
| Internal OHS | 17        | 28      | 45    |
| Total        | 26        | 135     | 161   |

Furthermore, the average number of man-labor years within the companies is almost 13. The range of man-labor years is from 1 to 330. This indicates that we have a sample consisting of both small and large OHS units. Within the OHS units, nearly 50 % (N = 77) of the sample size consist of man-labor years of less than five. Man-labor years in the range between 6 and 10 cover 51 units (32 %). There are few cases of large corporations, as only 3 corporations have more than 41 man-labor years, accounting for almost 2 % (Table 4).

Table 4: Man-labor years

|                 |       | OHS type     |              |       | Total |
|-----------------|-------|--------------|--------------|-------|-------|
|                 |       | External OHS | Internal OHS |       |       |
| Man-labor years | <5    | Count        | 52           | 25    | 77    |
|                 |       | % of Total   | 32.3%        | 15.5% | 47.8% |
|                 | 6-10  | Count        | 38           | 13    | 51    |
|                 |       | % of Total   | 23.6%        | 8.1%  | 31.7% |
|                 | 11-20 | Count        | 16           | 5     | 21    |
|                 |       | % of Total   | 9.9%         | 3.1%  | 13 %  |
|                 | 21-40 | Count        | 8            | 1     | 9     |
|                 |       | % of Total   | 5 %          | .6%   | 5.6%  |
|                 | >41   | Count        | 2            | 1     | 3     |
|                 |       | % of Total   | 1.2%         | .6%   | 1.9%  |
| Total           |       | Count        | 116          | 45    | 161   |
|                 |       | % of Total   | 72 %         | 28 %  | 100 % |

Finally, on average we explored that external OHS units provided their services to 132 companies, whereas the largest one served 800 different companies. Also, we found that none of the internal OHS units provided services to any other than their parent company (Table 5).

Table 5: Number of companies that OHS provides services to

|              |         |         |        |
|--------------|---------|---------|--------|
| External OHS | N       | Valid   | 114    |
|              |         | Missing | 2      |
|              | Mean    |         | 132.36 |
|              | Minimum |         | 0      |
|              | Maximum |         | 800    |
| Internal OHS | N       | Valid   | 0      |
|              |         | Missing | 45     |

### 5.3 Factor analysis

The purpose of factor analysis is to simplify complex relationships between observed variables, in order to make the connections more understandable (Gripsrud, Olsson, and Silkoset 2004, 324). Its primary usefulness is to take a large number of observable instances to measure an unobservable construct or constructs (George and Mallery 2009, 246).

It is common to separate between exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) (Gripsrud, Olsson, and Silkoset 2004, 327). EFA is a general term for a class of multivariate analysis techniques whose goal is to decrease the size of a dataset, and to reduce it to an actual underlying dimension. The variables are reduced to a smaller amount of previously unknown dimensions, which are also referred to as factors (Janssens et al. 2008, 245). CFA, on the other hand is used to verify or test the factor structure of a set of observed

variables. It allows us to test the hypothesis that a relationship between our observed variables and their underlying latent construct exist (Suhr 2001).

In our thesis we apply both EFA and CFA. The reason for performing both methods is to get a better insight of our data. Using both methods gives us a more reliable indication of which factors and items that is subject for removal or alteration. The goal of performing both methods is to facilitate easy data interpretation and analysis. EFA is conducted in order to investigate if there are any patterns or interesting connections without adapting the data by not imposing a preconceived structure. We want to check if items load on multiple factors. If this is the case, the factors might be excluded from further analysis. In addition, we conduct CFA in order to modify and impose a given structure among the variables based on the theory from the literature review.

### *5.3.1 Requirements before performing EFA and CFA*

Before conducting EFA and CFA there are some preconditions that must be fulfilled. We assess normality, correlation check and sample size.

#### *5.3.1.1 Assessing normality*

Essentially, the data needs to follow a normal distribution in order for most analyses to work properly. If the variation from the normal distribution is sufficiently large, all resulting statistical tests are invalid, because normality is required to run different statistical test (Hair et al. 2010, 71). There are two aspects to normality of a distribution, skewness and kurtosis, and both must be tested before normality can be established. Skewness is used to describe the balance of the distribution, while kurtosis is the peakedness or flatness of the distribution compared with the normal distribution (Hair et al. 2010, 71). As a rule of thumb, both skewness and kurtosis should be between -2 and +2 (George and Mallery 2011, 99). It should be noted that all the variables are on a Likert scale, and therefore do not possess the real qualities of normal distribution. However, this is not considered as an immediate problem in the further analysis.

In our sample there are tendencies of violating both skewness and kurtosis.

In Table 6, we present the items with skewness or kurtosis values higher than the critical value. In terms of skewness, only item Markturb\_3 violate the rule of

thumb. Kurtosis seems to be a problem with our dataset, as several items have kurtosis values above the critical limit.

Table 6: Skewness and kurtosis values on item level

|             | Mean  | Standard Deviation | Skewness | Kurtosis |
|-------------|-------|--------------------|----------|----------|
| PP_2        | 2.064 | 1.216              | 1.542    | 2.540    |
| PP_3        | 2.035 | 1.232              | 1.556    | 2.445    |
| PP_4        | 2.165 | 1.363              | 1.518    | 2.124    |
| Qual_1      | 6.156 | 1.121              | -1.499   | 2.462    |
| Brandinv_2  | 1.956 | 1.291              | 1.704    | 3.002    |
| Brandcred_3 | 6.019 | .971               | -1.448   | 3.231    |
| Markturb_3  | 6.215 | 1.072              | -2.109   | 6.072    |
| PA_1        | 5.791 | 1.280              | -1.646   | 3.431    |

To further check for normality problems, we investigate skewness and kurtosis values on an overall construct level. There seems to be limited problems with normality, as only price premium have a kurtosis value above the critical limit (Table 7). Overall, the data possess the qualities for pursuing further analysis.

Table 7: Skewness and kurtosis values on construct level

|                           | Mean  | Standard Deviation | Skewness | Kurtosis |
|---------------------------|-------|--------------------|----------|----------|
| Price Premium             | 2,332 | 1,089              | 1,324    | 2,471    |
| Quality                   | 5,481 | .882               | -.411    | .064     |
| Reputation                | 5,856 | .745               | -.418    | -.177    |
| Punishment                | 4,241 | 1,612              | -.128    | -.609    |
| Brand Investments         | 2,057 | 1,106              | 1,051    | .475     |
| Brand Credibility         | 6,160 | .722               | -.667    | -.082    |
| Switching Costs           | 5,006 | 1,330              | -.399    | -.120    |
| Environmental Uncertainty | 3,710 | 1,034              | -.102    | -.248    |
| Information Costs Saved   | 5,589 | .950               | -.211    | -.462    |
| Market Turbulence         | 4,442 | .764               | -.509    | 1,818    |
| Performance Ambiguity     | 4,102 | 1,087              | -.307    | .305     |

### 5.3.1.2 Correlation check

According to Janssens et al. (2008, 255) a factor analysis is only significant if the variables involved is sufficiently correlated to one another. Therefore we check the correlations between the items and utilize the Bartlett's test of sphericity and Kaiser-Meyer-Olkin test to check for adequate correlations.

We check the correlation coefficients to identify the strength of the linear relationship between our different variables. The coefficients can take any value between -1 and +1. -1 represents a perfect negative correlation and +1 represents a perfect positive correlation. If the correlation coefficients represent a value of 0,

the variables are perfectly independent (Saunders, Lewis, and Thornhill 2009, 459). The correlation matrix demonstrates that we have several significant correlations in our dataset (Table 8).

Table 8: Correlation Matrix

| Constructs                   | 1      | 2       | 3      | 4      | 5      | 6      | 7     | 8      | 9      | 10    | 11    |
|------------------------------|--------|---------|--------|--------|--------|--------|-------|--------|--------|-------|-------|
| 1. Price Premium             | 1.000  |         |        |        |        |        |       |        |        |       |       |
| 2. Quality                   | -.138  | 1.000   |        |        |        |        |       |        |        |       |       |
| 3. Reputation                | -.013  | .491**  | 1.000  |        |        |        |       |        |        |       |       |
| 4. Punishment                | .031   | .032    | .073   | 1.000  |        |        |       |        |        |       |       |
| 5. Brand Investments         | .129   | .058    | .007   | .163*  | 1.000  |        |       |        |        |       |       |
| 6. Brand Credibility         | -.137  | .490**  | .640** | .132   | .025   | 1.000  |       |        |        |       |       |
| 7. Switching Costs           | .027   | .160*   | .085   | .011   | .099   | .069   | 1.000 |        |        |       |       |
| 8. Environmental Uncertainty | .115   | .166*   | .129   | .052   | .169*  | .131   | .174* | 1.000  |        |       |       |
| 9. Information Costs Saved   | -.024  | .456**  | .352** | -.103  | .054   | .439** | .179* | .128   | 1.000  |       |       |
| 10. Market Turbulence        | -.039  | -.065   | .012   | .250** | .278** | .033   | .042  | .136   | .018   | 1.000 |       |
| 11. Performance Ambiguity    | .219** | -.251** | -.062  | -.096  | -.067  | -.159* | .085  | .298** | -.182* | .123  | 1.000 |

\* Correlation is significant at the .05 level (2-tailed).

\*\* Correlation is significant at the .01 level (2-tailed).

Bartlett’s test of sphericity attempts to determine whether there is a high enough degree of correlation between at least a number of the variables (Janssens et al. 2008, 255). We propose the following hypotheses:

$H_0$ : *The variables are uncorrelated.*

$H_a$ : *The variables are correlated.*

In our current example the null hypothesis is rejected ( $p < .05$ ), therefore factor analysis is meaningful (Table 9). Another measure used to determine the degree of correlation between the variables and the applicability of factor analysis is the Kaiser-Meyer-Olkin test (Janssens et al. 2008, 256). According to Malhotra (2010, 638), the Kaiser-Meyer-Olkin value should be between .5 and 1 for factor analysis to be appropriate. This is satisfied as the Kaiser-Meyer-Olkin value is .709 (Table 9).

Table 9: KMO and Bartlett's Test

|  |                    |         |
|--|--------------------|---------|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. |                    | .709    |
| Bartlett's Test of Sphericity                    | Approx. Chi-Square | 2.738E3 |
|  | Df                 | 780     |
|  | Sig.               | 0       |

### 5.3.1.3 Sample size

One of the prerequisites to perform a factor analysis regards the number of observations per variable. The rule of thumb is that for every variable there should be ten times as many observations and a minimum of 100 observations (Janssens

---

et al. 2008, 247). We fulfill both requirements as we have 161 observations for each variable.

As the aforementioned requirements are met, we conclude that the data is appropriate for factor analysis. Although kurtosis is present in some items, we keep this in mind for the continuing part of the data analysis. Correlation exists between the different variables, making the data suitable for factor analysis. Finally, the sample size is applicable for performing several statistical tests .

### *5.3.2 Exploratory Factor Analysis (EFA)*

We conducted an EFA to check if there exists any pattern between our hypothesized variables or not. We used Principal Components as the factor extraction method as this is the most commonly used method (Gripsrud, Olsson, and Silkoset 2004, 334). As we have predefined variables, we forced SPSS to extract 11 factors as recommended by Janssens et al. (2008, 253). We applied the Varimax factor rotation method as this is the most commonly used method (Gripsrud, Olsson, and Silkoset 2004, 334). Lastly, we forced SPSS to suppress absolute coefficient values below .30. According to Hair et al. (2010, 117) factor loadings in the range of  $\pm.30$  to  $\pm.40$  are considered to meet the minimal level for interpretation of factor structure. Furthermore, loadings  $\pm.50$  or above are considered practically significant. Based on our sample size of 161, Hair et al. (2010, 117) recommend a factor loading of approximately .45. The results from the EFA can be found in Table 10.

Table 10: Rotated Component Matrix

|               | Component |      |      |      |      |      |      |      |      |       |       |
|---------------|-----------|------|------|------|------|------|------|------|------|-------|-------|
|               | 1         | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 10    | 11    |
| PP_1          |           |      | .595 |      |      |      |      |      |      |       |       |
| PP_2          |           |      | .894 |      |      |      |      |      |      |       |       |
| PP_3          |           |      | .867 |      |      |      |      |      |      |       |       |
| PP_4          |           |      | .873 |      |      |      |      |      |      |       |       |
| Qual_1        | .394      |      |      |      |      |      |      |      | .507 |       |       |
| Qual_2        |           |      |      |      |      |      |      |      | .706 |       |       |
| Qual_3        |           |      |      |      |      |      |      |      | .706 |       |       |
| Qual_4        | .779      |      |      |      |      |      |      |      |      |       |       |
| Rep_1         | .684      |      |      |      |      |      |      |      |      |       | .416  |
| Rep_2         | .471      |      |      |      |      |      |      |      | .32  |       | .337  |
| Rep_3         | .788      |      |      |      |      |      |      |      |      |       |       |
| Pun_1         |           |      |      |      |      |      | .846 |      |      |       |       |
| Pun_2         |           |      |      |      |      |      | .825 |      |      |       |       |
| Brandinv_1    |           |      |      | .892 |      |      |      |      |      |       |       |
| Brandinv_2    |           |      |      | .672 |      |      |      |      |      |       |       |
| Brandinv_3    |           |      |      | .895 |      |      |      |      |      |       |       |
| Brandcred_1   | .818      |      |      |      |      |      |      |      |      |       |       |
| Brandcred_2   | .866      |      |      |      |      |      |      |      |      |       |       |
| Brandcred_3   | .587      |      |      |      | .394 |      |      |      |      |       |       |
| Switchcost_1  |           |      |      |      |      |      |      | .911 |      |       |       |
| Switchcost_2  |           |      |      |      |      |      |      | .882 |      |       |       |
| Enviruncert_1 |           |      |      |      |      | .328 |      |      |      | .315  | -.429 |
| Enviruncert_2 |           |      |      |      |      | .598 |      |      |      | -.368 |       |
| Enviruncert_3 |           |      |      |      |      | .847 |      |      |      |       |       |
| Enviruncert_4 |           |      |      |      |      | .744 |      |      |      |       |       |
| Enviruncert_5 |           |      |      |      |      |      |      |      |      | .805  |       |
| Infocost_1    | .308      |      |      |      | .482 |      |      |      |      |       |       |
| Infocost_2    |           |      |      |      | .515 |      |      |      |      |       |       |
| Infocost_3    |           |      |      |      | .723 |      |      |      |      |       |       |
| Markturb_1    |           |      |      |      |      |      | .468 |      |      |       | -.428 |
| Markturb_2    |           |      |      |      |      |      |      |      |      |       | .653  |
| Markturb_3    |           |      |      |      | .658 |      |      |      |      |       |       |
| Markturb_4    |           |      |      | .321 |      |      |      |      |      |       |       |
| PA_1          |           | .429 |      |      | .437 |      |      |      |      | -.396 |       |
| PA_2          |           | .709 |      |      |      |      |      |      |      |       |       |
| PA_3          |           | .665 |      |      |      |      |      |      |      |       |       |
| PA_4          |           | .712 |      |      |      |      |      |      |      |       |       |
| PA_5          |           | .608 |      |      |      |      |      |      |      |       |       |
| PA_6          |           | .666 |      |      |      |      |      |      |      |       |       |
| PA_7          |           | .572 |      |      |      |      |      |      |      |       |       |

The following items load on multiple components: Qual\_1, Rep\_1, Rep\_2, Brandcred\_3, Enviruncert\_1, Enviruncert\_2, Infocost\_1, Markturb\_1, and PA\_1. Also, Enviruncert\_1, Markturb\_4 and PA\_1 have factor loadings below .45, but are still within the minimal level for interpretation. The findings from the EFA are summarized in Table 11.

Table 11: EFA summary

| Variable name             | Significant factor loadings and clear pattern of interpretation |
|---------------------------|---|
| Price Premium             | Yes   |
| Performance Ambiguity     | Yes   |
| Quality                   | Yes   |
| Reputation                | No  |
| Punishment                | Yes   |
| Brand Investments         | Yes   |
| Brand Credibility         | No  |
| Switching Costs           | Yes   |
| Environmental Uncertainty | No  |
| Information Costs Saved   | Yes   |
| Market Turbulence         | No  |

The EFA reveals a pattern where some of the variables behave differently than expected. This is common and normal as we operate with a large number of variables in our research (Meeting with Bengt G Lorentzen, 9.6.2011).

In order to test reliability, we perform the Cronbach's Alpha test. According to Hair et al. (2010, 92) the lower limit of acceptability is .60. All of our variables with their respective items are above this limit, except for market turbulence with a Cronbach's Alpha of .241 (Table 12). The article from Jaworski and Kohli (1993) that we base our questions upon obtains a reliability estimate of .68 for the same variable. To deal with this problem, we stepwise remove items to check if the Cronbach's Alpha increases, as recommended by Janssens et al. (2008, 274).

Table 12: Cronbach's Alpha

| Variable name             | Number of items | Cronbach's Alpha |
|---------------------------|-----------------|------------------|
| Price Premium             | 4               | .836             |
| Performance Ambiguity     | 7               | .773             |
| Quality                   | 4               | .656             |
| Reputation                | 3               | .721             |
| Punishment                | 2               | .810             |
| Brand Investments         | 3               | .816             |
| Brand Credibility         | 3               | .807             |
| Switching Costs           | 2               | .837             |
| Environmental Uncertainty | 5               | .609             |
| Information Costs Saved   | 3               | .643             |
| Market Turbulence         | 4               | .241             |

We experience only minor changes to the overall Cronbach's Alpha, when stepwise removing the different items. In summary, we remove the construct market turbulence. When conducting the normality test, Markturb\_3 displayed a high level of kurtosis (Table 6). Performing the EFA demonstrates that market turbulence load on several components, without displaying a clear pattern (Table 10). Finally, market turbulence has the lowest level of reliability (Table 12).

### 5.3.3 Confirmatory Factor Analysis (CFA)

CFA is a way of testing how well measured variables represent a smaller number of constructs. We perform a CFA in order to specify both the number of factors that exist for a set of variables and which factor each variable will load on before results can be computed. According to Jöreskog and Sörbom (1993, xxiii) CFA enables one to test whether relationships expected on theoretical grounds actually



---

appear in the data. CFA is a tool that enables us to either “confirm” or “reject” our preconceived theory (Hair et al. 2010, 693).

Before running a CFA in LISREL, we made a selection of which estimation method to use. We chose the default and most widely used method, namely Maximum Likelihood (Diamantopoulos and Siguaw 2000, 56). As all our items are based on a Likert scale, we forced LISREL to change the scale from ordinal to continuous. Analyzing continuous data allows for stronger comparisons and conclusions than analyzing ordinal data (Gripsrud, Olsson, and Silkoset 2004, 125-127).

We conducted a CFA for testing our measurement model. We check for fit and model modifications. After that we address overall measurement model fit.

#### *5.3.3.1 Performing Confirmatory Factor Analysis*

We imported 36 items with 10 latent variables from SPSS to LISREL. The first item in every variable is fixed to 1, with the purpose of scaling. We examined the parameter estimates to see if there are any unreasonable values or other anomalies (Jöreskog and Sörbom 1993, 121). In order to assess this, we check for standardized regression coefficients and t-values of the indicators. According to Hair et al. (2010, 709) a rule of thumb is that standardized regression coefficients should be .5 or higher, and ideally .7 or higher. All standardized regression coefficients are above the rule of thumb, except from Qual to item Qual\_2 and from Eunc to item Eunc\_5 (Appendix 5). All t-values are above the critical value of 1.96 recommended by Wenstøp (2003, 407) except from Eunc to item Eunc\_5 (Appendix 6). Therefore, we exclude item Eunc\_5 from the model. We do not exclude item Qual\_2 as it is close to .5 and have a significant t-value. Overall, this exclusion gave a better model fit (Appendix 7). However, some of the items had a standardized regression coefficient value over 1. Hair et al. (2010, 713) argue that this can be troublesome. To overcome this problem we defined the error variance of the items Pun\_2, Binv\_2 and Scost\_2 to 0 (Appendix 8).

#### *5.3.3.2 Overall measurement model fit*

The Goodness-of-Fit (GOF) for the measurement model can be determined by several indices. When evaluating if the measurement model fits the data, we

analyze chi-square, degrees of freedom (*df*), and RMSEA. We apply the chi-square test for overall model fit. Chi-square forms the basis for many other GOF-tests, as it is the only measure that is directly testing its significance. Since chi-square is a function of the sample size, we evaluate the impact of *N*. In our case, *N* = 161, which is less than 500, indicating that chi-square can be used as a good basis of estimation (Hair et al. 2006, 748).

A small chi-square corresponds to a good fit, and a large chi-square to a bad fit (Jöreskog and Sörbom 1993, 122). In this case, the chi-square equals 821.21 indicating a bad fit (Table 13). However, chi-square is affected by sample size, and should therefore be compared to *df*. Therefore, one can look at the ratio between chi-square and *df*. Our chi-square (821.21) / *df* (528) (Table 13) equals 1.55, within the acceptable range between 1 and 2 (Biong and Selnes 1997). Hair et al. (2010, 721) states that a number smaller than 2 is considered very good. 1.55 suggests an acceptable fit for the CFA model.

Chi-square is just one of many tests of fit, and we cannot make a conclusion on just one statistical test (Hair et al. 2010, 672). RMSEA is less sensitive to sample size, and is therefore evaluated (Hair et al. 2010, 667). RMSEA indicates how well the model approximates the data. Lower RMSEA values indicate better fit (Hair et al. 2010, 667). The rule of thumb is that a RMSEA below .05 is a close fit, and values between .05 and .08 are an approximate fit (Jöreskog and Sörbom 1993, 124). The RMSEA is .059 which indicates an approximate fit, signaling that we have a good model (Table 13).

Table 13: Test statistics measurement model

| Test statistics   | Chi-square | df  | RMSEA |
|-------------------|------------|-----|-------|
| Measurement model | 821.21     | 528 | .059  |

Based on the fit-indices we accept the model. Therefore, we do not perform any further modifications to the model. We continue with Structural Equation Modeling (SEM).

## Chapter 6 Results

In the following chapter we perform and discuss the results from the SEM model. We present the model fit before testing whether or not performance ambiguity has an effect on our model. Lastly, we test the hypotheses from the SEM model.

### *6.1 Structural Equation Modeling (SEM)*

SEM is a family of statistical models that seeks to explain the relationships among multiple variables, by combining factor analysis and multiple regression (Hair et al. 2010, 634). SEM is particularly useful in testing theories that contain multiple equations involving dependence relationships (Hair et al. 2006, 706). We analyze data from two samples, namely external OHS units and internal OHS units simultaneously. In LISREL, we use a path diagram to estimate the different relationships in the SEM model. According to Hair et al. (2010, 634) a path diagram is the visual representation of a model and the complete set of relationships among the models constructs.

#### *6.1.1 SEM model fit*

To check for SEM model fit we analyze chi-square, *df*, and RMSEA. The estimated chi-square for the SEM model is 1430.24 (Table 14) and the sample size is the same as for the CFA model (N=161). This is less than 500, indicating that chi-square can be used as a good basis of estimation (Hair et al. 2006, 748). The chi-square for the model is large, and can be interpreted as a bad fit (Jöreskog and Sörbom 1993, 122). However, we compare the ratio between chi-square and *df*. The ratio chi-square (1430.24) / *df* (1138) (Table 6) equals 1.26. This is within the acceptable range between 1 and 2 (Biong and Selnes 1997). In addition, Hair et al. (2010, 721) state that a number smaller than 2 is considered very good. 1.26 suggests an acceptable fit for the SEM model.

To avoid to fallacy of making a conclusion base on just one statistical test, we look at the RMSEA for the SEM model. The RMSEA is .057 (Table 14). This indicates an approximate fit (Jöreskog and Sörbom 1993, 124). Based on these fit-indices we accept the SEM model. The modification indices in LISREL suggest adding different paths between the items and the variables. Various modification

---

attempts did not result in a better overall model fit. Therefore we keep the model as it is.

Table 14: Test statistics SEM model

| Test statistics | Chi-square | df   | RMSEA |
|-----------------|------------|------|-------|
| SEM model       | 1430.24    | 1138 | .057  |

In Table 15, we present SEM statistics. We see that some of the standardized regression coefficients exceed 1 and some are less than .50. This might indicate that something is wrong with the data. Hair et al. (2006, 796) postulate that removing items may not always be the best solution as one must look at the importance of the items and how these statements are described. As we did not discover any other problems with the items and most of our items are within the acceptable level, we decide to keep all of the items. A visual representation with standardized regression coefficients and t-values separated between external and internal OHS units can be found in Appendix 9 to 12.

Table 15: SEM Statistics

|   | Standardized regression coefficients |              | t-values     |              |
|---|--------------------------------------|--------------|--------------|--------------|
|   | Internal OHS                         | External OHS | Internal OHS | External OHS |
| <b>Paths</b>                                      |                                      |              |              |              |
| Performance Ambiguity – Price Premium             | .19                                  | .30          | 1.09         | 2.90         |
| Quality – Performance Ambiguity                   | -.28                                 | -.44         | -.49         | -1.13        |
| Reputation – Performance Ambiguity                | .15                                  | .27          | .30          | .83          |
| Punishment - Performance Ambiguity                | .06                                  | -.07         | .40          | -.66         |
| Brand Investments – Brand Credibility             | .03                                  | .00          | .17          | .03          |
| Brand Credibility - Price Premium                 | -.25                                 | -.05         | -1.59        | -.56         |
| Switching Costs – Performance Ambiguity           | -.05                                 | .15          | -.28         | 1.47         |
| Environmental Uncertainty – Performance Ambiguity | .40                                  | .29          | 2.02         | 2.38         |
| Information Costs Saved – Performance Ambiguity   | -.01                                 | -.32         | -.04         | -1.69        |
| <b>Items</b>                                      |                                      |              |              |              |
| PP_1  | .63                                  | .63          | n/a          | n/a          |
| PP_2  | .82                                  | .97          | 8.35         | 14.11        |
| PP_3  | .80                                  | .88          | 7.12         | 12.09        |
| PP_4  | .73                                  | .89          | 6.73         | 12.11        |
| PA_1  | .65                                  | .65          | n/a          | n/a          |
| PA_2  | .76                                  | .78          | 5.68         | 9.33         |
| PA_3  | .74                                  | .70          | 5.24         | 8.29         |
| PA_4  | .76                                  | .63          | 5.13         | 7.31         |
| PA_5  | .40                                  | .64          | 2.81         | 7.00         |
| PA_6  | .70                                  | .65          | 6.80         | 7.48         |
| PA_7  | .55                                  | .66          | 3.81         | 7.36         |
| Qual_1  | .73                                  | .73          | n/a          | n/a          |
| Qual_2  | .53                                  | .49          | 3.69         | 5.50         |
| Qual_3  | .63                                  | .59          | 4.64         | 6.90         |
| Qual_4  | .91                                  | .80          | 8.14         | 11.61        |
| Rep_1   | .85                                  | .85          | n/a          | n/a          |
| Rep_2   | .67                                  | .73          | 5.51         | 9.34         |
| Rep_3   | .86                                  | .74          | 7.28         | 10.18        |
| Pun_1   | .62                                  | .62          | n/a          | n/a          |
| Pun_2   | 1.05                                 | .98          | 6.89         | 7.03         |
| Binv_1  | .80                                  | .80          | n/a          | n/a          |
| Binv_2  | .40                                  | .51          | 2.93         | 6.00         |
| Binv_3  | .97                                  | 1.01         | 12.9         | 20.79        |
| Bcred_1   | .95                                  | .95          | n/a          | n/a          |
| Bcred_2   | .98                                  | .89          | 11.41        | 14.85        |
| Bcred_3   | .82                                  | .58          | 6.57         | 7.85         |
| Scost_1   | .70                                  | .70          | n/a          | n/a          |
| Scost_2   | 1.12                                 | .95          | 11.58        | 18.59        |
| Eunc_1  | .53                                  | .53          | n/a          | n/a          |
| Eunc_2  | .67                                  | .55          | 4.48         | 6.16         |
| Eunc_3  | .79                                  | .90          | 6.80         | 10.91        |
| Eunc_4  | .79                                  | .66          | 5.59         | 7.77         |
| Icost_1   | .82                                  | .82          | n/a          | n/a          |
| Icost_2   | .73                                  | .47          | 4.79         | 5.02         |
| Icost_3   | .73                                  | .47          | 4.80         | 4.99         |

### 6.1.2 SEM model without Performance Ambiguity

Finally, we examined the model excluding the variable performance ambiguity, in order to confirm whether it has an important effect on our model. By excluding performance ambiguity, we noticed that fewer variables were significant (Appendix 13 and Appendix 14). In terms of internal OHS units, only one variable is significant at the 10% level instead of two in the model with performance ambiguity. For external OHS units, only one variable is significant without performance ambiguity at the 10% level compared with four significant variables in the model with performance ambiguity. Also, we observed that the

model has a higher RMSEA value without performance ambiguity, indicating a worse fit (Table 16). The ratio chi-square (964.4) / *df* (704) (Table 16) with the exclusion of performance ambiguity equals 1.37. This is higher compared with the model with performance ambiguity. Overall, the model fit has weakened, demonstrating that performance ambiguity has an impact on our model and should therefore be included.

Table 16: Test statistics, comparison of SEM models

| Test statistics                         | Chi-square | df   | RMSEA |
|---|------------|------|-------|
| SEM model without Performance Ambiguity | 964.4      | 704  | .068  |
| SEM model with Performance Ambiguity    | 1430.24    | 1138 | .057  |

## 6.2 Test of the hypotheses

We test the hypotheses on the 10% level, with a t-value of 1.29 (Gripsrud, Olsson, and Silkoset 2004, 386). Table 17 presents the results of the hypotheses testing.

Table 17: Summary of the findings related to the hypotheses

| Hs  | Paths  | Standardized regression coefficients | t-values | Findings               |
|-----|--|--------------------------------------|----------|------------------------|
| H1a | Performance Ambiguity – Price Premium (External)             | .30                                  | 2.90***  | Supported              |
| H1b | Performance Ambiguity – Price Premium (Internal)             | .19                                  | 1.09     | Supported <sup>a</sup> |
| H2a | Quality – Performance Ambiguity (External)                   | -.44                                 | -1.13    | Not supported          |
| H2b | Quality – Performance Ambiguity (Internal)                   | -.28                                 | -.49     | Supported <sup>a</sup> |
| H3a | Reputation – Performance Ambiguity (External)                | .27                                  | .83      | Not supported          |
| H3b | Reputation – Performance Ambiguity (Internal)                | .15                                  | .30      | Supported <sup>a</sup> |
| H4a | Punishment - Performance Ambiguity (External)                | -.07                                 | -.66     | Not Supported          |
| H4b | Punishment - Performance Ambiguity (Internal)                | .06                                  | .40      | Supported <sup>a</sup> |
| H5a | Brand Investments – Brand Credibility (External)             | .00                                  | .03      | Not supported          |
| H5b | Brand Investments – Brand Credibility (Internal)             | .03                                  | .17      | Supported <sup>a</sup> |
| H5c | Brand Credibility - Price Premium (External)                 | -.05                                 | -.56     | Not Supported          |
| H5d | Brand Credibility - Price Premium (Internal)                 | -.25                                 | -1.59*   | Supported              |
| H6a | Switching Costs – Performance Ambiguity (External)           | .15                                  | 1.47*    | Supported              |
| H6b | Switching Costs – Performance Ambiguity (Internal)           | -.05                                 | -.28     | Supported <sup>a</sup> |
| H7a | Environmental Uncertainty – Performance Ambiguity (External) | .29                                  | 2.38***  | Supported              |
| H7b | Environmental Uncertainty – Performance Ambiguity (Internal) | .40                                  | 2.02**   | Not Supported          |
| H8a | Information Costs Saved – Performance Ambiguity (External)   | -.32                                 | -1.69**  | Not Supported          |
| H8b | Information Costs Saved – Performance Ambiguity (Internal)   | -.01                                 | -.04     | Supported <sup>a</sup> |
| H9a | Market Turbulence – Performance Ambiguity (External)         | n/a                                  | n/a      | n/a                    |
| H9b | Market Turbulence – Performance Ambiguity (Internal)         | n/a                                  | n/a      | n/a                    |

<sup>a</sup> Supported. However, not statistically supported. Refer to hypothesis

\**p* < .1

\*\**p* < .05

\*\*\**p* < .01

H1a: *External OHS units experience a positive impact from performance ambiguity on price premium.* The standardized regression coefficient is .30, indicating a positive covariance between performance ambiguity and price premium. The positive impact of performance ambiguity on price premium is significant (*t* = 2.90, *p* < .01). Hence, H1a is statistically supported.

H1b: *Internal OHS units do not experience a positive impact from performance ambiguity on price premium.* The standardized regression coefficient is .19, representing a positive covariance between performance ambiguity and price premium. The impact of performance ambiguity on price premium is not significant ( $t = 1.09, p > .1$ ) However, we argue that there is no positive impact from performance ambiguity to price premium with internal OHS units. Therefore, H1b is supported.

To investigate whether external OHS units experience a stronger positive impact of price premium compared with internal OHS units we perform an independent samples t-test (Table 18). We argue that external OHS units experience a stronger impact of price premium compared with internal OHS units ( $H_0$ ). To assess the statistical significance between external OHS units and internal OHS units on price premium we examine the one-tailed significance value. The value is .289 ( $.577/2$ ), which is higher than the alpha of .05. Therefore, we cannot reject  $H_0$ , indicating that external OHS units experience a stronger positive impact of price premium than internal OHS units.

Table 18: Independent samples t-test

|               |                         | Levene's Test for Equality of Variances |      | t-test for Equality of Means |     |                 |                 |                       |   |        |
|---------------|-------------------------|---|------|------------------------------|-----|-----------------|-----------------|-----------------------|---|--------|
|               |                         | F                                       | Sig. | t                            | df  | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference |        |
|               |                         |   |      |                              |     |                 |                 |                       | Lower                                     | Upper  |
| Price premium | Equal variances assumed | .025                                    | .876 | .559                         | 159 | .577            | .10720          | .19173                | -.27146                                   | .48586 |

H2a: *External OHS units experience a positive impact from quality on performance ambiguity.* The standardized regression coefficient is -.44, indicating a negative covariance between quality and performance ambiguity. The impact of quality on performance ambiguity is insignificant ( $t = -1.13, p > .1$ ). We thereby reject H2a.

H2b: *Internal OHS units do not experience a positive impact from quality on performance ambiguity.* The standardized regression coefficient is -.28, indicating a negative covariance between quality and performance ambiguity. The impact of quality on performance ambiguity is insignificant ( $t = -.49, p > .1$ ). H2b is therefore supported.

---

H3a: *External OHS units experience a positive impact from reputation on performance ambiguity.* The standardized regression coefficient is .27, indicating a positive covariance between reputation and performance ambiguity. The impact of reputation on performance ambiguity is insignificant ( $t = .83, p > .1$ ). This results in the rejection of H3a.

H3b: *Internal OHS units do not experience a positive impact from reputation on performance ambiguity.* The standardized regression coefficient is .15, indicating a positive covariance between reputation and performance ambiguity. The impact of reputation on performance ambiguity is insignificant ( $t = .30, p > .1$ ). H3b is therefore supported.

H4a: *External OHS units experience a negative impact from punishment on performance ambiguity.* The standardized regression coefficient is -.07, indicating a negative covariance between punishment and performance ambiguity. The impact of punishment on performance ambiguity is insignificant ( $t = -.66, p > .1$ ). We thereby reject H4a.

H4b: *Internal OHS units do not experience a negative impact from punishment on performance ambiguity.* The standardized regression coefficient is .06, indicating a positive covariance between punishment and performance ambiguity. The impact of punishment on performance ambiguity is insignificant ( $t = .40, p > .1$ ). H4b is therefore supported.

H5a: *External OHS units experience a positive impact from brand investments on brand credibility.* The standardized regression coefficient is .00, indicating no covariance between brand investments and brand credibility. The impact of brand investments on brand credibility is insignificant ( $t = .03, p > .1$ ). Therefore H5a is rejected.

H5b: *Internal OHS units do not experience a positive impact from brand investments on brand credibility.* The standardized regression coefficient is .03, indicating a positive covariance between brand investments and brand credibility. The impact of brand investments on brand credibility is insignificant ( $t = .17, p > .1$ ). H5b is therefore supported.



---

H5c: *External OHS units experience a positive impact from brand credibility on price premium.* The standardized regression coefficient is -.05, indicating a negative covariance between brand credibility and price premium. The impact of brand credibility on price premium is insignificant ( $t = -.56, p > .1$ ). H5c is therefore rejected.

H5d: *Internal OHS units do not experience a positive impact from brand credibility on price premium.* The standardized regression coefficient is -.25, indicating a negative covariance between brand credibility and price premium. The negative impact of brand credibility on price premium is significant ( $t = -1.59, p < .1$ ). The impact is in the opposite direction of what we expected. Therefore, H5d is statistically supported.

H6a: *External OHS units experience a positive impact from switching costs on performance ambiguity.* The standardized regression coefficient is .15, indicating a positive covariance between switching costs and performance ambiguity. The positive impact of switching costs on performance ambiguity is significant ( $t = 1.47, p < .1$ ). H6a is therefore statistically supported.

H6b: *Internal OHS units do not experience a positive impact from switching costs on performance ambiguity.* The standardized regression coefficient is -.05, indicating a negative covariance between switching costs and performance ambiguity. The impact of switching costs on performance ambiguity is insignificant ( $t = -.28, p > .1$ ). H6b is therefore supported.

H7a: *External OHS units experience a positive impact from environmental uncertainty on performance ambiguity.* The standardized regression coefficient is .29, indicating a positive covariance between environmental uncertainty and performance ambiguity. The positive impact of environmental uncertainty on performance ambiguity is significant ( $t = 2.38, p < .01$ ). H7a is therefore statistically supported.

H7b: *Internal OHS units do not experience a positive impact from environmental uncertainty on performance ambiguity.* The standardized regression coefficient is .40, indicating a positive covariance between environmental uncertainty and

performance ambiguity. The positive impact of environmental uncertainty on performance ambiguity is significant ( $t = 2.02, p < .05$ ). This is the opposite of what we hypothesized, therefore we reject H7b.

H8a: *External OHS units experience a positive impact from information costs saved on performance ambiguity.* The standardized regression coefficient is  $-.32$ , indicating a negative covariance between information costs saved and performance ambiguity. The negative impact of information costs saved on performance ambiguity is significant ( $t = -1.69, p < .05$ ). This is the opposite of what we hypothesized, therefore we reject H8a.

H8b: *Internal OHS units do not experience a positive impact from information costs saved on performance ambiguity.* The standardized regression coefficient is  $-.01$ , indicating a negative covariance between information costs saved and performance ambiguity. The impact of information costs saved on performance ambiguity is insignificant ( $t = -.04, p > .1$ ). H8b is therefore supported.

H9a-b: *External/Internal OHS units experience a positive/negative impact from market turbulence on performance ambiguity.* As we removed market turbulence, we cannot perform statistical tests or hypotheses testing.

## **Chapter 7 Discussion**

In this chapter we first discuss how our findings contribute to the theories we rely on in the thesis. Then, we propose the central findings of the study, in connection with relevant existing literature by investigating the relationships stipulated in the research model. We address findings for both internal OHS units and external OHS units. Thereafter, we present theoretical and managerial implications.

### *7.1 General discussion*

Our findings show that several factors influence the level of performance ambiguity. Therefore, our results extend current research on performance ambiguity. Furthermore, our results support the findings of Mishra, Heide and Cort (1998) that a link exists between performance ambiguity and price premium. However, we refine the knowledge surrounding performance ambiguity and price premiums in relation with transaction cost theory. Specifically, our results extend the issues of make or buy decisions in a previously under-studied market. Our results show that factors influence performance ambiguity and price premium differently depending on whether companies pursue make or buy strategies. We now discuss the specific relationships specified in the research model.

#### *7.1.1 Performance Ambiguity and Price Premium*

Both hypotheses concerning performance ambiguity and its relation with price premium were supported. This indicates that performance ambiguity has a significant effect for external OHS units whilst it has no effect for internal OHS units on price premium. For external OHS units this is aligned with the results of Mishra, Heide and Cort (1998) who find that the greater the level performance ambiguity the greater the magnitude of price premiums. Our findings suggest that buyers exist that are willing to pay a price premium to overcome the problems of performance ambiguity. Our results are consistent with Snow (2010) and Zeithaml (1988) who argue that risk averters readily pay a price premium to reduce ambiguity. As the OHS services possess credence properties, buyers try to protect themselves by paying a price premium. We agree with Spence (2002) and Kirmani and Rao (2000) that the signal effect of charging a price premium may be used to reduce problems with performance ambiguity, as it can distinguish low-

---

quality providers from high-quality providers in the OHS market. When it comes to internal OHS units we found what we expected, that they have no effect of using price premiums to reduce performance ambiguity, as they are owned by their parent company.

### *7.1.2 Quality and Performance Ambiguity*

In contrast to our predictions, there is no significant positive impact from quality on performance ambiguity for external OHS units. We argued that signaling quality could help buyers in selecting an external OHS unit and thus reduce performance ambiguity. However, this argument is based on the premise that buyers could evaluate the quality of OHS units. Darby and Karni (1973) suggest that it is difficult to judge credence services. Following this statement, one reason for quality not having a significant impact on performance ambiguity might be that buyers are not able to judge the service quality of different OHS units. Our findings suggest that quality cannot be used as a signaling strategy for external OHS units, in order to overcome problems with performance ambiguity. This contrasts with the findings of Spence (2002) and Kirmani and Rao (2000). To conclude, the results from our study indicate that buyers experience no reduction in performance ambiguity when external OHS units try to signal their level of quality. For internal OHS units we find support for our hypothesis, that they do not experience a positive impact from quality on performance ambiguity. As they are owned by the company that is responsible for the quality evaluation, the incentives for evaluating and comparing the level of quality might be absent.

### *7.1.3 Reputation and Performance Ambiguity*

Our results show that reputation has no significant positive impact on performance ambiguity for external OHS and internal OHS units. For external OHS units this is opposite to our assumption that reputation might be one way to reduce performance ambiguity in the market. Our findings contrast Shapiro (1982, 1983) who claims that reputation can be used to overcome the problems of performance ambiguity. There might be some explanations why we do not find significant results. Herbig and Milewicz (1993) argue that consumers use reputation to infer product quality. The effect of utilizing reputation to reduce

---

performance ambiguity can be weakened, as customers cannot infer the quality of the services provided by OHS units. Shapiro (1983) notes that buyers might use the quality of the services provided by a company as an indicator of reputation. Furthermore, reputation depends on initial beliefs and observation of a company's past behavior (Herbig and Milewicz 1993). As services delivered by OHS units are complex and intangible, it becomes difficult to evaluate a company's past behavior and quality. Hence, establishing a reputation in the marketplace might be challenging. Because of this, using reputation as a signaling tool is not likely to reduce performance ambiguity. For internal OHS units the findings are aligned with the hypothesis. Internal OHS units do not experience a positive impact from reputation on performance ambiguity. As they are owned by their parent company signaling a reputation becomes less important because there is less performance ambiguity present within a company.

#### *7.1.4 Punishment and Performance Ambiguity*

In contrast with the hypothesis, external OHS units do not experience a significant negative impact from punishment on performance ambiguity. Our results indicate that using punishment as a tool to prevent cheating and thus reduce performance ambiguity is not widely used in the OHS market. We believed that the mechanism for detecting cheating would have a stronger impact for external OHS units. Our findings suggest the opposite. A possible explanation for this could be that buyers cannot evaluate the true level of quality, and thereby find it hard to detect and punish cheating. According to NIOH, buyers change their OHS units more frequently nowadays (Meeting with NIOH, 23.6.2010). However, our findings disprove our belief that the switching behavior relates to cheating in the marketplace. As expected, internal OHS units do not experience a negative impact from punishment on performance ambiguity. We believe that this is because internal OHS units are less likely to cheat their owners.

#### *7.1.5 Brand Investments and Brand Credibility*

Our findings show that external OHS units, in contrast to what we expected, do not experience a positive impact from brand investments on brand credibility. This differs from the findings of Erdem and Swait (1998) and Erdem, Swait and

---

Louviere (2002), who postulate that sellers may improve brand credibility by brand investments. A possible explanation is that OHS units spend limited resources on marketing efforts, such as brand investments. NIOH claimed that OHS units have traditionally paid little attention to marketing (Meeting with NIOH, 23.6.2010). Our findings indicate that this lack of focus on marketing has not changed. Erdem and Swait (1998) argue that brand credibility is one of the most important choice criteria for buyers. This is especially when a market has imperfect and asymmetric information, as the OHS market possesses. However, our results show that brand credibility is not used as a criterion in decision making. This could be due to the aforementioned lack of focus on marketing by sellers, and that buyers have difficulties evaluating information cues from OHS units. For internal OHS units the findings are consistent with the hypothesis. Since internal OHS units are owned by the parent company, the incentives for branding their services are absent. In addition, internal OHS units might not care as much about marketing, because they believe they face little competition.

#### *7.1.6 Brand Credibility and Price Premium*

We expected that external OHS units would experience a positive impact from brand credibility on price premium. Interestingly, our findings differ from our expectations. As argued previously, brand credibility does not seem to play an important role in the OHS market. Due to this, brand credibility to price premium might be influenced from the beginning. One of the reasons we argued that brand credibility would positively impact price premium is that credible brands can reduce risk, and that some buyers are willing to pay a price premium to reduce uncertainty (Snow 2010). The logic stated by Keller (2008, 7) that a credible brand reduces the risk for buyers, simplifies selection and could potentially lead to price premiums is not statistically supported in our study. However, our findings support Erdem and Swait (1998), Rao and Monroe (1996) and Rao and Bergen (1992) who argue that buyers can rely on credible brands instead of paying price premiums to assure quality. The more a company has invested in building a credible brand the more the seller has to lose by cheating on quality (Erdem and Swait 1998). Our results indicate that buyers trust the image, that companies deliver high quality, and therefore are not willing to pay price premiums to assure quality. Internal OHS units experience a negative significant impact from brand

---

credibility on price premium. In other words, they see no value in branding their services to their parent company in order to gain a price premium.

#### *7.1.7 Switching Costs and Performance Ambiguity*

Both hypotheses regarding switching costs and its relation with performance ambiguity were supported. The results show that switching costs has a significant effect for external OHS units whilst it has no effect for internal OHS units on performance ambiguity. Our findings support our argument that it is easier for buyers of external OHS units to switch between sellers. Bendapudi and Berry (1997) argue that one is less willing to change if there is high cost of negotiating, monitoring and evaluating quality with higher levels of performance ambiguity. For external OHS units, our findings show that switching costs reduces performance ambiguity because buyers are not that committed to specific relationships. Therefore, the barriers for switching are lower for buyers of external OHS services compared with owners of internal OHS units. Consequently, owners of internal OHS units invest more in relationships and therefore are less likely to switch OHS units. Hence, switching costs do not reduce performance ambiguity for internal OHS units.

#### *7.1.8 Environmental Uncertainty and Performance Ambiguity*

As predicted, external OHS units experience a significant positive impact from environmental uncertainty on performance ambiguity. Surprisingly, internal OHS units also experience a significant positive impact in contrast to our expectations. For external OHS units the findings are consistent with the hypothesis, that the greater the environmental uncertainty the greater the performance ambiguity. The results corresponds with Milliken's (1987) findings, arguing that organizations that are uncertain about their environment devote greater attention and resources to understanding the mechanisms operating in the market. Our findings suggest that buyers of external OHS services face such uncertainty, and therefore must deal with performance ambiguity by devoting resources to understand the market. By developing an understanding of the market, environmental uncertainty decreases. This will lead to a reduction of performance ambiguity. We argued that internal OHS units might not have the same incentives to monitor the market. This

---

is supported by our results. For instance, internal OHS units find it very difficult to predict the number of OHS providers in the market. The lack of incentives for monitoring the market creates more environmental uncertainty for internal OHS units, and thereby increases performance ambiguity. In addition, as internal OHS units are owned by their parent company our results indicate that they are less likely to deal with competition, again contributing to increase environmental uncertainty.

#### *7.1.9 Information Costs Saved and Performance Ambiguity*

In contrast to our predictions, external OHS units do not experience a positive impact from information costs saved on performance ambiguity. We argued that external OHS units would benefit the most from conveying credible information, in an attempt to reduce information costs for buyers. Our logic corresponds with Erdem and Swait (1998), who argue that such information could reduce information costs and thereby performance ambiguity. However, our results indicate the opposite. Since the impact from information costs saved on performance ambiguity is significantly negative, conveying information in an attempt to reduce information costs seems to have little effect on reducing performance ambiguity for buyers. One reason for this might be that buyers of external OHS units are not willing to incur information costs to reduce performance ambiguity. This is in contrast with the findings of Shugan (1980). Internal OHS units also do not experience a positive impact from information costs saved on performance ambiguity, however this was as expected. A reason for this might be that owners of internal OHS units believe that they can rely on the OHS unit, and that the OHS unit provides the services the owners want. Therefore they perceive that they have limited gains from searching for information from other alternatives. Such searching would only increase their costs, and not provide them with any additional value such as reduced performance ambiguity.

#### *7.2 Theoretical implications*

Pricing has received little academic investigation (Hinterhuber 2004). In addition, pricing strategies have remained an under-studied dimension both in its



---

conceptual dimension and in managerial practice (Solberg, Stöttinger, and Yaprak 2006). In a study of major marketing journals, Malhotra (1996) finds that less than 2% of all articles investigate the subject of pricing. As such, our study within pricing contributes to the understanding of this under-studied concept.

To our knowledge no study has focused on price premiums in relation with performance ambiguity in the OHS market. Our study extends current literature by investigating which factors causes price premiums, and how this is linked with performance ambiguity. An important theoretical implication from our findings is that price premiums can be used to overcome problems of performance ambiguity in a competitive market. Several studies have investigated the concept of price premium, and that risk averters exist who are willing to pay a price premium to overcome uncertainty (Snow 2010; Zeithaml 1988; Mishra, Heide, and Cort 1998; Rao and Bergen 1992; Rao and Monroe 1996; Klein and Leffler 1981). However, as far as we know, none has studied which factors influence performance ambiguity, and how performance ambiguity affect price premium through the indirect effect of factors influencing performance ambiguity. Instead, researchers have investigated the direct link between factors and price premium. For instance, Klein and Leffler (1981) study the link between quality and price premium. Therefore, our research enhances the knowledge concerning performance ambiguity, which in our opinion is an under-studied construct. Additionally, through our research we develop a more theoretical understanding of the link between performance ambiguity and price premium.

A theoretical implication can also be related to our investigation of the relationships between brand investments and brand credibility, and brand credibility and price premium. The insignificant effect from brand investments on brand credibility contrasts with the results from Erdem and Swait (1998) and Erdem, Swait and Louviere (2002), who found that sellers may improve brand credibility by brand investments. Also, we found no positive effect from brand credibility on price premium. This is consistent with Rao and Monroe (1996) who found that buyers trust that company delivers high quality, and therefore are not willing to pay a price premium.

---

Another theoretical implication is that we have discovered that factors influence price premiums and performance ambiguity differently, depending on how companies purchase services. This builds upon transaction cost theory, where transactions are either performed within a company (make) or outside the company by other providers (buy) (Williamson 1975). We have investigated these differences through internal OHS units (make) and external OHS units (buy). Within this theoretical implication, an important finding is that price premiums only reduce performance ambiguity for companies purchasing services outside the firm. In summary, our results show that different factors have different effects on performance ambiguity, and thus price premium.

### ***7.3 Managerial implications***

As discussed previously, dealing with pricing represents one of the greatest challenges for managers (Smith et al. 1999). In the OHS market this problem is a truism, as OHS units have traditionally had little focus on marketing (Meeting with NIOH, 23.6.2010). Findings from our study reveal that OHS units still do not devote resources on marketing of their services. As price is an essential part of marketing (Perreault, Cannon, and McCarthy 2010, 38), a consequence is that price also has received limited attention in the OHS market. To the extent OHS units have considered price, it has only been to present it as the lowest possible cost for buyers, and not as a strategic variable. A general managerial implication is therefore to devote greater attention to pricing as a managerial function in the OHS market. This is consistent with Morris, Avila and Pitt (1996) who argue that price must become a strategic decision variable.

The importance of price becomes even more evident when companies operate in turbulent markets (Morris, Avila, and Pitt 1996). Such turbulence creates performance ambiguity. Lie (2009) states that OHS units face intensified competition, and that buyers of OHS services are not able to separate effective OHS units from “charlatans”. These factors contribute to increase the degree of performance ambiguity in the OHS market and support the need for devoting greater attention to pricing.

---

We agree with Morris, Avila and Pitt (1996) that pricing can create advantages for companies, only if managers develop a better understanding of the components that influence pricing. Our study highlights one sub-area of pricing, which is price premium and how it is related to performance ambiguity. Our managerial implications relate to factors creating advantages for companies, by reducing performance ambiguity and contribute to the ability to charge price premiums. One key finding that can help managers of external OHS units is that signaling a price premium can be used to overcome problems of performance ambiguity. This will make selection easier for buyers, as it reduces uncertainty.

As branding activities did not result in increased credibility or contributions to price premium, we are tempted to recommend not focusing on marketing the services in the OHS market. However, we cannot draw the conclusion that companies should not devote resources on branding based on our findings. Generally, buyers prefer sellers with a credible brand that conveys quality (Erdem and Swait 1998). As branded sellers are more attractive, they are likely to increase market share and make it harder for competitors to attain profitable prices (Rao 1993).

Our findings indicate that buyers of external OHS services are less committed to long-term relationships with their OHS unit. A managerial implication for external OHS units is therefore to attempt to establish greater barriers, and thus increase switching cost for buyers. Such long-term relationships can be a potent source of income for external OHS units.

We found that increased environmental uncertainty results in a higher degree of performance ambiguity. A recommendation is therefore that both internal and external OHS should devote resources to gain a better understanding of the market in which they operate, as this in turn this will reduce performance ambiguity.

The new law regulations, and the findings from Lie (2009) suggest an increased competition in the OHS market. This is exemplified by the increased volume of profit-based OHS units in recent time. This poses some interesting developments in the market. We have argued that external OHS units face more competition and more performance ambiguity compared with internal OHS units. However, it is

---

likely that internal OHS units will be affected by increased competition. This development can lead to more similar conditions for the two types of OHS units. As internal OHS units have less experience with competition, they will face greater challenges with adapting to the new environment. The lack of market mechanisms for internal OHS units is likely to have prohibited innovation and the focus on operating efficiently. A managerial implication for internal OHS units is therefore to implement strategies and mechanisms for responding to a more competitive environment. Lastly, in order to be able to gain price premiums we recommend that both internal and external OHS units implement an external focus of pricing, with formal and ongoing monitoring efforts, as supported by Morris, Avila and Pitt (1996).

---

## **Chapter 8 Limitations and Future Research**

This study has a number of limitations. The data was partly collected from a voluntarily based registry, which means that we got responses from respondents that have actively shown an interest in the registry. This might have harmed the randomization of our research resulting in biased estimates. The overall response rate was sufficient for statistical analysis. However, we only obtained 45 respondents from internal OHS units. This is lower than what we wanted. Despite this, we achieved a good overall model. We only got in touch with one respondent from each OHS unit. This could be problematic as the respondent might have given biased answers when responding on behalf of the unit. Also, we did not let respondents fill in comments in the questionnaire, which might have given us additional information. We did this on purpose, as we would have received too much qualitative data, which we would not have had time to investigate properly. Additionally, internal OHS units did not consider price in the manner we expected. As such, they had trouble responding to the questions regarding price premium. Moreover, the research was conducted in a single market and this will affect the generalizability of the results negatively.

One area of future research that could give valuable insight is to replicate the study in other suitable markets. Researchers could check whether our findings hold outside the OHS market. In addition, researchers could investigate price premium and its link with performance ambiguity in different settings. Additionally, researcher could examine other factors that effect price premium and performance ambiguity that we did not incorporate in our study. For example, trust could play a role in reducing performance ambiguity. To gain an even more in-depth knowledge of the market, researchers could collect data not only from managers, but include customers in the study. Researchers could reveal if gaps exists between what managers think about price premiums compared with customers. We argued for increasing competition in the OHS market. Therefore, it would be interesting to conduct a follow-up study in order to investigate how competition impacts the way external and internal OHS units operate in order to gain price premiums.

---

**References**

- Akerlof, George A. 1970. The Market for "Lemons": Quality Uncertainty and the Market Mechanism. *The Quarterly Journal of Economics* 84 (3):488-500.
- American Marketing Association. *Dictionary* 2010 [cited 14.01. Available from [http://www.marketingpower.com/\\_layouts/Dictionary.aspx?dLetter=B](http://www.marketingpower.com/_layouts/Dictionary.aspx?dLetter=B).
- American Society for Quality. *ASQ: Learn about Quality* 2010 [cited 05.08. Available from <http://asq.org/glossary/q.html>.
- Babakus, Emin, Carol C. Beinstock, and James R. Van Scotter. 2004. Linking Perceived Quality and Customer Satisfaction to Store Traffic and Revenue Growth. *Decision Sciences* 35 (4):713-737.
- Baron, M Reuben, and David A. Kenny. 1986. The Moderator-Mediator Variable Distinction in Social Psychological Research: Conceptual, Strategic, and Statistical Considerations. *Journal of Personality and Social Psychology* 51 (6):1173-1182.
- Bendapudi, Neeli, and Leonard L. Berry. 1997. Customers' motivations for maintaining relationships with service providers. *Journal of Retailing* 73 (1):15-37.
- Biong, Harald, and Fred Selnes. 1997. The Strategic Role of the Salesperson in Established Buyer-Seller Relationships. *Journal of Business-to-Business Marketing* 3 (3):39 - 78.
- Bowen, David E., and Gareth R. Jones. 1986. Transaction Cost Analysis of Service Organization-Customer Exchange. *The Academy of Management Review* 11 (2):428-441.
- Bunn, Michele D., Gul T. Butaney, and Nicole P. Hoffman. 2001. An Empirical Model of Professional Buyers' Search Effort. *Journal of Business-to-Business Marketing* 8 (4):55 - 84.
- Campbell, Donald T. 1955. The Informant in Quantitative Research. *The American Journal of Sociology* 60 (4):339-342.
- Chakravarthy, Bala. 1997. A New Strategy Framework for Coping with Turbulence. *Sloan Management Review* 38 (2):69-82.
- Darby, Michael R., and Edi Karni. 1973. FREE COMPETITION AND THE OPTIMAL AMOUNT OF FRAUD. *Journal of Law & Economics* 16 (1):67-88.
- David, Robert J., and Shin-Kap Han. 2004. A systematic assessment of the empirical support for transaction cost economics. *Strategic Management Journal* 25 (1):39-58.
- Diamantopoulos, Adamantios, and Judy A. Siguaw. 2000. *Introducing LISREL: a guide for the Uninitiated*. London: Sage publications.
- Downey, H. Kirk, and John W. Slocum. 1975. Uncertainty: Measures, Research, and Sources of Variation. *Academy of Management Journal* 18 (3):562-578.
- Duncan, Robert B. 1972. Characteristics of Organizational Environments and Perceived Environmental Uncertainty. *Administrative Science Quarterly* 17 (3):313-327.
- Ellsberg, Daniel. 1961. Risk, Ambiguity, and the Savage Axioms. *The Quarterly Journal of Economics* 75 (4):643-669.
- Erdem, Tülin, and Joffre Swait. 1998. Brand Equity as a Signaling Phenomenon. *Journal of Consumer Psychology (Lawrence Erlbaum Associates)* 7 (2):131.
- Erdem, Tülin, and Joffre Swait. 2004. Brand Credibility, Brand Consideration, and Choice. *The Journal of Consumer Research* 31 (1):191-198.

- 
- Erdem, Tülin, Joffre Swait, and Jordan Louviere. 2002. The impact of brand credibility on consumer price sensitivity. *International Journal of Research in Marketing* 19 (1):1-19.
- Fox, Richard J., Melvin R. Crask, and Jonghoon Kim. 1988. Mail Survey Response Rate. *Public Opinion Quarterly* 52 (4):467-491.
- Frankfort-Nachmias, Chava, and David Nachmias. 2008. *Research methods in the social sciences*. New York: Worth Publishers.
- Galetzka, Mirjam, Joost W. M. Verhoeven, and Ad Th H. Pruyn. 2006. Service validity and service reliability of search, experience and credence services: A scenario study. *International Journal of Service Industry Management* 17 (3/4):271-283.
- George, Darren, and Paul Mallery. 2009. *SPSS for Windows step by step: a simple guide and reference, 16.0 update*. Boston, Mass.: Pearson.
- George, Darren, and Paul Mallery. 2011. *SPSS for Windows step by step: a simple guide and reference 18.0 update*. Boston: Allyn & Bacon.
- Geyskens, Inge, Jan-Benedict E. M. Steenkamp, and Nirmalya Kumar. 2006. MAKE, BUY, OR ALLY: A TRANSACTION COST THEORY META-ANALYSIS. *Academy of Management Journal* 49 (3):519-543.
- Ghauri, Pervez N., and Kjell Grønhaug. 2002. *Research methods in business studies: a practical guide*. Harlow: Financial Times Prentice Hall.
- Gifford, William E., H. Randolph Bobbitt, and John W. Slocum, Jr. 1979. Message Characteristics and Perceptions of Uncertainty by Organizational Decision Makers. *The Academy of Management Journal* 22 (3):458-481.
- Grant, Robert M. 2010. *Contemporary strategy analysis*. Chichester: Wiley.
- Greenley, Gordon E. 1995. FORMS OF MARKET ORIENTATION IN UK COMPANIES. *Journal of Management Studies* 32 (1):47-66.
- Gripsrud, Geir, Ulf Henning Olsson, and Ragnhild Silkoset. 2004. *Metode og dataanalyse: med fokus på beslutninger i bedrifter*. Kristiansand: Høyskoleforl.
- Hair, Joseph F., William C. Black, Barry J. Babin, and Rolph E. Anderson. 2010. *Multivariate data analysis: a global perspective*. Upper Saddle River, N.J.: Pearson.
- Hair, Joseph F., William C. Black, Barry J. Babin, Rolph E. Anderson, and Ronald L. Tatham. 2006. *Multivariate data analysis*. Upper Saddle River, N.J.: Prentice Hall.
- Heide, Jan B., and Allen M. Weiss. 1995. Vendor Consideration and Switching Behavior for Buyers in High-Technology Markets. *The Journal of Marketing* 59 (3):30-43.
- Herbig, Paul, and John Milewicz. 1993. The Relationship of Reputation and Credibility to Brand Success. *Journal of Consumer Marketing* 10 (3):18-24.
- Hinterhuber, Andreas. 2004. Towards value-based pricing--An integrative framework for decision making. *Industrial Marketing Management* 33 (8):765-778.
- Holmstrom, Bengt. 1979. Moral hazard and observability. *Bell Journal of Economics* 10 (1):74-91.
- Hsieh, Yi-Ching, Hung-Chang Chiu, and Mei-Yi Chiang. 2005. Maintaining a committed online customer: A study across search-experience-credence products. *Journal of Retailing* 81 (1):75-82.
- Hult, G. Tomas M., Robert F. Hurley, and Gary A. Knight. 2004. Innovativeness: Its antecedents and impact on business performance. *Industrial Marketing Management* 33 (5):429-438.
-

- 
- Husted, Bryan W. 2007. Agency, Information, and the Structure of Moral Problems in Business. *Organization Studies* 28 (2):177-195.
- Hutton, James G. 1997. A study of brand equity in an organizational-buying context. *Journal of Product & Brand Management* 6 (6):428.
- Janssens, Wim, Katrien Wijnen, Patrick De Pelsmacker, and Patrick Van Kenhove. 2008. *Marketing research with SPSS*. Harlow: Prentice Hall/Financial Times.
- Jaworski, Bernard J., and Ajay K. Kohli. 1993. Market Orientation: Antecedents and Consequences. *The Journal of Marketing* 57 (3):53-70.
- Jöreskog, Karl G., and Dag Sörbom. 1993. *LISREL 8: structural equation modeling with the SIMPLIS command language*. Hillsdale, N.J.: Scientific Software International.
- Keller, Kevin Lane. 2003. *Strategic brand management: building, measuring, and managing brand equity*. Upper Saddle River, N.J.: Prentice Hall.
- Keller, Kevin Lane. 2008. *Strategic brand management: building, measuring, and managing brand equity*. Upper Saddle River, N.J.: Pearson/Prentice Hall.
- Keller, Kevin Lane, and Donald R. Lehmann. 2003. How Do Brands Create Value? *Marketing Management* 12 (3):26-31.
- Kirman, Amna, and Akshay R. Rao. 2000. No Pain, No Gain: A Critical Review of the Literature on Signaling Unobservable Product Quality. *Journal of Marketing* 64 (2):66-79.
- Klein, Benjamin, and Keith B. Leffler. 1981. The Role of Market Forces in Assuring Contractual Performance. *The Journal of Political Economy* 89 (4):615-641.
- Klein, Saul. 1989. A Transaction Cost Explanation of Vertical Control in International Markets. *Journal of the Academy of Marketing Science* 17 (3):253-260.
- Kohli, Ajay K., and Bernard J. Jaworski. 1990. Market Orientation: The Construct, Research Propositions, and Managerial Implications. *The Journal of Marketing* 54 (2):1-18.
- Kreps, David M. 1990. *A course in microeconomic theory*. Princeton, N.J.: Princeton University Press.
- Lie, Arve. 2009. A new development for occupational health services in Norway. *SJWEH Suppl* 7:48-52.
- Lützkendorf, Thomas, and Thorsten M. Speer. 2005. Alleviating asymmetric information in property markets: building performance and product quality as signals for consumers. *Building Research & Information* 33 (2):182-195.
- Malhotra, Naresh. 1996. The impact of the academy of marketing science on marketing scholarship: An analysis of the research published in JAMS. *Journal of the Academy of Marketing Science* 24 (4):291-298.
- Malhotra, Naresh K. 2010. *Marketing research: an applied orientation*. Boston: Pearson.
- Miller, Danny. 1987. The structural and environmental correlates of business strategy. *Strategic Management Journal* 8 (1):55-76.
- Milliken, Frances J. 1987. Three Types of Perceived Uncertainty about the Environment: State, Effect, and Response Uncertainty. *The Academy of Management Review* 12 (1):133-143.
- Mishra, Debi Prasad, Jan B. Heide, and Stanton G. Cort. 1998. Information Asymmetry and Levels of Agency Relationships. *Journal of Marketing Research (JMR)* 35 (3):277-295.



- 
- Mitchell, Vincent-Wayne. 1995. Organizational Risk Perception and Reduction: A Literature Review. *British Journal of Management* 6 (2):115-133.
- Monroe, Kent B. 2003. *Pricing: making profitable decisions*. Boston: McGraw-Hill/Irwin.
- Morris, Michael H., Ramon A. Avila, and Leyland F. Pitt. 1996. PRICING UNDER CONDITIONS OF ENVIRONMENTAL TURBULENCE: A CONCEPTUAL AND EMPIRICAL ASSESSMENT. *Journal of Marketing Management (10711988)* 6 (2):1-16.
- Nelson, Phillip. 1970. Information and Consumer Behavior. *The Journal of Political Economy* 78 (2):311-329.
- NIOH. *Generell Oversikt* 2010 [cited 2.12. Available from <http://apps.didac.no/bht/rapporter/general.asp>.
- Norwegian Labour Inspection Authority. *Faktaside: Ny ordning for bedriftshelsetjeneste fra 2010* 2010 [cited 06.12.2010. Available from <http://www.arbeidstilsynet.no/fakta.html?tid=102478>.
- Ostrom, Amy, and Dawn Iacobucci. 1995. Consumer Trade-Offs and the Evaluation of Services. *The Journal of Marketing* 59 (1):17-28.
- Pedhazur, Elazar J., and Liora Pedhazur Schmelkin. 1991. *Measurement, design, and analysis: an integrated approach*. Hillsdale, N.J.: Lawrence Erlbaum Associates.
- Perreault, William D., Joseph P. Cannon, and E. Jerome McCarthy. 2010. *Basic marketing: a marketing strategy planning approach*. Boston: McGraw-Hill/Irwin.
- Porter, M.E. 1996. *What is strategy?*: Harvard Business School Press.
- Rao, Akshay R. 1993. The Price of Quality. *Pricing Strategy and Practice* 1 (2):4-15.
- Rao, Akshay R., and Mark E. Bergen. 1992. Price Premium Variations as a Consequence of Buyers' Lack of Information. *The Journal of Consumer Research* 19 (3):412-423.
- Rao, Akshay R., Qu Lu, and Robert Ruekert. 1999. Signaling Unobservable Product Quality Through a Brand Ally. *Journal of Marketing Research (JMR)* 36 (2):258-268.
- Rao, Akshay R., and Kent B. Monroe. 1996. Causes and Consequences of Price Premiums. *The Journal of Business* 69 (4):511-535.
- Rindfleisch, Aric, and Jan B. Heide. 1997. Transaction Cost Analysis: Past, Present, and Future Applications. *The Journal of Marketing* 61 (4):30-54.
- Santos-Vijande, María Leticia, and Luis Ignacio Álvarez-González. 2007. Innovativeness and organizational innovation in total quality oriented firms: The moderating role of market turbulence. *Technovation* 27 (9):514-532.
- Saunders, Mark N. K., Philip Lewis, and Adrian Thornhill. 2009. *Research methods for business students*. Essex: Pearson Education.
- Shapiro, Carl. 1982. Consumer Information, Product Quality, and Seller Reputation. *The Bell Journal of Economics* 13 (1):20-35.
- Shapiro, Carl. 1983. Premiums for High Quality Products as Returns to Reputations. *The Quarterly Journal of Economics* 98 (4):659-680.
- Shostack, G. Lynn. 1987. Service Positioning through Structural Change. *The Journal of Marketing* 51 (1):34-43.
- Shugan, Steven M. 1980. The Cost of Thinking. *Journal of Consumer Research* 7 (2):99-111.

- 
- Skaggs, Bruce C., and Charles C. Snow. 2004. The Strategic Signaling of Capabilities by Service Firms in Different Information Asymmetry Environments. *Strategic Organization* 2 (3):271-291.
- Slater, Stanley F., and John C. Narver. 1994. Does Competitive Environment Moderate the Market Orientation-Performance Relationship? *The Journal of Marketing* 58 (1):46-55.
- Smith, Michael F., Indrajit Sinha, Richard Lancioni, and Howard Forman. 1999. Role of Market Turbulence in Shaping Pricing Strategy. *Industrial Marketing Management* 28 (6):637-649.
- Snow, Arthur. 2010. Ambiguity and the value of information. *Journal of Risk & Uncertainty* 40 (2):133-145.
- Solberg, Carl Arthur, Barbara Stöttinger, and Attila Yaprak. 2006. A Taxonomy of the Pricing Practices of Exporting Firms: Evidence from Austria, Norway, and the United States. *Journal of International Marketing* 14 (1):23-48.
- Spence, Michael. 1973. JOB MARKET SIGNALING. *Quarterly Journal of Economics* 87 (3):355-374.
- Spence, Michael. 2002. Signaling in Retrospect and the Informational Structure of Markets. *The American Economic Review* 92 (3):434-459.
- Stump, Rodney L., and Jan B. Heide. 1996. Controlling Supplier Opportunism in Industrial Relationships. *Journal of Marketing Research (JMR)* 33 (4):431-441.
- Suhr, Diana D. 2011. *Exploratory or Confirmatory Factor Analysis?* 2001 [cited 05.06.2011  
2011]. Available from <http://www2.sas.com/proceedings/sugi31/200-31.pdf>.
- Tomassen, Sverre. 2004. The effects of transaction costs on the performance of foreign direct investments: an empirical investigation, Handelshøyskolen BI, Oslo.
- Urbany, Joel E., Peter R. Dickson, and Rosemary Kalapurakal. 1996. Price Search in the Retail Grocery Market. *The Journal of Marketing* 60 (2):91-104.
- Webb, John. 2000. Questionnaires and their Design. *Marketing Review* 1 (2):197.
- Wenstøp, Fred. 2003. *Statistikk og dataanalyse*. Oslo: Universitetsforl.
- Williamson, Oliver E. 1981. The Economics of Organization: The Transaction Cost Approach. *The American Journal of Sociology* 87 (3):548-577.
- Williamson, Oliver E. . 1975. *Markets and Hierarchies: Analysis and Antitrust Implications*: New York: Free Press.
- Zeithaml, Valarie A. 1988. Consumer Perceptions of Price, Quality, and Value: A Means-End Model and Synthesis of Evidence. *Journal of Marketing* 52 (3):2-22.

## Appendices

### Appendix 1 – Operationalization of the variables

| item label        | Question/Statement  |
|-------------------|---|
| descript 1        | Er BHT hos dere..... A) Fellesordning B) Egenordning  |
| descript 2        | Privat eller offentlig bedrift  |
| descript 3        | Hvor mange årsverk har dere i deres BHT?  |
| descript 4        | Fellesordning: Hvor mange bedrifter selger dere BHT tjenester til   |
| descript 5        | Størrelse på BHT i forhold til salg?  |
| descript 6        | Størrelse på BHTet i forhold til lønnsomhet?  |
| descript 7        | Årstall når BHT ble etablert?   |
| descript 8        | Fellesordning: Hvor mange av deres ingåtte avtaler har blitt lagt ut på anbud?  |
| premium_1         | Våre kunder er villige til å betale en høyere pris enn hva som er normalt for liknende BHT tjenester                      |
| premium_2         | Den prisen vi krever for BHT tjenester er betydelig høyere enn hva våre konkurrenter krever for tilsvarende BHT tjenester |
| premium_3         | Vi har de høyeste prisene innenfor BHT tjenester sammenlignet med prisen generelt i markedet                              |
| premium_4         | Vår BHT krever en pris som totalsett er høyere enn normalt for tilsvarende BHT tjenester                                  |
| quality_1         | Vår BHT mener at det å yte høy kvalitet er avgjørende for våre kunder   |
| quality_2         | Våre kunder vil pådra seg et betydelig tap dersom det viser seg at vi leverer tjenester av lav kvalitet                   |
| quality_3         | Våre kunder forsikrer seg om at kvaliteten på våre tjenester er høy   |
| quality_4         | Tjenestene som leveres av vår BHT har generelt sett høy kvalitet  |
| reputation_1      | Vår BHT har et svært godt rykte i markedet  |
| reputation_2      | Vår BHT har et rykte for å levere tjenester som er svært gode sammenlignet med andre BHT selskaper                        |
| reputation_3      | Vår BHT er meget pålitelig  |
| punish_1          | Vår BHT vil oppleve et betydelig økonomisk tap dersom vi ikke leverer det vi har lovet                                    |
| punish_2          | Våre kunder vil svarteliste oss og ikke kjøpe våre tjenester dersom vi ikke leverer det vi har lovet                      |
| brandinvest_1     | Vår BHT bruker årlig et betydelig beløp på markedsføring av oss selv  |
| brandinvest_2     | Vår BHT har investert betydelige beløp i lokalsamfunnet de siste årene  |
| brandinvest_3     | Vår BHT bruker årlig et betydelig beløp for å bli synliggjort i markedet  |
| brandcred_1       | Vår BHT leverer hva vi lover  |
| brandcred_2       | Våre BHT tjenester oppfattes som troverdige   |
| brandcred_3       | Vår BHT har et merkenavn våre kunder stoler på  |
| Outsource_1a      | Egenordning: Vi forventer at vi kommer til å opprettholde vår nåværende BHT-avtale over lang tid kundeforhold til oss     |
| Outsource_1b      | Fellesordning: Vi forventer at våre kunder ønsker et langt  |
| Outsource_2       | Vi lager planer for å opprettholde et godt og langvarig kundeforhold  |
| Switch cst_1      | Det å utarbeide nye rutiner for å arbeide med en ny BHT vil ta mye tid og ressurser                                       |
| Switch cst_2      | Det å utarbeide effektive relasjoner med en ny BHT vil være en tidkrevende prosess  |
| Envir_Uncertai_1  | Det er meget vanskelig å forutsi hvor mange som tilbyr BHT tjenester i markedet   |
| Envir_Uncertai_2  | Konkurransen mellom BHT aktørene i det lokale markedet vi opererer i er meget hard  |
| Envir_Uncertai_3  | Det er mange markedsføringskriger i vår bransje   |
| Envir_Uncertai_4  | Priskrig er et kjennetegn i vår bransje   |
| Envir_Uncertai_5  | Våre konkurrenter er relativt svake   |
| Info cost_Saved_1 | Kundene vet hva de får fra vår BHT, noe som sparer dem tid brukt på å undersøke andre alternativer                        |
| Info cost_Saved_2 | Kundene vet at vår BHT er der også i fremtiden  |
| Info cost_Saved_3 | Vår BHT gir kundene hva de ønsker, noe som sparer dem for tid og energi i å forsøke å finne andre alternativer            |
| Mark_Turb_1       | Våre kunder er følsomme ovenfor pris  |
| Mark_Turb_2       | Vi opplever etterspørsel etter våre tjenester fra helt nye kunder som vi aldri har betjent tidligere                      |
| Mark_Turb_3       | Vi betjener mange av de samme kundene som vi gjorde tidligere   |
| Mark_Turb_4       | Våre kunder ser etter nye BHT tjenester hele tiden  |
| PA_1              | Våre kunder må anta at de mottar høy kvalitet på tjenestene fra vår BHT   |
| PA_2              | Det er meget tidkrevende for en kunde å kontrollere hvor godt hver enkelt av våre ansatte utfører sitt arbeid             |
| PA_3              | Det er meget vanskelig for en kunde å vurdere det riktige omfanget av tjenestene som vår BHT foreslår                     |
| PA_4              | Våre kunder vil aldri kunne vite hvor god kvaliteten på våre tjenester er før tjenestene er utført                        |
| PA_5              | Det finnes ikke tilstrekkelig standarder for å måle kvalitet før kjøp av BHT tjenester                                    |
| PA_6              | Våre kunder har vanskelig for å fastsette kvalitetsnivået de har behov for når de kjøper BHT tjenester                    |
| PA_7              | For den type BHT tjenester vår BHT leverer, kan kvaliteten på tjenestene kun observeres etter lang tids bruk              |

---

**Appendix 2 – Questionnaire**


---

Med egenordninger mener vi at man kun leverer BHT tjenester for en enkelt bedrift.

Med fellesordninger mener vi at man leverer BHT tjenester til flere ulike bedrifter

**2) \* BHT hos dere er**

- Fellesordning  
 Egenordning
- 

Følgende spørsmål måler betydningen av å ta en høyere pris i markedet enn hva som er vanlig

**4) \* Hvor enig eller uenig er du i følgende utsagn**

|   | Svært uenig<br>1      | 2                     | 3                     | 4                     | 5                     | 6                     | Svært enig<br>7       | Vet ikke              |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Våre kunder er villige til å betale en høyere pris enn hva som er normalt for liknende BHT tjenester                      | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Den prisen vi krever for BHT tjenester er betydelig høyere enn hva våre konkurrenter krever for tilsvarende BHT tjenester | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Vi har de høyeste prisene innenfor BHT tjenester sammenlignet med prisen generelt i markedet                              | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Vår BHT krever en pris som totalt sett er høyere enn normalt for tilsvarende BHT tjenester                                | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

---

Følgende spørsmål måler betydningen av kvalitet

**6) \* Hvor enig eller uenig er du i følgende utsagn**

|   | Svært uenig<br>1      | 2                     | 3                     | 4                     | 5                     | 6                     | Svært enig<br>7       | Vet ikke              |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Vår BHT mener at det å yte høy kvalitet er avgjørende for våre kunder                                   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Våre kunder vil pådra seg et betydelig tap dersom det viser seg at vi leverer tjenester av lav kvalitet | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Våre kunder forsikrer seg om at kvaliteten på våre tjenester er høy                                     | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Tjenestene som leveres av vår BHT har generelt sett høy kvalitet  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

---

Følgende spørsmål måler betydningen av å ha et godt rykte

**8) \* Hvor enig eller uenig er du i følgende utsagn**

|  | Svært uenig<br>1      | 2                     | 3                     | 4                     | 5                     | 6                     | Svært enig 7          | Vet ikke              |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Vår BHT har et svært godt rykte i markedet   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Vår BHT har et rykte for å levere tjenester som er svært gode sammenlignet med andre BHT selskaper | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Vår BHT er meget pålitelig   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Følgende spørsmål måler betydningen av kjøperens evne til å straffe selskapet ved å stoppe og kjøpe tjenestene

**10) \* Hvor enig eller uenig er du i følgende utsagn**

|  | Svært uenig<br>1      | 2                     | 3                     | 4                     | 5                     | 6                     | Svært enig 7          | Vet ikke              |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Vår BHT vil oppleve et betydelig økonomisk tap dersom vi ikke leverer det vi har lovet               | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Våre kunder vil svarteliste oss og ikke kjøpe våre tjenester dersom vi ikke leverer det vi har lovet | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Følgende spørsmål måler betydningen av merkevareinvesteringer

**12) \* Hvor enig eller uenig er du i følgende utsagn**

|  | Svært uenig<br>1      | 2                     | 3                     | 4                     | 5                     | 6                     | Svært enig 7          | Vet ikke              |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Vår BHT bruker årlig et betydelig beløp på markedsføring av oss selv     | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Vår BHT har investert betydelige beløp i lokalsamfunnet de siste årene   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Vår BHT bruker årlig et betydelig beløp for å bli synliggjort i markedet | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Følgende spørsmål måler betydningen av merkevarens troverdighet

**14) \* Hvor enig eller uenig er du i følgende utsagn**

|  | Svært uenig<br>1      | 2                     | 3                     | 4                     | 5                     | 6                     | Svært enig 7          | Vet ikke              |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Vår BHT leverer hva vi lover                   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Våre BHT tjenester oppfattes som troverdige    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Vår BHT har et merkenavn våre kunder stoler på | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

**Denne informasjonen vises kun i forhåndsvisningen**

Følgende kriterier må være oppfylt for at spørsmålet skal vises for respondenten:

- BHT hos dere er - Egenordning

På en skala fra 1 til 7, hvor 1 er svært uenig og 7 svært enig. Hvor enig eller uenig er du i følgende utsagn

**15) \* Vi forventer at vi kommer til å opprettholde vår nåværende BHT-avtale over lang tid**
 1  2  3  4  5  6  7  Vet ikke
**Denne informasjonen vises kun i forhåndsvisningen**

Følgende kriterier må være oppfylt for at spørsmålet skal vises for respondenten:

- BHT hos dere er - Fellesordning

På en skala fra 1 til 7, hvor 1 er svært uenig og 7 svært enig. Hvor enig eller uenig er du i følgende utsagn

**16) \* Vi forventer at våre kunder ønsker et langt kundeforhold til oss**
 1  2  3  4  5  6  7  Vet ikke

På en skala fra 1 til 7, hvor 1 er svært uenig og 7 svært enig. Hvor enig eller uenig er du i følgende utsagn

**17) \* Vi lager planer for å opprettholde et godt og langvarig kundeforhold**
 1  2  3  4  5  6  7  Vet ikke

Følgende spørsmål måler betydningen av å bytte BHT

**19) \* Hvor enig eller uenig er du i følgende utsagn**

|   | Svært uenig<br>1      | 2                     | 3                     | 4                     | 5                     | 6                     | Svært enig<br>7       | Vet ikke              |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Det å utarbeide nye rutiner for å arbeide med en ny BHT vil ta mye tid og ressurser | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Det å utarbeide effektive relasjoner med en ny BHT vil være en tidkrevende prosess  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Følgende spørsmål måler betydningen av usikkerhet i markedet

**21) \* Hvor enig eller uenig er du i følgende utsagn**

|  | Svært uenig<br>1      | 2                     | 3                     | 4                     | 5                     | 6                     | Svært enig<br>7       | Vet ikke              |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Det er meget vanskelig å forutsi hvor mange som tilbyr BHT tjenester i markedet    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Konkurransen mellom BHT aktørene i det lokale markedet vi opererer i er meget hard | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Det er mange markedsføringskriger i vår bransje                                    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Priskrig er et kjennetegn i vår bransje  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Våre konkurrenter er relativt svake  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Følgende spørsmål måler betydningen av sparte informasjonskostnader

**23) \* Hvor enig eller uenig er du i følgende utsagn**

|  | Svært uenig           |                       |                       |                       |                       |                       | Svært enig 7          | Vet ikke              |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
|  | 1                     | 2                     | 3                     | 4                     | 5                     | 6                     |                       |                       |
| Kundene vet hva de får fra vår BHT, noe som sparer dem tid brukt på å undersøke andre alternativer             | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Kundene vet at vår BHT er der også i fremtiden   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Vår BHT gir kundene hva de ønsker, noe som sparer dem for tid og energi i å forsøke å finne andre alternativer | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Følgende spørsmål måler betydningen av turbulens i markedet

**25) \* Hvor enig eller uenig er du i følgende utsagn**

|  | Svært uenig           |                       |                       |                       |                       |                       | Svært enig 7          | Vet ikke              |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
|  | 1                     | 2                     | 3                     | 4                     | 5                     | 6                     |                       |                       |
| Våre kunder er følsomme ovenfor pris   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Vi opplever etterspørsel etter våre tjenester fra helt nye kunder som vi aldri har betjent tidligere | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Vi betjener mange av de samme kundene som vi gjorde tidligere  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Våre kunder ser etter nye BHT tjenester hele tiden   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Følgende spørsmål måler betydningen av signalisere tjenester man tilbyr på en riktig måte

**27) \* Hvor enig eller uenig er du i følgende utsagn**

|   | Svært uenig           |                       |                       |                       |                       |                       | Svært enig 7          | Vet ikke              |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
|   | 1                     | 2                     | 3                     | 4                     | 5                     | 6                     |                       |                       |
| Våre kunder må anta at de mottar høy kvalitet på tjenestene fra vår BHT                                       | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Det er meget tidkrevende for en kunde å kontrollere hvor godt hver enkelt av våre ansatte utfører sitt arbeid | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Det er meget vanskelig for en kunde å vurdere det riktige omfanget av tjenestene som vår BHT foreslår         | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Våre kunder vil aldri kunne vite hvor god kvaliteten på våre tjenester er før tjenestene er utført            | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Det finnes ikke tilstrekkelig standarder for å måle kvalitet før kjøp av BHT tjenester                        | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Våre kunder har vanskelig for å fastsette kvalitetsnivået de har behov for når de kjøper BHT tjenester        | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| For den type BHT tjenester vår BHT leverer, kan kvaliteten på tjenestene kun observeres etter lang tids bruk  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

---

Avslutningsvis vil vi gjerne registrere noen bakgrunnsopplysninger

**29) \* Vi er en**

- Offentlig bedrift  
 Privat bedrift

---

Oppgi i hele tall. Eksempelvis 20

**30) Hvor mange årsverk har dere i deres BHT?****Denne informasjonen vises kun i forhåndsvisningen**

Følgende kriterier må være oppfylt for at spørsmålet skal vises for respondenten:

- BHT hos dere er - Fellesordning

---

Oppgi i hele tall. Eksempelvis 20

**31) Hvor mange bedrifter selger dere BHT tjenester til?**

---

Oppgi i hele tall. Eksempelvis 1994

**32) Årstall når BHT ble etablert?**

---

**33) Ønsker du å motta en gratis forskningsrapport om funnene fra undersøkelsen?**

- Ja  
 Nei
- 

*Appendix 3 – Cover letter***Masteroppgave om BHT markedet våren 2011**

Hei,

Vi er to masterstudenter fra Handelshøyskolen BI som i samarbeid med Fagsekretariatet for bedriftshelsetjenesten ved Statens arbeidsmiljøinstitutt (NIOH) ønsker å kartlegge hva som leder til konkurranseforskjeller innenfor bedriftshelsetjenestene i Norge, heretter kalt BHT. Denne undersøkelsen er i regi av et forskningsprosjekt, ledet av Ragnhild Silkoset, førsteamanuensis ved Handelshøyskolen BI. Fra Fagsekretariatet for bedriftshelsetjenesten samarbeider vi med Arve Lie og Odd Bjørnstad.

Formålet med denne undersøkelsen er å avdekke hvilke faktorer som påvirker



---

prissettingen i BHT markedet og hvilke BHT leverandører som er i stand til å ta en høyere pris i markedet enn hva som er vanlig og bakgrunnen for at dette forekommer. Denne undersøkelsen gjennomføres i forbindelse med avsluttende masteroppgave på Handelshøyskolen BI.

Ved å svare på dette spørreskjema bidrar du til å øke kvaliteten på studien. Som takk for at du fullfører undersøkelsen vil vi tilby deg og din bedrift en gratis rapport fra forskningen som beskriver funnene og implikasjonene. Resultatene fra rapporten kan være nyttig for videre utviklingsarbeid i deres BHT.

Svarene i undersøkelsen behandles anonymt og resultatene vil kun brukes i forskningsøyemed. Det finnes ingen riktige eller gale svar og vi er ute etter din personlige mening.

Skjemaet tar mellom 10 til 15 minutter å svare på.

For spørsmål om denne undersøkelsen ta kontakt med Joakim eller Simen på email: [joakim.lindberg@student.bi.no](mailto:joakim.lindberg@student.bi.no) eller [simen.f.k.h@student.bi.no](mailto:simen.f.k.h@student.bi.no).

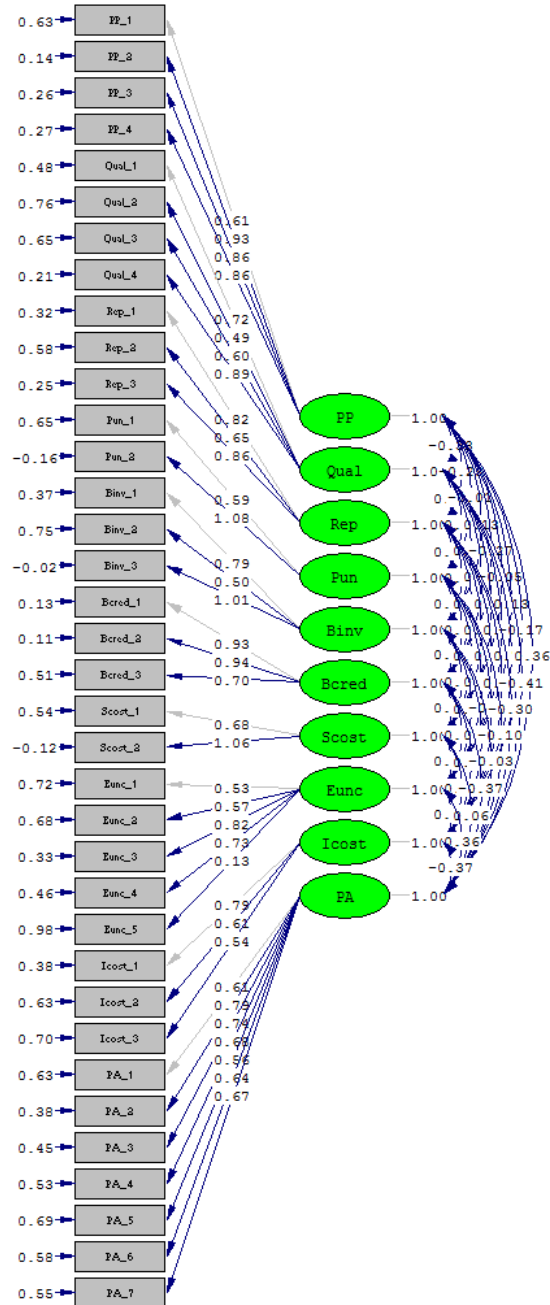
Med vennlig hilsen

Joakim Lindberg og Simen Karlsen  
Handelshøyskolen BI, i samarbeid med Fagsekretariatet for  
bedriftshelsetjenesten ved NIOH

**Appendix 4 – Response rate**

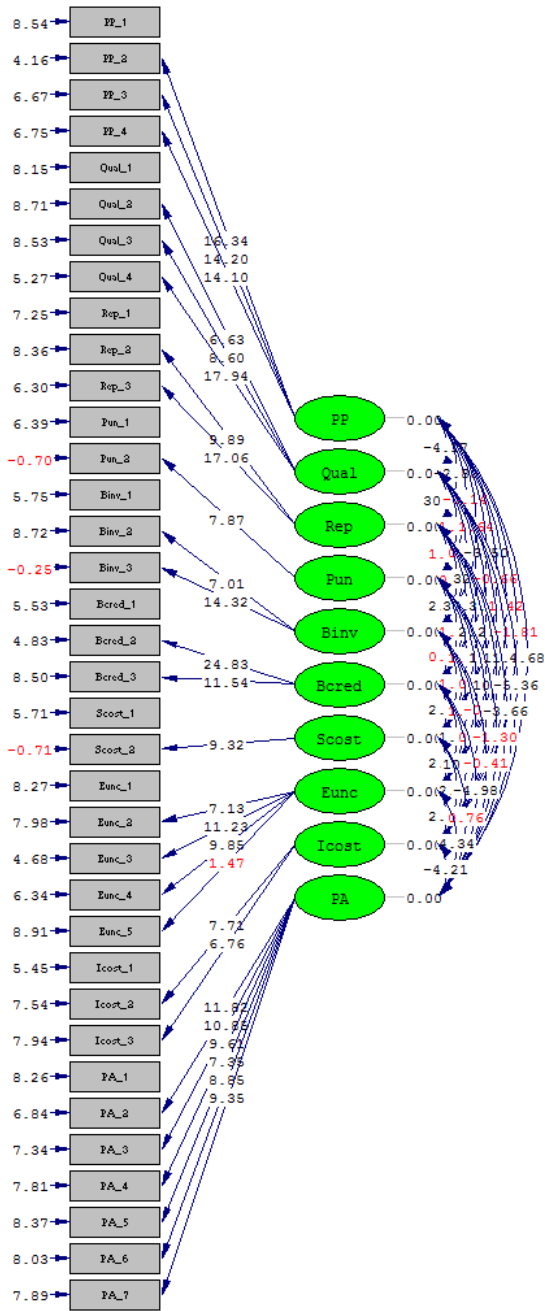
| Date                  | 05.05.2011 | 06.05.2011 | 07.05.2011 | 09.05.2011 | 10.05.2011 | 11.05.2011 | 12.05.2011 | 13.05.2011 | 16.05.2011 | 18.05.2011 | 19.05.2011 | Total |
|-----------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-------|
| Number of respondents | 59         | 16         | 2          | 18         | 4          | 37         | 11         | 6          | 3          | 4          | 1          | 161   |

**Appendix 5 – CFA Measurement model standardized regression coefficients**



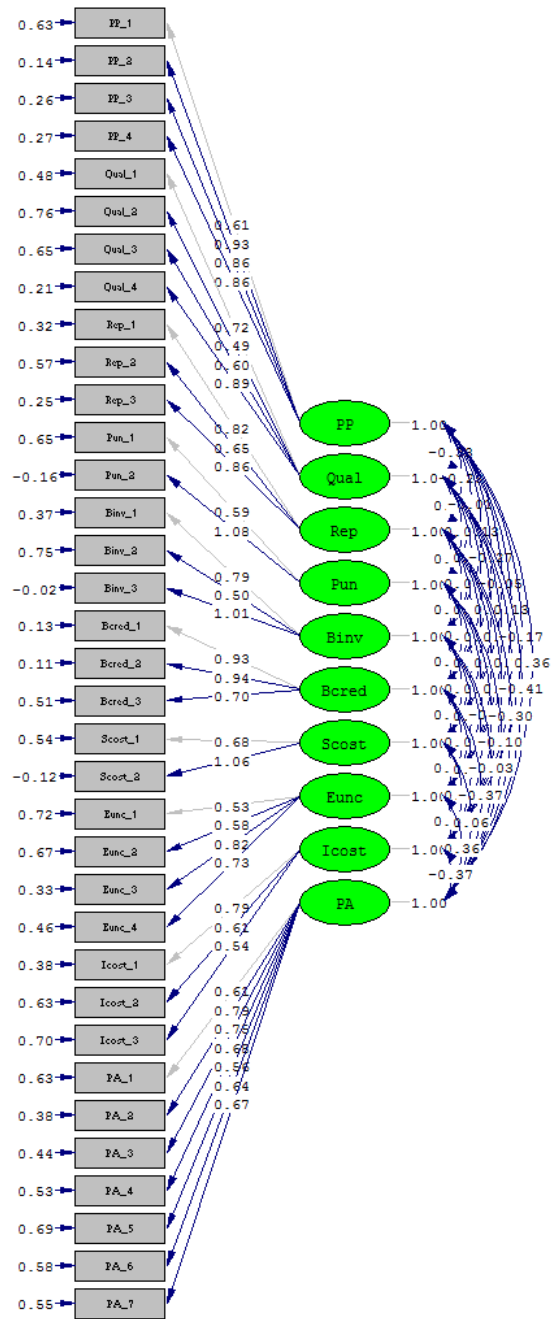
Chi-Square=789.75, df=559, P-value=0.00000, RMSEA=0.051

**Appendix 6 – CFA Measurement model t-values**



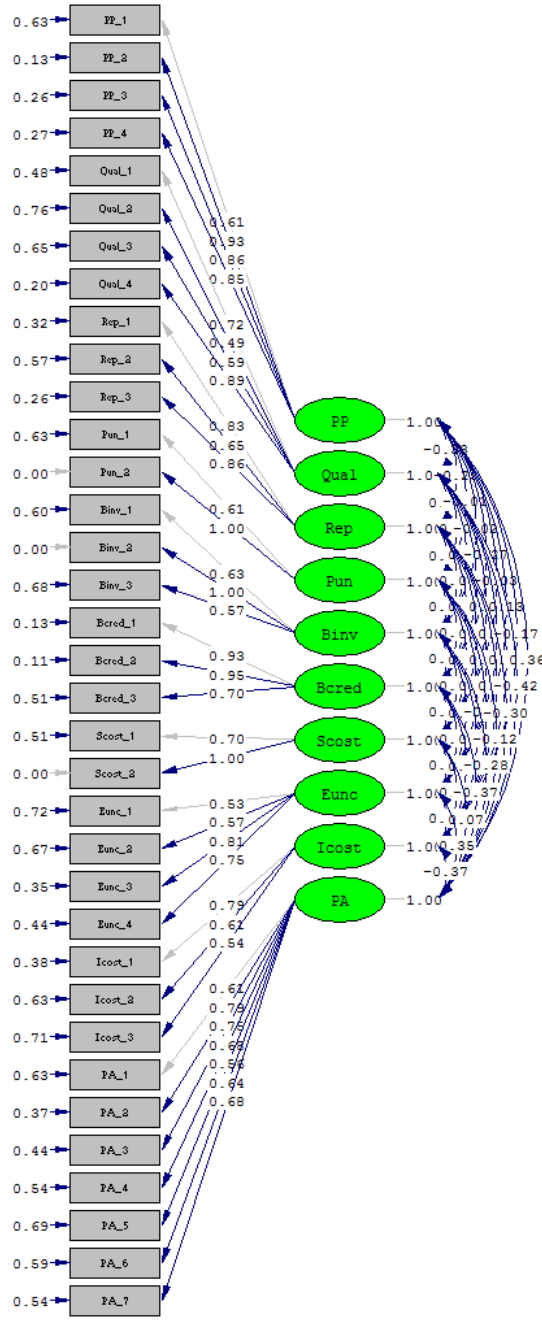
Chi-Square=789.75, df=559, P-value=0.00000, RMSEA=0.051

**Appendix 7 – CFA Improved Measurement model standardized regression coefficients**



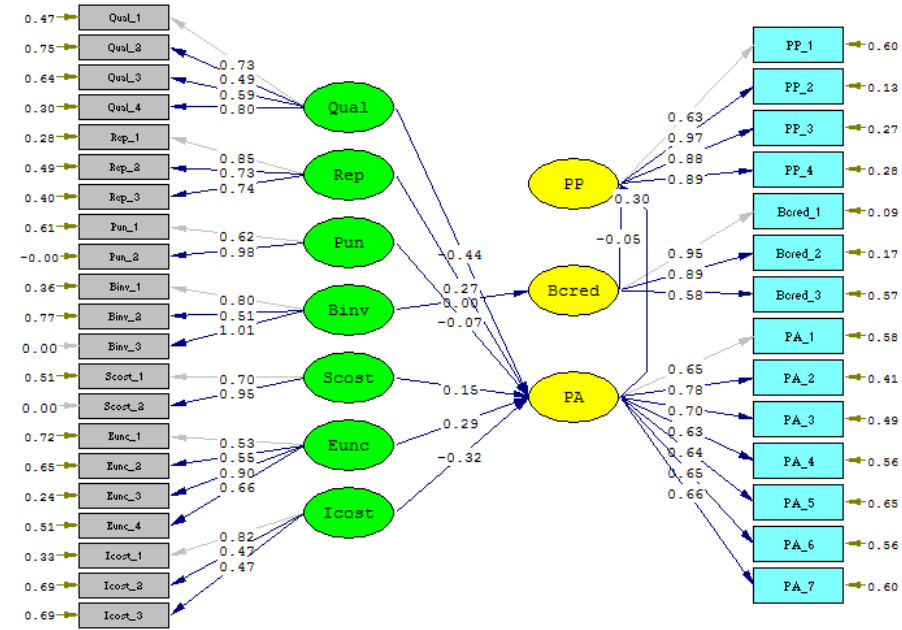
Chi-Square=737.77, df=525, P-value=0.00000, RMSEA=0.050

*Appendix 8 – Recoded Measurement model standardized regression coefficients*



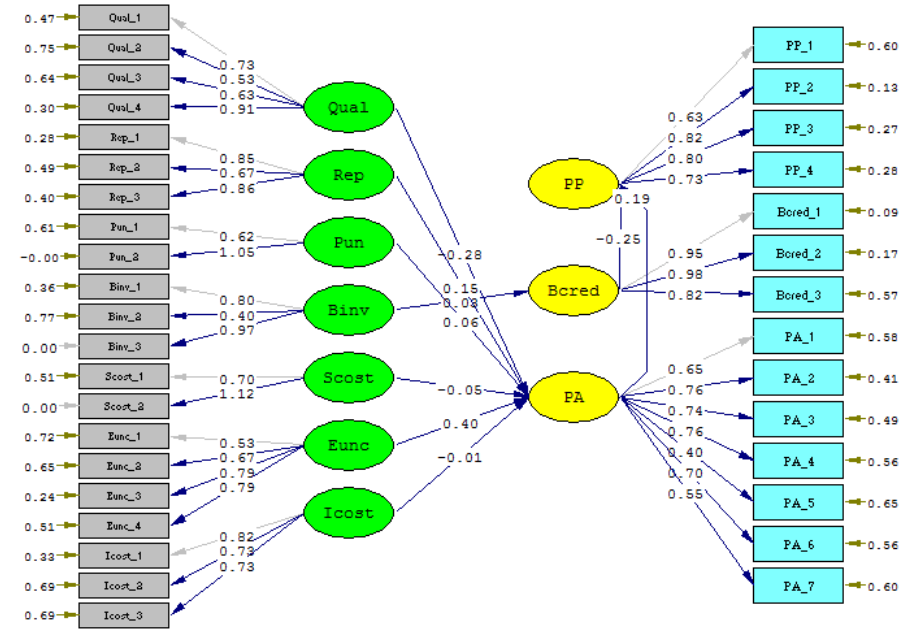
Chi-Square=821.21, df=528, P-value=0.00000, RMSEA=0.059

**Appendix 9 – SEM external OHS standardized regression coefficients**



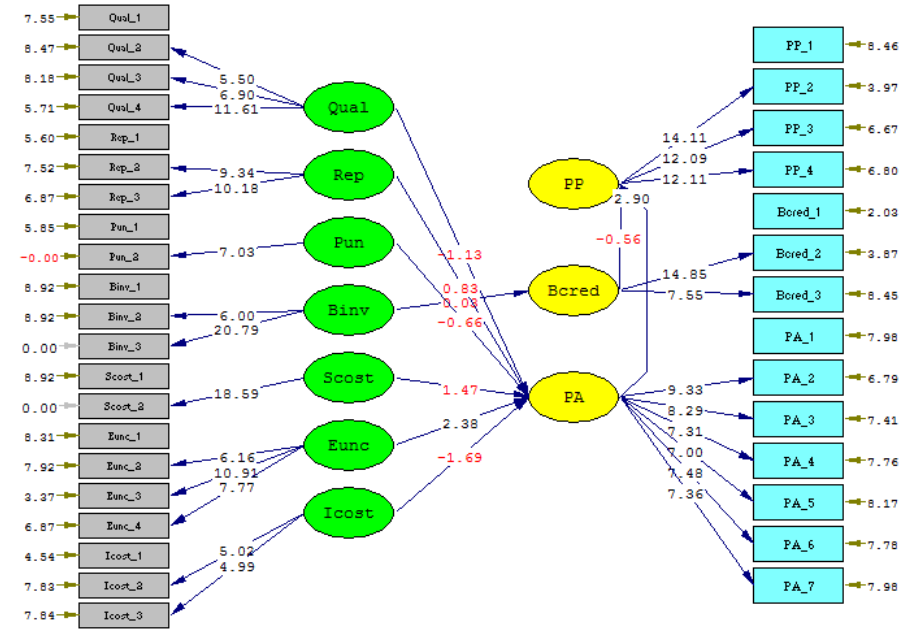
Chi-Square=1430.24, df=1138, P-value=0.00000, RMSEA=0.057

*Appendix 10 – SEM internal OHS standardized regression coefficients*



Chi-Square=1430.24, df=1138, P-value=0.00000, RMSEA=0.057

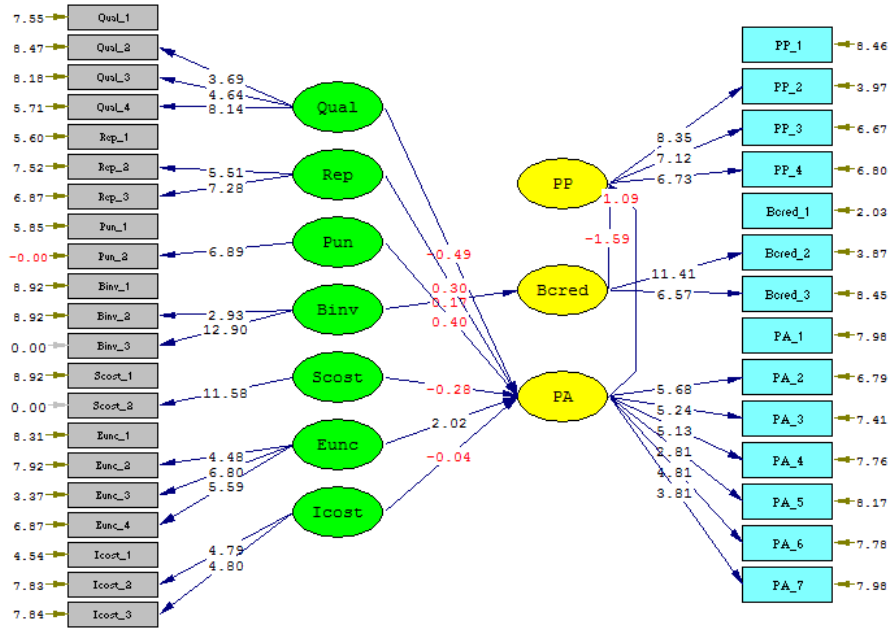
**Appendix 11 – SEM external OHS t-values**



Chi-Square=1430.24, df=1138, P-value=0.00000, RMSEA=0.057

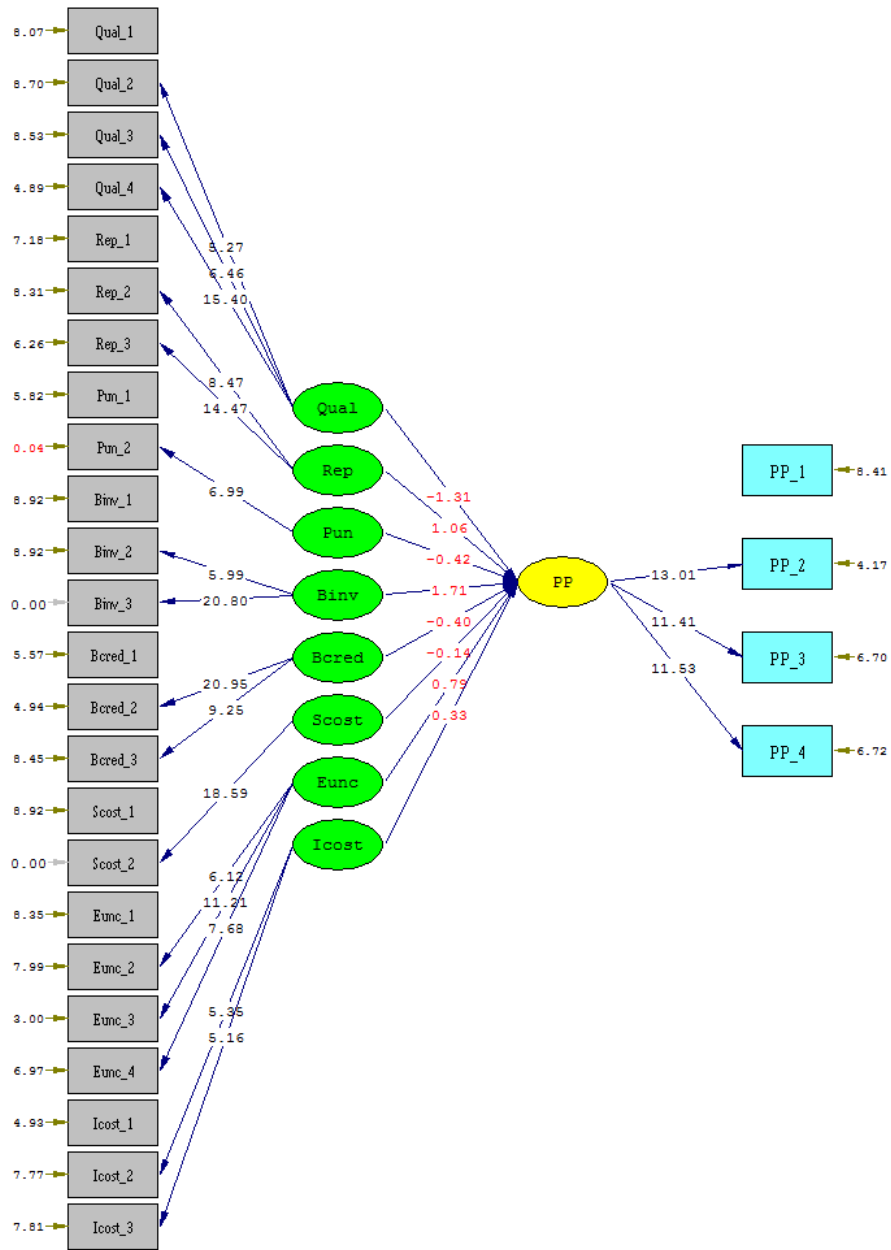


**Appendix 12 – SEM internal OHS t-values**



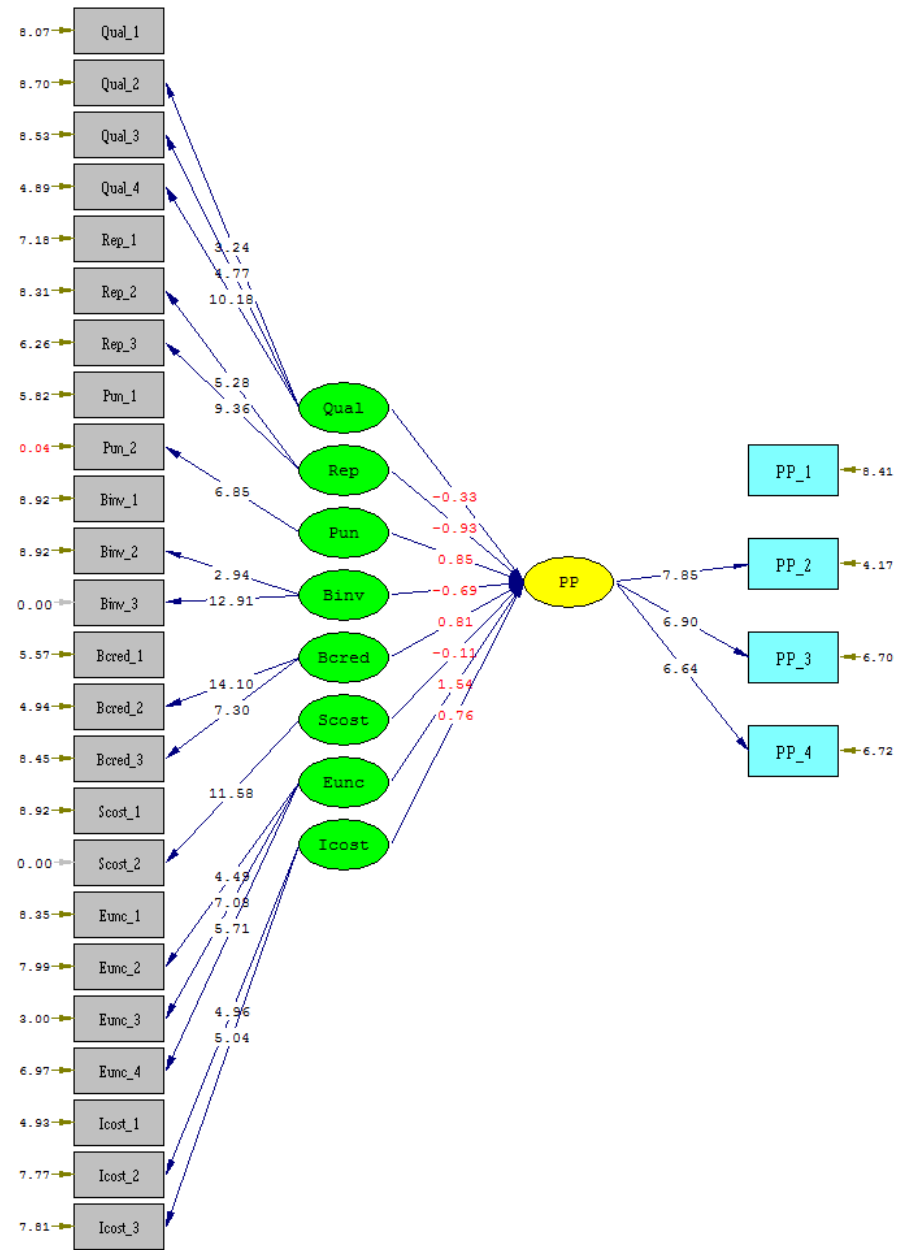
Chi-Square=1430.24, df=1138, P-value=0.00000, RMSEA=0.057

**Appendix 13 – SEM without Performance Ambiguity external OHS units t-values**



Chi-Square=964.40, df=704, P-value=0.00000, RMSEA=0.068

**Appendix 14 – SEM without Performance Ambiguity internal OHS units t-values**



Joakim Lindberg  
Simen Karlsen  
Supervisor: Ragnhild Silkoset

# Preliminary Thesis Report

## - Understanding the Effects of Price Premiums in the OHS Market and the Moderating Effect of OHS actors -

Hand-in date:  
07.02.2011

Campus:  
BI Oslo

Exam code and name:  
*GRA 19002 Preliminary Thesis Report*

Programme:  
Master of Science in Strategic Marketing Management

---

## Table of content

|  |           |
|--|-----------|
| <b>CHAPTER 1 BACKGROUND FOR THE STUDY.....</b>                         | <b>1</b>  |
| <b>CHAPTER 2 PROPERTIES OF THE OCCUPATIONAL HEALTH SERVICES MARKET</b> | <b>1</b>  |
| <b>CHAPTER 3 PROBLEM DEFINITION.....</b>                               | <b>3</b>  |
| 3.1 CONTRIBUTION .....   | 3         |
| 3.2 LIMITATIONS .....  | 3         |
| <b>CHAPTER 4 LITERATURE REVIEW .....</b>                               | <b>3</b>  |
| 4.1 DEPENDENT VARIABLE.....  | 4         |
| 4.2 THE MEDIATING ROLE OF WHOLLY OWNED AND INDEPENDENT OHS ACTORS..... | 5         |
| 4.3 INDEPENDENT VARIABLES WITH HYPOTHESES.....                         | 5         |
| 4.3.1 <i>Quality and Price premium</i> .....                           | 5         |
| 4.3.2 <i>Reputation and Price Premium</i> .....                        | 7         |
| 4.3.3 <i>Punishment and Price Premium</i> .....                        | 8         |
| 4.3.5 <i>Brand Investment and Price Premium</i> .....                  | 8         |
| <b>CHAPTER 5 RESEARCH MODEL.....</b>                                   | <b>10</b> |
| <b>CHAPTER 6 RESEARCH METHODOLOGY .....</b>                            | <b>10</b> |
| 6.1 DATA COLLECTION.....   | 11        |
| 6.2 PROCEDURE .....  | 11        |
| 6.3 PRETEST.....   | 12        |
| <b>CHAPTER 7 LIMITATIONS OF THE RESEARCH.....</b>                      | <b>13</b> |
| <b>APPENDICES.....</b>   | <b>14</b> |
| APPENDIX 1: PROGRESSION PLAN .....                                     | 14        |
| <b>REFERENCES.....</b>   | <b>15</b> |

## **Chapter 1 Background for the study**

The background for the study is the new law regulations that amended 1<sup>st</sup> of January 2010. This new regulations requires new branches of the Norwegian industry to offer Occupational Health Services (OHS) to their employees. The focus of the study is to investigate how OHS units gain price premiums, given these new conditions. Throughout the paper, we examine this phenomenon from the business-to-business market perspective. In the study, we address two types of OHS units, wholly owned and independent actors.

OHS units have traditionally had little attention on marketing of their services. Nevertheless, in the recent years, OHS units face the increased competition with larger private owned players entering the market. Therefore, we investigate which variables influences price premium. In result, we might discover how the OHS units adapt and respond to the competitive environment.

## **Chapter 2 Properties of the Occupational Health Services market**

The OHS market in the Norwegian setting undergoes vast changes, even though the market dates back to the 17th century (Lie 2009). The modern OHS supplier dates back to 1977, when the Work Environment Act passed through (Lie 2009). Norwegian work environment legislation, aligned with rules and regulations in the European Union make up the framework for the industry. The regulation states that 1) The employer is responsible for having an OHS in place and assessing the quality of the OHS personnel and 2) Describes the types of services enterprises should require of an OHS. In Norway, two ministries are involved; the Ministry of Labor and Social Inclusion and the Ministry of Health and Welfare (Meeting with NIOH, 23.06 2010).

Browsing the OHS market is an endearing task. The industry is multidisciplinary, meaning that some OHS units provide services to many enterprises. Both wholly owned and independent players make up the market. In an European context, Norwegian OHS companies are relatively small, with an average of four full time OHS professionals covering 2000 employees (Lie 2009). The OHS Registry, published by the National Institute of Occupational Health (NIOH), provides the closest estimate of number of players in the market. Now, around 410 OHS units

---

employ some 2500 professionals (NIOH 2010). It should be noted that the registry is voluntarily and therefore not completely accurate (Meeting with NIOH, 23.06 2010).

As mentioned, the Norwegian OHS industry focus little on marketing of their services, but focus on competing on prices. The reason for this might be that law regulates the industry. Lately, two trends have developed in the market; 1) OHS units merge, and as such larger players enters the market and 2) The OHS units and market as a whole moves towards commercialization. Hence, marketing and pricing structures becomes more important. As of recent, pricing structures moves towards a basic price and a price by the hour (Meeting with NIOH, 23.06 2010). These trends have led to an increase in competition in the market. In order to stay competitive OHS units change their organizational structure from non-profit organizations to public companies.

As of January 1<sup>st</sup> 2010, two new regulations were introduced. Firstly, the introduction of accreditation of providers of OHS, and secondly introduction of industry regulation for new sectors of the Norwegian market (Norwegian Labour Inspection Authority 2010). New sectors that require offering OHS services to their employees include amongst others education, health care, and hairdressers (Norwegian Labour Inspection Authority 2010).

Severe changes will occur in the marketplace due to these law amendments. International players and franchise units are likely to enter the market. These competitors with international background will be better at communicating the value of their services, and as such contribute to increased competition for existing OHS units. OHS units operating in the market now fear this competition. Traditionally, OHS units have not considered competition as a major threat. Therefore, they are likely to oppose these changes. The OHS units have not conveyed their added value to their customers. They have focused on price, and presenting it as the lowest possible cost for buyers. As such, the focus has only been on price and not on quality. In addition, the new law amendment poses some serious threats. Firstly, it forces buyers to select an OHS provider, which prohibits competition. Secondly, the lack of a competitive mechanism is likely to make OHS focus less on innovation and on operating efficiently.

### **Chapter 3 Problem definition**

Our problem definition stems from the fact that the industry, as mentioned, recently have gone through legal amendments. The study will focus on how this change in legal structure will affect the market. The financial crisis is strengthening the effects of price strategies. Hence, companies push their margins to the maximum. Therefore, we propose the following research question:

*“Given the new law regulations, which factors in the OHS market contribute to some firms receiving price premiums in an increasingly competitive market?”*

#### **3.1 Contribution**

This study will contribute by examining the effects of new legal amendments in the OHS market. We postulate that these legal changes will alter how companies can gain price premiums. Moreover, we argue that in order to face competition from the international arena, OHS units must focus on other aspects than price. Until recently, price has been the common denominator for competing in the market, reducing the incentive to compete. International competitors on the other hand have vast experience on creating value and signaling quality. By examining price premium, this paper can help OHS units reflect on how to compete in the market.

#### **3.2 Limitations**

Limitations will be defined when we have a more complete and thorough picture of the subject.

### **Chapter 4 Literature Review**

The purpose of the literature review is to develop a research model, hence the chapter begins with reviewing theories that has an impact on our model. We will first look at the dependent variable, price premium, before examining the independent variables respectively. Each of the independent variables will have a related hypothesis that we will address in the final paper.



#### ***4.1 Dependent variable***

We examine why some actors in the OHS market charge higher prices for their services compared to their competitors. Aligned with this frame of mind we base our study on the dependent variable price premium. Rao and Monroe (1996) define price premium as “*the difference between the super-high price and the perfectly competitive price for high-quality output*”. In essence, focus on quality will increase revenue and lead to higher profits (Babakus, Beinstock, and Van Scotter 2004). Furthermore, Klein and Leffler (1981) argue that the high prices accrue to sellers in the form of above-average profits. Price premiums differ from premium prices. Premium prices are considerably above average reflecting the higher cost of producing high quality, but may not necessarily provide profits to sellers (Rao and Bergen 1992).

A main rationale for price premium is that of information asymmetry (Rao and Bergen 1992). Information asymmetry stems upon the notion that not all buyers possess all information about the quality of the services provided (Akerlof 1970). This imply that the supplier have more information about the object of an exchange compared to the buyer (Mishra, Heide, and Cort 1998, 277).

Given the new law regulations in the OHS market, more companies must select an OHS provider. Therefore, information asymmetry can occur in the selected marketplace between buyer and seller. The situation where a seller possesses more information than the buyer can result in opportunistic behavior. When such situations arise, two problems exist: adverse selection and moral hazard. In terms of adverse selection, suppliers do not possess the skills required to provide certain quality levels (Mishra, Heide, and Cort 1998). There might be instances where OHS customers cannot identify whether an OHS unit provides sufficient quality or not.

Moral hazard occurs when suppliers easily influence the level of quality provided for each transaction (Mishra, Heide, and Cort 1998). In addition, moral hazard arises because suppliers have to ability and motivation to reduce the quality. The motivation for an OHS unit to cheat occurs because companies searching for an OHS unit do not necessarily have sufficient information. Therefore, companies pay a price premium to reduce the risk of cheating.

Linked with information asymmetry theory, is the theory of information economics. Nelson (1970) developed a framework for how difficult it is to evaluate services based on their properties. He classifies “search” services as types where quality can be determined prior to purchase. In “experience” services, quality can only be determined after purchase and usage (Darby and Karni 1973). Darby and Karni (1973) added a third category to Nelson’s framework: “credence” qualities. It refers to services where quality is not necessarily possible to evaluate even after purchase and consumption. This is due to the high required level of knowledge to understand what the service does. Since OHS units offer services that are hard to evaluate, they classify as credence services. Because of this, an incentive for OHS units is to cheat by offering unnecessary services for an extra fee.

#### ***4.2 The mediating role of wholly owned and independent OHS actors***

The purpose of this study is to examine the underlying reason for why some actors in the OHS market can charge price premium. In order to fully understand and explain the differences, we distinguish between wholly owned and independent OHS actors, using this as a mediating variable. In that manner, we test why and how such effects occur based on the independent variables (Baron and Kenny 1986). We believe that there exist moderating differences between wholly owned and independent actors that will provide us with more insight. Further, these differences can be important to investigate in order to enhance learning.

Wholly owned actors do not serve other companies than its owner. This is more common for large enterprises such as Aker Kværner Subseas AS, as they can achieve economies of scale. Independent OHS actors on the other hand characterizes as entities serving several companies at the same time. Aleris AS stands as an example of an independent actor.

#### ***4.3 Independent variables with hypotheses***

##### ***4.3.1 Quality and Price premium***

According to Zeithaml (1988, 3) quality is defined as “*superiority or excellence*”. A more general definition are proposed from American Society for Quality (2010)

---

which define quality as “*the characteristics of a product or service that bear on its ability to satisfy stated or implied needs*”. With other words, quality is an essential aspect for customers making a choice. Quality is therefore also important for actors to stay competitive, sustain over time and differentiate themselves from competition. In the market of health services, quality is of vital importance. Especially after the change of the law regulations, enabling OHS companies to compete against each other in an open market (Norwegian Labour Inspection Authority 2010). Hence, competition moves to the open market with immense opportunities. As a result, quality will be an important factor for companies deciding on their choice of an OHS unit.

Since a typical OHS unit consists of several positions such as nurses, ergonomists and physicians (Lie 2009), quality evaluation can be different depending on the interactions in the treatment process. Therefore, it might be hard to evaluate the overall quality of an OHS unit. In addition, quality in respect of OHS may be hard to evaluate after treatment because it is a credence service (Darby and Karni 1973).

Moreover, perceived quality is also a major factor in regards of choosing OHS units, because service quality forms by prior experiences. Hence, it refers to the customer’s judgment of the superiority or excellence. Keller (2003, 238) defines perceived service quality as “*the customers perception of the overall quality or advantage of a service relative to relevant alternatives and with respect to its intended purpose*”. If OHS units deliver quality below the expectations from the customers point of view, this could result in lower expectations and satisfaction, thus reducing price premium. Although, this is only true if the customer have the possibility to evaluate all of the different OHS units in the marketplace. Hence, identify those who provide high quality and those who provide inferior quality, which is not always possible (Akerlof 1970). Finally, charging a higher price correlates with higher perceived quality as it enable a company to receive price premiums. Hence, customers tend to perceive higher price with higher quality (Keller 2003). Therefore, we propose the following:

*H1a: Given wholly owned OHS: The higher perceived quality, the greater likelihood to obtain a price premium*

---

*H1b: Given independent OHS: The higher perceived quality, the greater likelihood to obtain a price premium*

#### *4.3.2 Reputation and Price Premium*

As mentioned in terms of information asymmetry, buyers do not have sufficient information about OHS alternatives in the marketplace. Reputation might be one way for buyers to overcome this problem (Herbig and Milewicz 1993). Herbig and Milewicz (1993) define reputation as “*the estimation of the consistency over time of an attribute of an entity*”.

Due to lack of information, potential buyers use reputation as a tool to evaluate the overall quality of OHS units. However, reputation might also come with a bag of hurt. On one side, reputation might be valuable if handled correctly, but it may also be fragile. Once destroyed, it takes hard work to rebuild a reputation. It is important that OHS units use reputation as a part of their strategy only if the reward outpaces the costs, as rebuilding a reputation can be a costly process (Herbig and Milewicz 1993).

In addition, reputation occurs primarily through market signaling, meaning “*an action that the parties can take to reveal their true types*” (Herbig and Milewicz 1993; Kirmani and Rao 2000). In essence, market signaling helps identify procedures unknown for the buyers because the motives of a potential seller can be unknown or hidden. In the OHS market, this can be a problem, when the buyer does not have sufficient information about OHS alternatives. This is one of the problems with asymmetric information (Akerlof 1970). Hence, market signaling might increase reputation and prevent opportunistic behavior, since its purpose is to reduce uncertainty and information asymmetry. Therefore, we propose the following:

*H2a: Given wholly owned OHS: The higher degree of reputation, the greater likelihood to obtain a price premium*

*H2b: Given independent OHS: The higher degree of reputation, the greater likelihood to obtain a price premium*

#### *4.3.3 Punishment and Price Premium*

Punishment follows the notion that OHS units will have an incentive to cheat, by providing poor quality. This can occur if the buyers do not have the opportunity or ability to punish the seller. If sellers can cheat the customer, they are likely to earn above-average profits by charging a price premium. The ultimate punishment an OHS unit can receive is that the buyer stops purchasing their services. Obviously if buyers punish the seller, they will lose all future profits (Rao and Bergen 1992). Recent trends in the OHS market show that buyers change their OHS units more frequently (Meeting NIOH 2010, 23.06 2010). This could be due to such cheating. Because we deal with a credence service, evaluating cheating is a problem. As such, punishment is an important variable in the OHS market. Given that the buyer cannot punish the seller, there is a clear incentive of obtaining price premiums in the marketplace. Rao and Bergen (1992) argue that buyers reward honest sellers with price premiums and punish dishonest sellers by denying them future sales. Therefore, we propose the following:

*H3a: Given wholly owned OHS: The higher level of price premiums increases to the degree which buyers do not punish cheating*

*H3b: Given independent OHS: The higher level of price premiums increases to the degree which buyers do not punish cheating*

#### *4.3.5 Brand Investment and Price Premium*

When other factors such as reputation and quality are lacking or hard to evaluate, branding can serve as a promise to the customer (Erdem and Swait 1998). This is based upon the notion that the brand will convey and confirm the seller as the responsible body in a given transaction. The American Marketing Association defines brand as a “*name, term, design, symbol, or any other feature that identifies one seller's good or service as distinct from those of other sellers*” (American Marketing Association 2010).

In the OHS industry today, the tendencies of merging companies can effectively create bigger organization with stronger corporate brands. This will make it harder for smaller brands to compete in the market (Meeting with NIOH 2010, 23.06 2010). In addition, it is likely that companies will use more money on brand

---

investments, to set themselves apart in a more competitive market. OHS units with strong brands also have less incentive to cheat the customer as it would effectively damage brand equity, reputation, and ultimately put future profits at risk (Rao and Monroe 1996). The more the company has spent on brand investments, the more risk the company face by cheating the buyer. As a result, companies will use brand investments such as advertising to convey their name, making it easier for buyers to select in the market and keep a promise of quality. Evidently, a strong brand reduces the risk for the buyers and makes selection easier, which could lead to price premiums (Keller 2008, 7). The effect of brand investment should be that the branded companies gain a price premium (Erdem and Swait 1998). The notion follows that enhancing the brand informs consumers about the presence of price premiums; as such it will be accepted by the purchaser (Klein and Leffler 1981). Therefore, we propose the following:

*H4a1: Given wholly owned OHS: The higher the degree of brand investment, the greater likelihood to obtain a price premium*

*H4a2: Given independent OHS: The higher the degree of brand investment, the greater likelihood to obtain a price premium*

Brand Investments can also lead to credibility. Erdem and Swait (2002) define brand credibility as “*the believability of the product information contained in a brand, which requires that consumers perceive that the brand have the ability (i.e., expertise) and willingness (i.e., trustworthiness) to continuously deliver what has been promised*”. Furthermore, Erdem and Swait (1998) argue that brand credibility is an important choice criterion for buyers. Increasing brand investments will likely increase brand credibility, and as such make it easier for customers to choose even though price premiums exist in the market. Therefore, we propose the following:

*H4b1: Given wholly owned OHS: The higher the degree of brand credibility, the greater likelihood to obtain a price premium*

*H4b2: Given independent OHS: The higher the degree of brand credibility, the greater likelihood to obtain a price premium*

## Chapter 5 Research Model

Based on our literature review, we propose the following research model, consisting of price premium as dependent variable and quality, reputation, punishment and brand investment as independent variables. We want to capture which variables that allows some OHS units to receive price premium in the market and others not. In order to examine this, we distinguish between wholly owned and independent OHS units as a mediating variable.



Model 1: Conceptual model

## Chapter 6 Research Methodology

We have already conducted an interview with Trygve Lie and Odd Bjørnstad at the National Institute of Occupational Health. The information gained in this interview, forms as a basis when selecting our variables. The research context for our study is OHS units. We will both capture wholly owned and independent OHS units, and therefore provide a more nuanced view of the market, that again will strengthen the validity of our research.

This industry captures the essence of what we want to study. First, the reason for choosing suppliers of OHS in our study is the fact that we will gain valuable information from industry experts, which complement the academic literature in a prosperous manner. Second, OHS industry has traditionally had little focus on marketing their services, instead focusing on price competition due to law

---

regulations. Therefore, it is of great interest to analyze how OHS units adapt to the new law regulations. Finally, OHS units' organizational structure changes from non-profit organizations to public companies in order to stay competitive. Hence, we study which factors in the OHS market that have an impact on receiving price premium in the market.

We believe that studying this sector will give suitable data to the research model. When analyzing the OHS market, the goal is to discover how one can actively manage pricing strategy within a business-to-business market, in a period of economic recession. Companies reduce the cost, and OHS services are one of the areas where this might occur.

### ***6.1 Data collection***

The OHS Registry forms the basis of our survey sample. Consisting of some 410 business units, the registry should provide us with an acceptable sample size. As this registry is maintained by NIOH, we believe that the likelihood of a good response rate increases. The registry will also provide us with contact details to key informants employed in the different OHS units. Ahead of the data collection, our supervisor will attend a conference, announcing the survey. Hopefully, this marketing will contribute to a higher response rate. Surveys often get a higher response rate, when a pre-notification and a university are involved in the study (Fox, Crask, and Kim 1988). Because of these factors, it makes us even more convinced that the rate will be acceptable.

We want to make a sample randomization of the OHS registry, both within the wholly owned and independent OHS units in order to hinder biased estimates. Moreover, we also randomize the sample to ensure that the variables do not correlate with the error term or between the independent variables. This will ensure higher internal validity of our data (Pedhazur and Schmelkin 1991, 222-223).

### ***6.2 Procedure***

We will collect data by distributing a digital questionnaire to the key informants e-mail addresses. The questionnaire will be composed in an online survey tool using



Questback or Confirmat to both minimize response error and facilitate data analysis. The reasons for using a digital questionnaire are its advantages such as low cost and easy distribution across a vast geographical distance.

In order to ensure the credibility of the study, we will include both the logo of The Norwegian School of Management and the logo of the National Institute of National Health, in the cover letter. In addition, contact details are included, so respondents can contact us if they have any questions or comments. We will also include two automated reminders, in order to ensure that we collect as many answers as possible. This is done in order to avoid a low respondent percentage that often poses problems when dealing with digital surveys. The reminders will be sent out the first and second week after the survey has been launched.

Thereafter, we will use statistical tools such as SPSS/JMP and LISREL to analyze and interpret the data.

### ***6.3 Pretest***

There will be conducted a quantitative pretest of our survey in order to ensure that the operationalization of variables are valid and understandable for the respondents. We test this on a small sample taken from the OHS registry, quality assured by NIOH representatives. In addition, by performing a pretest we ensure that we obtain reliable measures regarding the statistics. Lastly, we make sure that the respondents understand our questionnaire before we send out the final version.

## **Chapter 7 Limitations of the research**

This study has a number of limitations. Firstly, the research data will be collected from a voluntarily based registry, which means that we will only get respondents that themselves have actively shown interest in the registry. This could harm the randomization of our research resulting in biased estimates. Secondly, the registry only includes around 400 OHS units. Depending on the respondent rate there is a threat that our sample will be small, making it harder to obtain valid results from our statistical analysis. Thirdly, we will only get in touch with one respondent from each OHS unit. This could be problematic as the user may give biased estimates when responding on behalf of the unit. It could for instance occur when we ask about the quality of services provided. With such questions, it is likely that the respondents will give “correct” answers, and not act completely objective. Fourthly, the length of the questionnaire might present itself as a limitation. It should be neither too short nor too long. Lastly, the digital questionnaires require simple questions and a simple setup to be comprehensive for the respondents. This might harm the “deepness” of knowledge obtained from the data.

**Appendices***Appendix 1: Progression plan*

| <b>Month</b> | <b>Task</b>  |
|--------------|--|
| February     | Recieve feedback on preliminary. Correct preliminary       |
| March        | Develop questions for questionnaire and operationalization |
| April        | Carry through survey, and collect data                     |
| May          | Interpretation and analysis of data                        |
| June         | Interpretation and analysis of data                        |
| July         | Interpretation and analysis of data.                       |
| August       | Write results and corrections                              |
| September    | Hand in 1st of september                                   |

---

**References**

- Akerlof, George A. 1970. The Market for "Lemons": Quality Uncertainty and the Market Mechanism. *The Quarterly Journal of Economics* 84 (3):488-500.
- American Marketing Association. *Dictionary* 2010 [cited 14.01. Available from [http://www.marketingpower.com/\\_layouts/Dictionary.aspx?dLetter=B](http://www.marketingpower.com/_layouts/Dictionary.aspx?dLetter=B).
- American Society for Quality. *ASQ: Learn about Quality* 2010 [cited 05.08. Available from <http://asq.org/glossary/q.html>.
- Babakus, Emin, Carol C. Beinstock, and James R. Van Scotter. 2004. Linking Perceived Quality and Customer Satisfaction to Store Traffic and Revenue Growth. *Decision Sciences* 35 (4):713-737.
- Baron, M Reuben, and David A. Kenny. 1986. The Moderator-Mediator Variable Distinction in Social Psychological Research: Conceptual, Strategic, and Statistical Considerations. *Journal of Personality and Social Psychology* 51 (6):1173-1182.
- Bendapudi, Neeli, and Leonard L. Berry. 1997. Customers' motivations for maintaining relationships with service providers. *Journal of Retailing* 73 (1):15-37.
- Biong, Harald, and Fred Selnes. 1997. The Strategic Role of the Salesperson in Established Buyer-Seller Relationships. *Journal of Business-to-Business Marketing* 3 (3):39 - 78.
- Bowen, David E., and Gareth R. Jones. 1986. Transaction Cost Analysis of Service Organization-Customer Exchange. *The Academy of Management Review* 11 (2):428-441.
- Bunn, Michele D., Gul T. Butaney, and Nicole P. Hoffman. 2001. An Empirical Model of Professional Buyers' Search Effort. *Journal of Business-to-Business Marketing* 8 (4):55 - 84.
- Campbell, Donald T. 1955. The Informant in Quantitative Research. *The American Journal of Sociology* 60 (4):339-342.
- Chakravarthy, Bala. 1997. A New Strategy Framework for Coping with Turbulence. *Sloan Management Review* 38 (2):69-82.
- Darby, Michael R., and Edi Karni. 1973. FREE COMPETITION AND THE OPTIMAL AMOUNT OF FRAUD. *Journal of Law & Economics* 16 (1):67-88.
- David, Robert J., and Shin-Kap Han. 2004. A systematic assessment of the empirical support for transaction cost economics. *Strategic Management Journal* 25 (1):39-58.
- Diamantopoulos, Adamantios, and Judy A. Siguaw. 2000. *Introducing LISREL: a guide for the Uninitiated*. London: Sage publications.
- Downey, H. Kirk, and John W. Slocum. 1975. Uncertainty: Measures, Research, and Sources of Variation. *Academy of Management Journal* 18 (3):562-578.
- Duncan, Robert B. 1972. Characteristics of Organizational Environments and Perceived Environmental Uncertainty. *Administrative Science Quarterly* 17 (3):313-327.
- Ellsberg, Daniel. 1961. Risk, Ambiguity, and the Savage Axioms. *The Quarterly Journal of Economics* 75 (4):643-669.
- Erdem, Tülin, and Joffre Swait. 1998. Brand Equity as a Signaling Phenomenon. *Journal of Consumer Psychology (Lawrence Erlbaum Associates)* 7 (2):131.
- Erdem, Tülin, and Joffre Swait. 2004. Brand Credibility, Brand Consideration, and Choice. *The Journal of Consumer Research* 31 (1):191-198.

- 
- Erdem, Tülin, Joffre Swait, and Jordan Louviere. 2002. The impact of brand credibility on consumer price sensitivity. *International Journal of Research in Marketing* 19 (1):1-19.
- Fox, Richard J., Melvin R. Crask, and Jonghoon Kim. 1988. Mail Survey Response Rate. *Public Opinion Quarterly* 52 (4):467-491.
- Frankfort-Nachmias, Chava, and David Nachmias. 2008. *Research methods in the social sciences*. New York: Worth Publishers.
- Galetzka, Mirjam, Joost W. M. Verhoeven, and Ad Th H. Pruyn. 2006. Service validity and service reliability of search, experience and credence services: A scenario study. *International Journal of Service Industry Management* 17 (3/4):271-283.
- George, Darren, and Paul Mallery. 2009. *SPSS for Windows step by step: a simple guide and reference, 16.0 update*. Boston, Mass.: Pearson.
- George, Darren, and Paul Mallery. 2011. *SPSS for Windows step by step: a simple guide and reference 18.0 update*. Boston: Allyn & Bacon.
- Geyskens, Inge, Jan-Benedict E. M. Steenkamp, and Nirmalya Kumar. 2006. MAKE, BUY, OR ALLY: A TRANSACTION COST THEORY META-ANALYSIS. *Academy of Management Journal* 49 (3):519-543.
- Ghauri, Pervez N., and Kjell Grønhaug. 2002. *Research methods in business studies: a practical guide*. Harlow: Financial Times Prentice Hall.
- Gifford, William E., H. Randolph Bobbitt, and John W. Slocum, Jr. 1979. Message Characteristics and Perceptions of Uncertainty by Organizational Decision Makers. *The Academy of Management Journal* 22 (3):458-481.
- Grant, Robert M. 2010. *Contemporary strategy analysis*. Chichester: Wiley.
- Greenley, Gordon E. 1995. FORMS OF MARKET ORIENTATION IN UK COMPANIES. *Journal of Management Studies* 32 (1):47-66.
- Gripsrud, Geir, Ulf Henning Olsson, and Ragnhild Silkoset. 2004. *Metode og dataanalyse: med fokus på beslutninger i bedrifter*. Kristiansand: Høyskoleforl.
- Hair, Joseph F., William C. Black, Barry J. Babin, and Rolph E. Anderson. 2010. *Multivariate data analysis: a global perspective*. Upper Saddle River, N.J.: Pearson.
- Hair, Joseph F., William C. Black, Barry J. Babin, Rolph E. Anderson, and Ronald L. Tatham. 2006. *Multivariate data analysis*. Upper Saddle River, N.J.: Prentice Hall.
- Heide, Jan B., and Allen M. Weiss. 1995. Vendor Consideration and Switching Behavior for Buyers in High-Technology Markets. *The Journal of Marketing* 59 (3):30-43.
- Herbig, Paul, and John Milewicz. 1993. The Relationship of Reputation and Credibility to Brand Success. *Journal of Consumer Marketing* 10 (3):18-24.
- Hinterhuber, Andreas. 2004. Towards value-based pricing--An integrative framework for decision making. *Industrial Marketing Management* 33 (8):765-778.
- Holmstrom, Bengt. 1979. Moral hazard and observability. *Bell Journal of Economics* 10 (1):74-91.
- Hsieh, Yi-Ching, Hung-Chang Chiu, and Mei-Yi Chiang. 2005. Maintaining a committed online customer: A study across search-experience-credence products. *Journal of Retailing* 81 (1):75-82.
- Hult, G. Tomas M., Robert F. Hurley, and Gary A. Knight. 2004. Innovativeness: Its antecedents and impact on business performance. *Industrial Marketing Management* 33 (5):429-438.
-

- 
- Husted, Bryan W. 2007. Agency, Information, and the Structure of Moral Problems in Business. *Organization Studies* 28 (2):177-195.
- Hutton, James G. 1997. A study of brand equity in an organizational-buying context. *Journal of Product & Brand Management* 6 (6):428.
- Janssens, Wim, Katrien Wijnen, Patrick De Pelsmacker, and Patrick Van Kenhove. 2008. *Marketing research with SPSS*. Harlow: Prentice Hall/Financial Times.
- Jaworski, Bernard J., and Ajay K. Kohli. 1993. Market Orientation: Antecedents and Consequences. *The Journal of Marketing* 57 (3):53-70.
- Jöreskog, Karl G., and Dag Sörbom. 1993. *LISREL 8: structural equation modeling with the SIMPLIS command language*. Hillsdale, N.J.: Scientific Software International.
- Keller, Kevin Lane. 2003. *Strategic brand management: building, measuring, and managing brand equity*. Upper Saddle River, N.J.: Prentice Hall.
- Keller, Kevin Lane. 2008. *Strategic brand management: building, measuring, and managing brand equity*. Upper Saddle River, N.J.: Pearson/Prentice Hall.
- Keller, Kevin Lane, and Donald R. Lehmann. 2003. How Do Brands Create Value? *Marketing Management* 12 (3):26-31.
- Kirman, Amna, and Akshay R. Rao. 2000. No Pain, No Gain: A Critical Review of the Literature on Signaling Unobservable Product Quality. *Journal of Marketing* 64 (2):66-79.
- Klein, Benjamin, and Keith B. Leffler. 1981. The Role of Market Forces in Assuring Contractual Performance. *The Journal of Political Economy* 89 (4):615-641.
- Klein, Saul. 1989. A Transaction Cost Explanation of Vertical Control in International Markets. *Journal of the Academy of Marketing Science* 17 (3):253-260.
- Kohli, Ajay K., and Bernard J. Jaworski. 1990. Market Orientation: The Construct, Research Propositions, and Managerial Implications. *The Journal of Marketing* 54 (2):1-18.
- Lie, Arve. 2009. A new development for occupational health services in Norway. *SJWEH Suppl* 7:48-52.
- Lützkendorf, Thomas, and Thorsten M. Speer. 2005. Alleviating asymmetric information in property markets: building performance and product quality as signals for consumers. *Building Research & Information* 33 (2):182-195.
- Malhotra, Naresh. 1996. The impact of the academy of marketing science on marketing scholarship: An analysis of the research published in JAMS. *Journal of the Academy of Marketing Science* 24 (4):291-298.
- Malhotra, Naresh K. 2010. *Marketing research: an applied orientation*. Boston: Pearson.
- Miller, Danny. 1987. The structural and environmental correlates of business strategy. *Strategic Management Journal* 8 (1):55-76.
- Milliken, Frances J. 1987. Three Types of Perceived Uncertainty about the Environment: State, Effect, and Response Uncertainty. *The Academy of Management Review* 12 (1):133-143.
- Mishra, Debi Prasad, Jan B. Heide, and Stanton G. Cort. 1998. Information Asymmetry and Levels of Agency Relationships. *Journal of Marketing Research (JMR)* 35 (3):277-295.
- Mitchell, Vincent-Wayne. 1995. Organizational Risk Perception and Reduction: A Literature Review. *British Journal of Management* 6 (2):115-133.

- 
- Monroe, Kent B. 2003. *Pricing: making profitable decisions*. Boston: McGraw-Hill/Irwin.
- Morris, Michael H., Ramon A. Avila, and Leyland F. Pitt. 1996. PRICING UNDER CONDITIONS OF ENVIRONMENTAL TURBULENCE: A CONCEPTUAL AND EMPIRICAL ASSESSMENT. *Journal of Marketing Management (10711988)* 6 (2):1-16.
- Nelson, Phillip. 1970. Information and Consumer Behavior. *The Journal of Political Economy* 78 (2):311-329.
- NIOH. *Generell Oversikt* 2010 [cited 2.12. Available from <http://apps.didac.no/bht/rappporter/general.asp>.
- Norwegian Labour Inspection Authority. *Faktaside: Ny ordning for bedriftshelsetjeneste fra 2010* 2010 [cited 06.12.2010. Available from <http://www.arbeidstilsynet.no/fakta.html?tid=102478>.
- Ostrom, Amy, and Dawn Iacobucci. 1995. Consumer Trade-Offs and the Evaluation of Services. *The Journal of Marketing* 59 (1):17-28.
- Pedhazur, Elazar J., and Liora Pedhazur Schmelkin. 1991. *Measurement, design, and analysis: an integrated approach*. Hillsdale, N.J.: Lawrence Erlbaum Associates.
- Perreault, William D., Joseph P. Cannon, and E. Jerome McCarthy. 2010. *Basic marketing: a marketing strategy planning approach*. Boston: McGraw-Hill/Irwin.
- Porter, M.E. 1996. *What is strategy?*: Harvard Business School Press.
- Rao, Akshay R. 1993. The Price of Quality. *Pricing Strategy and Practice* 1 (2):4-15.
- Rao, Akshay R., and Mark E. Bergen. 1992. Price Premium Variations as a Consequence of Buyers' Lack of Information. *The Journal of Consumer Research* 19 (3):412-423.
- Rao, Akshay R., Qu Lu, and Robert Ruekert. 1999. Signaling Unobservable Product Quality Through a Brand Ally. *Journal of Marketing Research (JMR)* 36 (2):258-268.
- Rao, Akshay R., and Kent B. Monroe. 1996. Causes and Consequences of Price Premiums. *The Journal of Business* 69 (4):511-535.
- Rindfleisch, Aric, and Jan B. Heide. 1997. Transaction Cost Analysis: Past, Present, and Future Applications. *The Journal of Marketing* 61 (4):30-54.
- Santos-Vijande, María Leticia, and Luis Ignacio Álvarez-González. 2007. Innovativeness and organizational innovation in total quality oriented firms: The moderating role of market turbulence. *Technovation* 27 (9):514-532.
- Saunders, Mark N. K., Philip Lewis, and Adrian Thornhill. 2009. *Research methods for business students*. Essex: Pearson Education.
- Shapiro, Carl. 1982. Consumer Information, Product Quality, and Seller Reputation. *The Bell Journal of Economics* 13 (1):20-35.
- Shapiro, Carl. 1983. Premiums for High Quality Products as Returns to Reputations. *The Quarterly Journal of Economics* 98 (4):659-680.
- Shostack, G. Lynn. 1987. Service Positioning through Structural Change. *The Journal of Marketing* 51 (1):34-43.
- Shugan, Steven M. 1980. The Cost of Thinking. *Journal of Consumer Research* 7 (2):99-111.
- Skaggs, Bruce C., and Charles C. Snow. 2004. The Strategic Signaling of Capabilities by Service Firms in Different Information Asymmetry Environments. *Strategic Organization* 2 (3):271-291.
-

- 
- Slater, Stanley F., and John C. Narver. 1994. Does Competitive Environment Moderate the Market Orientation-Performance Relationship? *The Journal of Marketing* 58 (1):46-55.
- Smith, Michael F., Indrajit Sinha, Richard Lancioni, and Howard Forman. 1999. Role of Market Turbulence in Shaping Pricing Strategy. *Industrial Marketing Management* 28 (6):637-649.
- Snow, Arthur. 2010. Ambiguity and the value of information. *Journal of Risk & Uncertainty* 40 (2):133-145.
- Solberg, Carl Arthur, Barbara Stöttinger, and Attila Yaprak. 2006. A Taxonomy of the Pricing Practices of Exporting Firms: Evidence from Austria, Norway, and the United States. *Journal of International Marketing* 14 (1):23-48.
- Spence, Michael. 1973. JOB MARKET SIGNALING. *Quarterly Journal of Economics* 87 (3):355-374.
- Spence, Michael. 2002. Signaling in Retrospect and the Informational Structure of Markets. *The American Economic Review* 92 (3):434-459.
- Stump, Rodney L., and Jan B. Heide. 1996. Controlling Supplier Opportunism in Industrial Relationships. *Journal of Marketing Research (JMR)* 33 (4):431-441.
- Suhr, Diana D. 2011. *Exploratory or Confirmatory Factor Analysis?* 2001 [cited 05.06.2011 2011]. Available from <http://www2.sas.com/proceedings/sugi31/200-31.pdf>.
- Tomassen, Sverre. 2004. The effects of transaction costs on the performance of foreign direct investments: an empirical investigation, Handelshøyskolen BI, Oslo.
- Urbany, Joel E., Peter R. Dickson, and Rosemary Kalapurakal. 1996. Price Search in the Retail Grocery Market. *The Journal of Marketing* 60 (2):91-104.
- Webb, John. 2000. Questionnaires and their Design. *Marketing Review* 1 (2):197.
- Wenstøp, Fred. 2003. *Statistikk og dataanalyse*. Oslo: Universitetsforl.
- Williamson, Oliver E. 1981. The Economics of Organization: The Transaction Cost Approach. *The American Journal of Sociology* 87 (3):548-577.
- Williamson, Oliver E. . 1975. *Markets and Hierarchies: Analysis and Antitrust Implications*: New York: Free Press.
- Zeithaml, Valarie A. 1988. Consumer Perceptions of Price, Quality, and Value: A Means-End Model and Synthesis of Evidence. *Journal of Marketing* 52 (3):2-22.