

# Preferential treatment from the defense industry for the military

Andreas Herbert Glas

*Chair for Materials Management and Distribution, Munich, Germany*

Received 20 September 2017  
Revised 6 November 2017  
Accepted 22 November 2017

## Abstract

**Purpose** – The military of today depends on the availability and readiness of high-technology weapon systems. As the military often has to focus on core tasks (the usage of systems), logistics and support tasks are outsourced to industry, which means that industrial suppliers gain importance for making weapon systems available and mission ready. However, companies are profit-maximizing and invest their best resources in the most promising business areas, which might be clients other than the (domestic) military customer. This raises the question of how the military can ensure that the defense industry provides the best performance: preferential treatment for the military. The purpose of this study is to investigate preferential treatment in the specific context of defense.

**Design/methodology/approach** – This paper reports on the examination of factors influencing preferential treatment for the military. The analysis uses structural equation modeling and data from a sample of German defense suppliers.

**Findings** – The results show that the perceived customer attractiveness has a strong effect on preferential customer treatment. Attractiveness is influenced by trust, commitment and a comparison with other customers.

**Research limitations/implications** – There are several implications for defense theory and practice, including the need for further consideration of relational in contrast to transactional practices in military–industrial supply collaboration, as these seem highly relevant for getting the best resources for producing and maintaining weapon systems. In addition, increasing customer attractiveness, in particular if the military lacks a domestic defense industry base, is proposed.

**Originality/value** – The findings are based on a focus sample of only defense suppliers. This paper transfers the industrial discussion about the buyer–supplier relationships and preferential customer treatment to the defense logistics research context.

**Keywords** Structural equation model, Defense industry, Preferred customer, Customer attractiveness

**Paper type** Research paper

## 1. Introduction

The cooperation between the military and defense industry suppliers has been a long-standing subject of economic research. The literature is focused on the “military-industrial complex” (Mills, 1956; Dunne, 1995) with the aim of enhancing efficiency by better understanding the interplay between the administration, the military and industry. In the early 1990s, economic analysis addressed “conversion,” which means the substitution of military production by civilian production, due to reduced military production and development budgets (Nironen, 1995). The most recent research on the interplay between the



---

military and the defense industry addresses the fact that many nations were forced to outsource tasks, hitherto performed by the military, to industrial (logistics) providers (Hartley, 2004; Tchokogué *et al.*, 2015). This literature often applies management concepts such as strategic alliance, service contracts or performance-based contracting to the defense context to improve the efficiency and effectiveness of the buyer–supplier relationship in defense (Bishop and Williams, 1997; Kapletia and Probert, 2010; Glas *et al.*, 2013).

In addition, there is an ongoing academic discussion about “customer attractiveness” and “preferential customer treatment” which has not yet been transferred to the defense context. That discussion addresses the issue that an increasing number of manufacturing and service firms rely on fewer suppliers and thus are becoming more closely involved with those remaining suppliers (Cannon and Perreault, 1999). If the supplier base is small, it is necessary to safeguard access to key suppliers and to secure tomorrow’s competitiveness, because it is not self-evident that a firm that collaborates with its suppliers will gain a competitive advantage through this collaboration. Other customer firms of that supplier might obtain better resources. A firm that is capable of obtaining better resources from the suppliers than its competitors has an advantage in resources and will therefore more easily attain a competitive advantage (Pulles *et al.*, 2016; Hüttinger *et al.*, 2012; Hunt and Davis, 2008). This is the underlying reason why recent research analyzed how to receive preferential customer treatment and which other concepts, e.g. customer attractiveness, play a role in receiving that treatment (Pulles *et al.*, 2016).

The outlined challenge of obtaining preferential treatment can also be found in the defense markets. In these markets, a small group of large supply companies have a dominating position, whereas a great number of small- and medium-sized suppliers are specialized in narrow segments and often function as subcontractors of the large companies. The ultimate customer, the military, depends on the manufacturing and logistics support capabilities of all these suppliers to get the most advanced technology and weapon systems. However, from the point of view of each supply company’s management, it is most important to decide in which business the company wants to stay and whether it has enough resources to realize the most attractive business strategy. Most defense suppliers not only supply to the domestic military but also export their products to other military customers. Many suppliers also address the civilian business-to-business or business-to-consumer market with their products. For example, the manufacturers of military airplanes often also produce passenger planes for civilian airlines. Therefore, each defense supply company is permanently challenged by the question of how to increase its business value – by focusing on the business with the domestic military, by arms export or by strengthening civilian business (Nironen, 1995).

The military should be aware that it is also perceived as a customer among other customers and that, industrial suppliers give special treatment to only “preferred customers.” Preferential treatment to a specific customer could take the form of delegation of the best engineers to a collaborative innovation project, the first offering of a new idea, a new product or preferential service in an allocation situation where capacity constraints in production impede the firm from serving all customers equally. Thus, preferential treatment by suppliers is strategic in nature (Hüttinger *et al.*, 2012). In times of rapid technological change, limited military research and development budgets and highly innovative companies in civilian markets (start-ups), preferential treatment for the military by industrial defense suppliers seems to be the key to future weapon system production and in-service logistics.

This paper transfers the ongoing academic discussion about customer attractiveness and preferential customer treatment to the buyer–supplier relationships in defense markets. It applies structural equation modeling to data from a focus sample of managers of German

defense suppliers. All respondents provided insights into their perceptions considering the attractiveness and the preferential treatment of the military.

This research contributes to the literature in several ways. First, the relevance of various constructs of preferential customer treatment is tested in the specific and focused setting of defense suppliers. Thus, this research focuses the analysis on the specific defense situation. Second, by showing the high effect of customer attractiveness to preferential customer treatment, this research introduces new thinking about defense procurement. The times of “the customer is always right” are gone, while defense acquisition management should be aware that the military depends on its supply base. Third, the analysis reveals further insights into the antecedents of and cause–effect relationships between suppliers’ trust, commitment and comparative customer perceptions regarding military customer attractiveness.

This paper is organized as follows. In the next section, the key roles of and customer alternatives to defense suppliers are presented. This is followed by the development of the hypotheses on the basis of previous research in procurement and supply management, on customer attractiveness and preferential customer treatment. Next, the research methodology is presented. Then, the research findings are discussed. This paper concludes by pointing out the theoretical and practical implications and limitations of the study and proposing issues for future research.

## 2. Research on the roles of and customer alternatives to defense suppliers

The strategic (customer) choices of defense suppliers have not been the core focus of research on the defense industry, even when the causes for increasing unit costs of weapon systems have been investigated in-depth (Kirkpatrick, 1995). This is surprising, as the defense industry consists of those industrial assets that provide the key elements of military power and national security (Hartley, 2007). This section briefly introduces the strategic roles of and customer alternatives to defense suppliers.

Defense suppliers generally act in a very specific market with several peculiarities (Dunne, 1995). The defense market is often regarded as economically strategic, characterized by monopoly/oligopoly structures, decreasing costs, R&D intensity and associated spinoffs (Hartley, 2007). Defense suppliers have to cope with limited or at least uncertain or volatile defense budgets together with costly technologies requiring substantial research and development efforts. This has led to a consolidation of many aspects of the market, e.g. creating giant defense supply firms in the USA and Western Europe (Mantin and Tishler, 2004; Dunne, 1995). Behind these “super defense suppliers” (namely, e.g. Lockheed Martin, Boeing, Northrop Grumman and Raytheon in the USA and BAE Systems, Thales and Airbus in Europe), are numerous smaller defense suppliers who deliver parts and components for the major systems or have specialized in niche products (Golde and Tishler, 2004).

Overall, previous research shows that defense suppliers choose a role and a customer segment that adjust to market developments and build on their comparative advantage while economizing on transaction costs and exploiting any economies of scope (Hartley, 2007). Two major strategic alternatives are observed: First, defense specialists supplying a range of air, land and sea systems, including defense electronics and the capacity to support these systems during their “in-service” life (e.g. via military outsourcing). BAE Systems, Lockheed Martin and Northrop Grumman are examples of such defense specialists, with arms accounting for over 75 per cent of their sales (Hartley, 2007).

Second, an alternative organization of defense suppliers can be found in companies specializing in military and civilian products. One reaction after the post-cold war to the reduction of defense budgets was to encourage companies in the development of “dual-use” technologies, which are intended to allow the defense suppliers to diversify into civilian markets and make them less dependent on defense procurement (Dunne, 1995). Boeing and EADS are examples of such product specialists in the aerospace sector, each with a substantial business in large civilian jet airliners, with defense accounting for under 50 per cent of their sales (Hartley, 2007).

From the perspective of the (domestic) military purchaser, it is important to ensure that defense suppliers regard domestic military projects and products as being of the highest priority, rather than the projects or products for foreign military or civilian customers. However, defense specialist suppliers also export arms, as the size of the domestic defense market is limited. Product specialists, on the other hand, need to balance the defense accounts against other civilian customers.

First, the export market, with its foreign military customers, is highly relevant to defense suppliers. Even if arms exports are frequently influenced by a variety of non-economic factors (e.g. arms embargos, allies/friends, regional conflicts and human rights concerns) (Levine *et al.*, 2000), the market size is promising for defense specialists. The Stockholm International Peace Research Institute (SIPRI, 2016) calculated overall military spending of US\$1.676bn in 2015, of which the sales volume of the 100 most important defense suppliers was US\$401bn. In comparison, the institute estimated the export market volume with a size of US\$94.5bn, which is approximately 25 per cent of the overall sales volume of the major weapon system providers (SIPRI, 2016).

Second, the need to balance military with civilian customer needs can be exemplified with the case of the A400M military transport aircraft. That transport aircraft showed numerous technical challenges during research, development and its current initial usage phase compared to the initial requirements. External consultants, who evaluated a couple of armament projects for the German ministry of defense, found that the supplier assigned personnel from the A400M project to a civilian aircraft project and this was one of the main causes of the severe project problems (KPMG *et al.*, 2014). The supplier switched priorities from the A400M project to the civilian aircraft A380, which also had some problems in the development phase. Approximately 1,000 employees, most of them specialized engineers, were tasked to solve the A380 problems first, instead of continuing work on the military A400M project. The supplier perceived that it was better to have trouble with the defense customer than with big civilian airliners, such as Lufthansa (Kurbjuweit *et al.*, 2015).

In summary, export or civilian customers might have a higher attractiveness than the domestic military customer might have. This can cause severe problems, which the A400M example of preferential customer treatment for civilian airliners illustrated. Thus, customer attractiveness and preferential customer treatment in the defense context need further analysis.

### **3. Customer attractiveness and preferential treatment in procurement research**

The phenomenon of customer attractiveness and preferential customer treatment is not new, as the understanding of needs and preferences of suppliers is important to develop supply management research and practices (Ramsay and Wagner, 2009). Research in the area of procurement and supply management recently addressed the issue with a new or extended focus on the concept for buyers (Bemelmans *et al.*, 2015; Kumar and Routroy, 2016). This will be outlined briefly in this section.

The starting point is sociology and social psychology research based on the social exchange theory, which found that human beings choose between alternative potential associates and courses of action by evaluating the experiences or expected experiences with each in terms of a preference ranking and then selecting the best alternative (Blau, 1964). Parties will enter into and maintain relationships with the expectation that doing so will be rewarding compared to other alternatives (Homans, 1958, Thibaut and Kelley, 1959, Blau, 1964). In this sense, attractiveness is the construct of how rewarding a counterpart perceives one party. Blau (1964) suggested that attraction depends on different dimensions.

Adapting these findings to a buyer–supplier context, it could be reasoned that buyers should become attractive to suppliers (Hüttinger, 2014). In contrast to other interpretations of customer attractiveness, e.g. from the perspective of the supplier and in the sense of customer (life-time) value or customer profitability (Makkonen *et al.*, 2016; Mulhern, 1999), the perspective is the buyer’s and the rationale is that being an attractive customer is likely to lead to more profitable relationships with suppliers (La Rocca *et al.*, 2012). It is noted, “a buyer must make it attractive for a supplier to do business with his or her firm” (Galt and Dale, 1991, p. 18). Being attractive means that the supplier expects higher performance in the relationship with that buyer (Christiansen and Maltz, 2002; Schiele *et al.*, 2011).

In that sense, the concept of customer attractiveness has gained relevance in research on purchasing, operations and supply management with an increase in the academic discussion (Hüttinger *et al.*, 2012). Being designated by a supplier as a “preferred” customer can enhance the development of relationships that are more efficient, and ultimately can produce various beneficial outcomes over time for both the customer and the supplier (La Rocca *et al.*, 2012). The other way round, failing to achieve preferred customer status could have the effect that the supplier would deliberately allocate its key strategic resources to other customers (Andersen *et al.*, 2016).

The literature on this connection between customer attractiveness and preferential treatment in a business-to-business setting analyzes a number of factors, which explain or influence this cause and effect (Pulles *et al.*, 2016; Bemelmans *et al.*, 2015; Ellis *et al.*, 2012). Hüttinger *et al.* (2012) collected a sample of more than 50 factors in six dimensions, which influence or constitute customer attractiveness, and 27 factors in four dimensions for the construct of preferential treatment.

Other work examines the topic from a theoretical perspective (Schiele *et al.*, 2015), and explores the topic with case studies (Makkonen *et al.*, 2016), while already some contributions are testing the effects (Ellis *et al.*, 2012; Hüttinger, 2014). That stock of knowledge is used to develop the hypotheses for the analysis of customer attractiveness and preferential customer treatment in defense.

#### 4. Hypothesis development

A higher degree of customer attractiveness might explain why certain customers are better able to obtain resources from a shared supply base (Schiele *et al.*, 2012). As already outlined in the introduction, the military of many countries face a supply base which becomes more and more international and not only addresses the domestic defense market but also serves export or civilian markets and customers. Therefore, the topic is increasingly of interest for defense. The analysis builds on previous works. Hüttinger (2014) already used structural equation modeling to explore the construct of preferential customer treatment with a number of factors: trust, commitment and comparative customer perceptions. Pulles *et al.* (2016) showed with a qualitative World Café method that customer attractiveness is an important factor and distinct from other influential factors, such as supplier satisfaction. Makkonen *et al.* (2016) focused on the effects of attractiveness. This study combines the

---

relevant factors of these models. Thus, in accordance with the extant literature, we expect that preferential customer treatment is influenced by the perceived customer attractiveness, which is influenced by commitment, trust and the comparison with other potential customers. This is indicated in the following hypothesis.

First, the perception of attractiveness always depends on the comparison with other (potential) alternatives, because actors simply compare one exchange relationship to (potential) others (Hüttinger, 2014). “Individuals will remain in a relationship only as long as the outcomes it yields are superior to those obtainable in their respective best alternative relationships” (Thibaut and Kelley, 1959, p. 64). As such, the construct of a comparative customer represents the outcome level of a customer (here domestic military) in comparison to other customer alternatives. It is expected that the construct of the comparative customer affects the perception of expectations of the supplier with the customer (customer attractiveness), as actors compare the outcomes of a given relationship to potential outcomes from alternatives to evaluate a relationship. This influences how attractive a customer is perceived.

*H1.* The perception of comparative customers positively affects customer attractiveness.

However, customer attractiveness is also dependent on previous experiences and developed latent constructs, such as commitment or trust. Both constructs are often analyzed in the context of customer attractiveness and preferential customer treatment and are mentioned as relevant antecedents (Hüttinger, 2014; Hüttinger, 2012; Ellegaard *et al.*, 2003). Commitment involves the willingness of individuals to work for the continuation of their relationships (Leik and Leik, 1977; Scanzoni, 1979). In this case, the supplier believes that the relationship with a customer is worth developing. Gundlach *et al.* (1995) indicated that commitment is an essential ingredient of successful long-term relationships. In this setting, it is assumed that commitment is of very high relevance, as the literature attests to strong relationships between the defense industry and the military (military–industrial complex). The high research and investment costs to build up industrial capabilities in defense might indicate a high level of commitment to the defense business. This might impact the perception of the customer’s attractiveness.

*H2.* The perception of commitment to the military customer positively affects customer attractiveness.

Trust is the next latent factor that is of high interest in the context of customer attractiveness and preferential customer treatment in defense. Armament projects often last for centuries, and therefore, suppliers must rely on their customer to behave and contract in a cooperative way. Trust is defined as the confidence that the exchange partner possesses honesty and benevolence (Kumar *et al.*, 1995; Ganesan, 1994). The first dimension of trust implies that an actor believes the partner will stand by his word. The second dimension of trust, benevolence, refers to one partner’s confidence that the other partner will not take unexpected actions with negative impacts on the firm (Doney and Cannon, 1997). Nyaga *et al.* (2010) and Hüttinger (2014) already showed a positive connection between trust and commitment. In addition, positive relationships between trust and buyer–supplier cooperation have been hypothesized theoretically (Williams, 2001), and supported empirically (Morgan and Hunt, 1994). Garbarino and Johnson (1999) found a positive relationship between trust and future behavioral intentions. This indicates that trust should also have a positive effect on customer attractiveness.

H3. The perception of trust in the military customer positively affects customer attractiveness.

A key assumption for the next hypothesis is that an actor who is attracted to its partner is interested in proving itself attractive for that partner (Blau, 1964). In other words, customer attraction can create a situation in which the supplier makes voluntary efforts to be attractive itself in the eye of the buyer (Aminoff and Tanskanen, 2013). In this way, customer attractiveness can help buying firms obtain better resources because the extent to which suppliers perceive a buying firm as attractive might induce these suppliers to allocate resources to that relationship (Ellegaard *et al.*, 2003). Thus, customer attractiveness can help buying firms obtain better supplier resources. The military depends on getting primary access to superior know-how and technology from the suppliers. This is the basis for superior armament and battlefield advantage. This is why it is of high interest that, even in the defense sector, business customer attractiveness affects preferential treatment.

H4. Customer attractiveness positively affects preferential customer treatment.

Figure 1 illustrates the research framework and model of this study. The model itself is embedded in a specific context environment with a survey setting that will be outlined in detail later in this paper. The situation refers to defense–supply relationships in Germany and thus is homogenous referring to the wider environmental situation, e.g. the political, security, budgetary and military status of affairs. All survey data refer to the relationship of a German defense supplier with its domestic military customer within that specific environment. The research model then depicts how the outlined hypotheses are connected. Briefly, the supplier’s commitment, the trust in the relationship and the comparison with other customers influence the perception of the customer’s attractiveness. This might result in preferential customer treatment for the military.

### 5. Methods

To test the hypotheses, survey data have been collected with a questionnaire addressed to managers of German defense supply companies in 2017. Before conducting the survey, pretests were performed. In the first pretest, nine researchers from the author’s university faculty received the questionnaire, and responded to it while checking for comprehensibility,

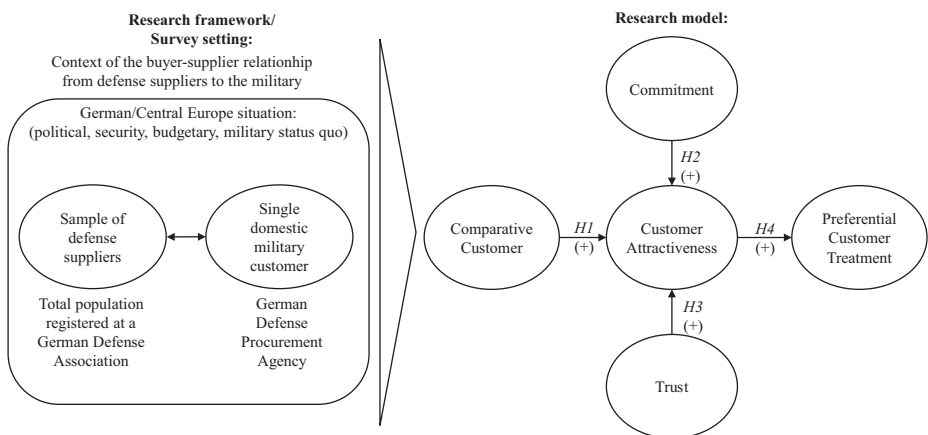


Figure 1.  
Research model  
(without control  
variables and  
indicators)

---

structure and length. After revisions to the questionnaire, the survey was further tested with practitioners by means of an online questionnaire in 2016. A total of 66 respondents answered the pretest and provided data, which were used to further check the duration and the construct comprehensibility.

The final survey ([Appendix 1](#)) was conducted online from January to March 2017 using the platform of Unipark software. After the initial e-mail invitation, two reminders were sent out: one after four weeks and the second, three weeks later. After another three weeks, the survey was closed.

The recipients of the survey were selected in a sampling procedure. The sampling procedure followed the process and the filter requirements of a purposeful sampling method ([Patton, 1990](#)), which aims to pick a (small) homogenous group concerned with the same phenomenon. Because this study analyzes latent perceptions of defense suppliers about their relation to the defense customer, it was important to consider informants with appropriate knowledge about the topic within a homogenous setting. The selection of informants was dictated by two key imperatives:

- (1) an individual's familiarity with the defense market and expert knowledge with the domestic defense customer; and
- (2) the individual's ability to report accurately and comprehensively on perceived latent constructs.

Given these requirements, the survey targeted respondents, who had expert insights into the business and relationship of their company with the (domestic) defense customer. The expert status is identified through their role as key account managers for defense in their company. The German defense industry association (Deutsche Gesellschaft für Wehrtechnik e.V.) has contacts to 270 defense supplier companies. Each company is registered with a personal contact, who is usually also the responsible manager for the defense business of that company. The role title of these persons differ, e.g. bigger defense suppliers in corporate group structures even have board members for defense, whereas smaller defense suppliers title their key accounts as "defense sales manager" or simply as "product manager." However, all of these persons are key account contact persons for the company to the defense customer and therefore, are able to provide information about perceived latent constructs in that specific relationship. Consequently, this survey addressed the 270 contacts of the German defense industry association as key informants.

The sample was selected by purpose, but with several constraints, which should be reflected considering the requirement of sample homogeneity. First, all respondents work for defense supplier companies located in Germany. This enhances sample homogeneity because at least the wider business environment is the same (legal, political and military setting). This is of importance, as all German defense suppliers face the same budget development of their domestic customer, which dropped significantly in the 1990s and 2000s but is increasing since 2015. This ensures that business expectations about the domestic military customer are homogenous for the sample. In addition, using this constraint improved research efficiency, as all communication with the respondents (and the questionnaire) could be conducted in one language (German). Second, the sample had the constraint to allow industry heterogeneity but customer homogeneity. In other words, the defense supplier industry is heterogeneous referring to the technological specialization. The sample comprises specialized companies that manufacture small arms, tanks, warships, fighter jets, IT or other military equipment. It can be argued that this is in contrast to the requirement of sample homogeneity. However, only informants who address the defense supplier market and rank it at least to a certain extent as important for their company are



included in the sample. Therefore, the sample is highly homogenous as all respondents are from one defense industry and face the same domestic defense customer. The German defense procurement agency (called Bundesamt für Ausrüstung, Informationstechnik und Nutzung der Bundeswehr) is the central interface between the German military and defense suppliers. It is organized in dimensions (air, land and sea) and projects (specific weapon systems) with around 11,000 employees, but the workflow in that agency follows highly standardized procurement processes (BAAINBw, 2016). Overall, the chosen sample (key account contact persons listed in the German defense industry association) and focus (German suppliers addressing the same defense customer) seem to be suitable for the purpose of this study.

The sample size of 270 should comprise all relevant defense supplier companies in Germany, e.g. in the Federation of German Industry, only 220 companies are listed as defense supplier firms. Therefore, the used contact list of the German defense industry association comprises 50 more contacts than the list of the Federation of German Industry and promises to reflect a comprehensive sample of defense suppliers in Germany near to the totality population of potential defense supplier companies.

In course of the survey execution, a total of 148 respondents participated in the survey. A total of 42 questionnaires, which were invalid due to a high number of missing values or other issues, have been omitted from the evaluation. Next, three questionnaires have been excluded as sample questions about industry branch and core products revealed that these respondents did not fit the narrow focus on defense suppliers. Finally, ten questionnaires with more than five missing values in the analyzed constructs have been excluded (list wise deletion). After that step, responses with only few or single missing values were completed using the median replacement method to avoid further reductions to sample size (Kline, 2011; Hair *et al.*, 2017). Only 17 out of 1,860 used values in the analysis were substituted with median imputation (0.0091 per cent). The final sample comprised 93 questionnaires, which allows for the calculation of a response rate of 34.4 per cent. The response rate of this survey is in line with the range of average response rates per journal in operations and supply management literature (e.g. 31.0 per cent *Journal of Purchasing and Supply Management*; 35.45 per cent *Journal of Operations Management*) (Melnyk *et al.*, 2012). However, it is assumed that the respondents as members of the German defense association are willing to support the initiatives of that association and that there was a positive motivation to participate in the survey.

The sample was analyzed with regard to non-response bias using the approach introduced by Armstrong and Overton (1977); the goal was to test whether the initial assumption – namely, that relational perceptions are not dependent on the time of response – could be verified. Two groups were created according to the return date of the questionnaires. Insights from the pretest indicated that there should not be any differences in the responses between early and late respondents. A parameter-free, two-tailed Mann–Whitney *U*-test revealed no significant differences at the 5 per cent level for most variables. Only four items differed from responses to the statements from early respondents (ComC2, CompC3, Trust2 and Attract1). A comparison of means of early and late respondents, an investigation of the raw data and a search for outliers, however, did not reveal an indication of a structural bias problem.

Table I shows descriptive statistics. Personnel characteristics of the respondents were gender, position in the company and previous military career. The majority of respondents were male (88.2 per cent), which is not surprising as there is generally only a very small number of women in management positions in Germany (Holst and Wiemer, 2010).

Variable	N	(%)
<i>Gender of respondent</i>		
Male	82	88.2
Female	3	3.2
No response on gender	8	8.6
$\sum (n)$	93	100.0
<i>Company position of respondent</i>		
Board member/CEO	23	24.7
Business unit/division/department head	35	37.6
Manager	19	20.4
Sales or product manager	7	7.5
n.a.	9	9.7
$\sum (n)$	93	100.0
<i>Previous military career</i>		
Officer (incl. reserve)	51	54.8
Subordinate/conscript military service	19	20.4
No military service	13	14.0
n.a.	10	10.8
$\sum (n)$	93	100.0
<i>Company size</i>		
Small-/Medium-size	46	49.5
Large enterprise	47	50.5
$\sum (n)$	93	100.0
<i>Technology focus of the company (several answers possible)</i>		
Logistics/Systems Support Services	60	19.3
Electronics and IT	43	13.8
Aerospace	28	9.0
Simulation and consultancy	27	8.7
Communication	22	7.1
Armored vehicles	19	6.1
Protection systems	12	3.9
Light – non-armored – vehicles	11	3.5
Personnel equipment and small arms weapons	10	3.2
Navy systems	8	2.6
Other categories (10)	71	22.8
$\sum (n)$	311	100.0
<i>Defense market relevance for company</i>		
Key market	46	49.5
Very important	28	30.1
Important	12	12.9
Less important	7	7.5
Not important at all	0	0.0
$\sum (n)$	93	100.0

**Table I.**  
Sample description

The sample is almost split into two halves by company size. Based on the European Union's definition of small- or medium-sized enterprises (SMEs) (<250 employees, <50 million Euro turnover, European Commission (EC), 2006), 49.5 per cent of the sample are SMEs, whereas 50.5 per cent are large enterprises. This also reflects the prevalence of SMEs in Germany. Also, the defense industry in Germany is characterized by a high share of SMEs. Most respondents were male (88.2 per cent), which can be explained by the small number of

women in management positions within the defense industry and in Germany in general (Holst and Wiemer, 2010).

Referring to the company position, all respondents act as key account contact for the (domestic) defense customer. Dependent on the organization and size of their company, their position is at least on the business unit level or in the board (62.3 per cent) or below on a manager or sales/product manager level (27.9 per cent) with 9.7 per cent no responses to that particular question.

In Germany, a military career is often bound to a time-contract (usually around 12-13 years of service time) and only 20-40 per cent of each age group stay in the Armed Forces. On the other hand, 60-80 per cent have their career outside the military. Many soldiers see career opportunities in defense supplier companies or the other way round, many defense suppliers recruit previous soldiers. Therefore, it was of interest to evaluate the share of respondents with previous experience in the military. As a matter of fact, the majority of respondents had experiences in previous military positions, most of them as (reserve) officers (54.8 per cent). Only 14.0 per cent of respondents mentioned that they had no career in the military before. That distribution is not surprising, when considering the military-industrial complex and personnel interrelations in the German defense industry. The possible (bias) effect of previous experience in the military on perceptions of satisfaction is controlled late in this work.

The respondents to the survey work in 20 different measured technology fields. Many companies, 19.3 per cent, have aftermarket businesses, e.g. logistics and support services. This is followed by electronics (13.8 per cent), aerospace (9.0 per cent), simulation and consultancy (8.7 per cent), communication (7.0 per cent), armored vehicles (6.1 per cent) and other branches. The distribution of branches represents the German industrial situation quite well.

In addition, the relevance of the governmental (national) customer for defense equipment has been evaluated. For 49.5 per cent of the respondents this is the key market, for another 43.0 per cent it is at least an important market. Only 7.5 per cent rank the defense market as less important. These figures provide the first descriptive indication about the attractiveness of the national defense market. Overall, the survey sample appears to be representative of respondents in the German defense industry. Further descriptive insights are displayed in [Appendix 2](#).

To estimate the structural equation model, the partial least square (PLS) method is used using SmartPLS 3.0 software (Henseler *et al.*, 2009). PLS is a variance-based method that offers certain advantages and disadvantages compared with covariance-based methods. Hair *et al.* (2017) postulated a couple of situations in which PLS has advantages. In making the decision to use PLS, the following considerations are of relevance: PLS has advantages when:

- the prediction of a focal variable is sought;
- the analysis is explorative because little confirmed knowledge is available; and
- the sample size is small.

PLS has been chosen because this research analyzes the focal variable of preferential customer treatment and determines the drivers of customer attractiveness. Second, some paths, such as the influence of comparative customer-on-customer attractiveness is quite new and, at least for the specific context of defense, hardly researched. The model has an exploratory character. Third, the sample size of this study is clearly below the minimum threshold of 250 recommended for a covariance-based method (Reinartz *et al.*, 2009). On the

other hand, it is a clear advantage of structured equation modeling with PLS that interpretable results can be achieved even from very small sample sizes (Anderson *et al.*, 2002). Interpretable results are possible with a sample size as low as only 20 observations (Chin and Newsted, 1999). The 93 cases in this data set are more than sufficient for exploring effects.

The evaluation of the model followed two main steps (Chin, 2010). First, the reflective measurements are evaluated using indicator reliability, which should be higher than 0.7; construct reliability, which should be higher than 0.6; average variance extracted (AVE), which should be higher than 0.5 and Cronbach's  $\alpha$ , which should be more than 0.7. Furthermore, discriminant validity is assessed by checking if the square root of the AVE is higher than the absolute value of correlation shared between any of the other constructs (Götz *et al.*, 2010).

Second, the structural model is evaluated (Chin, 2010). The statistical significance is evaluated by applying the bootstrap method of individual changes with 5,000 bootstrap drawings (Henseler *et al.*, 2009). As a goodness-of-fit index, the coefficient  $R^2$  is used. To confirm the findings, the heterotrait-monotrait ratio of correlations is also calculated (Henseler *et al.*, 2015). In addition,  $f^2$  provides information on the relative effect of a variable (Chin, 1998). An  $f^2$  value of 0.02, 0.15 and 0.35 indicates that an exogenous variable has a small, medium or large influence, respectively, on an endogenous variable (Cohen, 1988). In addition, the Stone-Geisser criterion is used to assess the model's predictive relevance,  $Q^2$  (Geisser, 1974; Stone, 1974). A  $Q^2$  value higher than 0 indicates that the model has predictive relevance.

## 6. Variable measurement

To measure the latent constructs, we referred to the previous literature and made adjustments to our context using a six-point Likert scale. The questions from the German questionnaire, retranslated into English, can be found in Appendix 1. All constructs are measured with a six-point scale ranging from "totally disagree" to "totally agree."

To measure commitment, we used all three items from Hüttinger's study (2014) in the awareness that other research operationalizes commitment with items on the partner notion (Ghijssen *et al.*, 2010). To measure comparative customer, this work fully refers to the three items used in Hüttinger's study (2014), but we altered the wording slightly. For example, the item "the relationship with this customer is far better" has been changed to "the cooperation with this customer is far better." Pre-test evaluation caused the sharpening of the wording here. Trust has been measured using three items from Human and Naudé's study (2014), which have also been used in other works in similar forms (Hüttinger, 2014). Customer attractiveness has been evaluated following the operationalization approach of La Rocca *et al.* (2012). One item, which refers to the future opportunities with one customer, has been slightly altered in the translation from "Customer A has a high growth potential" to "This customer enables us to develop new growth potentials." Finally, the measurement of preferential customer treatment followed the operationalization of Pulles *et al.* (2016) and Hüttinger (2014), who both used the same measurement items.

Several control variables were included in the model. Gender and current position might influence the perceptions of a relationship (Lewicki *et al.*, 1998). In addition, the respondents answered the questions: did you have a previous career in the military, and which career level did you achieve? It is assumed that previous military experiences might influence the perception of commitment and customer attractiveness. The control variable "gender" was measured as female (Code 1) or male (Code 2). The question about the company position focused on hierarchical levels and whether the respondents work as experts (Code 4),

managers (Code 3), unit leaders (Code 2) or at the board level (Code 1). Similarly, the previous military career was measured using no military service (Code 1), subordinate military service (Code 2), low-ranking officer (Code 3) and high-ranking officer (Code 4). Later, Codes 3 and 4 were combined.

**7. Findings**

*7.1 Measurement model assessment*

After variable measurement, several validity tests were performed. The values for the assessment of the reflective measurement are shown in [Table II](#). Convergent validity is used to identify the extent to which a single measure variable correlates positively with alternative measures of the same construct. Item loadings are sufficiently high (>0.7). In addition, the AVE measures convergent validity on the construct level with the criteria of 0.50 or higher. The AVE values ranged from 0.667 to 0.891.

Internal consistency reliability refers to a form of reliability used to determine the consistency of results across items on the same test. PLS uses composite reliability and the Cronbach's  $\alpha$  for its criteria. Composite reliability over 0.6 and Cronbach's  $\alpha$  values over 0.7 are acceptable. Our composite reliability values satisfy the threshold.

Next, the discriminant validity is examined; this is used to measure the extent to which a construct is truly distinct from other constructs in two ways. As recommended by [Fornell and Larcker \(1981\)](#), the square root of the AVE for each construct should be greater than its highest correlation with any other construct. As [Table III](#) shows, all the square roots of the AVE values satisfy the criteria.

Construct	Item	Loading	Convergent validity		
			Average variance extracted (AVE)	Internal consistency	
			Composite reliability	Cronbach's $\alpha$	
<i>Critical values</i>		>0.7	>0.5	>0.6	>0.7
Comparative Customer	CompC1	0.870	0.813	0.929	0.885
	CompC2	0.918			
	CompC3	0.916			
Commitment	Comm1	0.927	0.891	0.961	0.939
	Comm2	0.966			
	Comm3	0.938			
Trust	Trust1	0.826	0.753	0.901	0.837
	Trust2	0.881			
	Trust3	0.895			
Customer attractiveness	Attract1	0.895	0.734	0.892	0.818
	Attract2	0.827			
	Attract3	0.846			
Preferential customer treatment	PrefT1	0.777	0.667	0.889	0.838
	PrefT2	0.843			
	PrefT3	0.843			
	PrefT4	0.801			

**Table II.** Estimation of the reflective measurement parameters ( $n = 93$ )

In addition, discriminant validity is assessed by controlling the cross loadings of the measurement variables. The cross loading should check whether each construct shares a larger variance with its own measures than with other measures. Thus, an indicator's outer loadings should be higher than all its cross loadings with other constructs. Appendix 3 shows that the model meets the cross loading requirements. Coupled with validity assessment, the multicollinearity is reported with variance inflation factor values for all of the constructs ranging from 1.000 to 1.358. In summary, the results show satisfactory discriminant validity at both the construct and item levels.

To confirm the findings for the most important relationship in the model between customer attractiveness and preferential customer treatment, the heterotrait–monotrait ratio is calculated. This test is more conservative and thus has a higher reliability (Henseler et al., 2015). With a highest value of 0.608, the heterotrait–monotrait ratio of correlations is below the critical value of 0.85, which confirms the discriminant validity findings. Overall, the evaluation of the outer models showed satisfactory results, which allows for the further examination of the inner structural model in the second step (Chin, 2010).

### 7.2 Structural model assessment

Figure 2 summarizes the structural model tested by the PLS analysis and Tables IV and V display the findings in detail. First, it is shown that the control variables only play a minor role. All path coefficients for these variables (gender, previous military career and company position) are below the critical value of 0.1 (Chin, 1998), which means that these control variables have no effect. Alternatively, this check supports the relevance and effects of the measured latent constructs for the respondents. Similar results have been obtained when preferential customer treatment was used as the control variable.

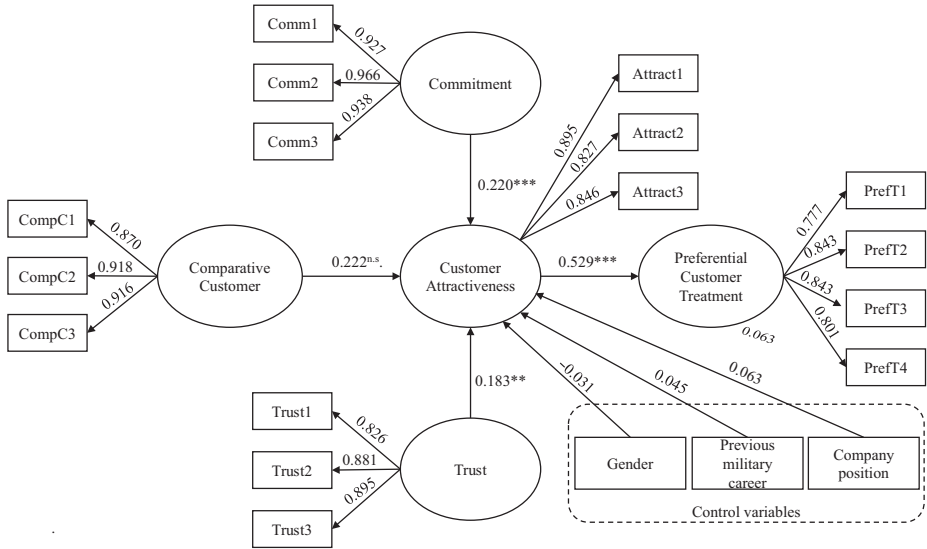
The results, referring to H1 to H3, indicate that commitment, trust and comparative customer are positively associated with customer attractiveness. However, it is not possible to confirm H1, as the path is slightly above the significance threshold, even if  $f^2$  would indicate a weak effect (0.222,  $p = 0.108$ ,  $f^2 = 0.048$ ). For H2 and H3, there is significance. Commitment has a significant positive influence on customer attractiveness (0.220,  $p < 0.01$ ,  $f^2 = 0.056$ ), and trust has a significant positive influence on customer attractiveness (0.183,  $p < 0.1$ ,  $f^2 = 0.031$ ).

The results also support the idea that customer attractiveness is positively linked to preferential customer treatment. The path coefficient from customer attractiveness to preferential customer treatment is highly significant (0.529,  $p < 0.000$ ,  $f^2 = 0.390$ ). This result supports H4, which posits that – even in the specific field of the defense business – customer attractiveness positively affects resource allocation to a preferred customer. Overall, the  $R^2$  for customer attractiveness ( $R^2 = 0.215$ ;  $Q^2 = 0.137$ ) and for preferred

Construct	Commitment	Comparative customer	Customer attractiveness	Preferred customer treatment	Trust
Commitment	<i>0.944</i>				
Comparative Customer	0.220	<i>0.902</i>			
Customer Attractiveness	0.322	0.357	<i>0.857</i>		
Preferred Customer Treatment	0.306	0.158	0.529	<i>0.816</i>	
Trust	0.293	0.476	0.353	0.119	<i>0.868</i>

**Table III.**  
Discriminant validity coefficients

**Note:** Italic data indicate the square roots of the AVE



**Figure 2.**  
Results of the research model inclusive of the control variables

**Note:** \* =  $p < 0.1$ ; \*\* =  $p < 0.05$ ; \*\*\* =  $p < 0.01$

**Table IV.**  
Results of the coefficient of determination and predictive relevance ( $n = 93$ )

Construct	$R^2$	$Q^2$	$f^2$ in relation to defense customer attractiveness	Preferential customer treatment
Comparative customer	n.a.	n.a.	0.048	
Commitment	n.a.	n.a.	0.056	
Trust	n.a.	n.a.	0.031	
Defense customer attractiveness	0.215	0.137		0.390
Preferential customer treatment	0.280	0.155		

**Table V.**  
Results of the path coefficient without control variables ( $n = 93$ )

Path	Path coefficient	Standard error	$t$ -value	$p$ -value
Comparative Customer → Customer Attractiveness	0.222	0.138	1.609	0.108
Commitment → Customer Attractiveness	0.220	0.083	2.660	0.008
Trust → Customer attractiveness	0.183	0.102	1.789	0.074
Customer attractiveness → Preferential customer treatment	0.529	0.080	6.631	0.000

customer treatment ( $R^2 = 0.280$ ;  $Q^2 = 0.155$ ) indicate that the model has moderate explanatory power.

### 8. Discussion, implications and conclusions

One might assume that the specific market conditions in defense, namely, long-term projects, political influence, special legal regulation, large, specific investments in equipment

and know-how, and a strong interdependence between the military and the domestic defense industry, lead to a market that is only slightly influenced by relational constructs such as trust, commitment or attractiveness. Until now, there was very little academic discussion about the customer attractiveness of the military, the understanding of its antecedents and the use of that knowledge in form of relational supply management practices. In contrast, transactional practices, which focus on immediate benefits for the customer in arms-length relationships (Liu *et al.*, 2009), are central elements of defense procurement practices. The academic discussion addresses such transactional practices in defense e.g. volume bundling, competition, or performance evaluation and KPI controlling (Kidalov, 2015; Anton and Yao, 1987; Glas *et al.*, 2013). Such instruments with the aim to enhance competition and transparency are also implemented in procurement regulations (e.g. Directive 2009/81/EC of the EU on defense procurement). In contrast, the A400M-example illustrated that the topic of relational supply practices is of increasingly high interest for military practices. This study supports with an exploratory, quantitative structural equation model that relational constructs, trust, commitment and attractiveness affect supplier performance for the military customer. Thus, the main implication of this research is that theory and practice in defense management should (re-)consider relational approaches in the management of buyer–supplier relationships.

In more detail, the empirical study provides findings on the relevance and influence of the specific drivers of customer attractiveness and preferential customer treatment. The specific sample of respondents from the German defense industry retains the focus on the defense business. The most important finding of this study refers to *H4*. The results show that the customer attractiveness of the (domestic) military significantly influences how that customer is treated and if preferential resources are given to this customer. The implications of this finding are twofold. First, this study found evidence that supports that latent constructs around the buyer–supplier business relationship in defense have a statistically significant relevance. This might call for a more relation-oriented theory of armament and defense supply management, besides classical contract-/regulation-/governance-centric approaches to supplier management in defense. Second, alternatively, preferred resource allocation is a promising aim for the military, which can be achieved through customer attractiveness. The strengthening of purchasing resources (e.g. more personnel, better training and education, etc.) or optimized and long-term armament planning, considering the needs of the defense suppliers, might improve customer attractiveness. It is acknowledged that the findings seem not to be surprising, as a higher level of attractiveness leads to preferential supplier treatment. However, the findings can give an important impulse to reconsider relational practices in defense supply management. Nollet *et al.* (2012) postulated a number of procurement tactics to increase attractiveness or to sustain a preferred customer status. Kumar and Routroy (2016) recently analyzed enablers of a preferred customer status. However, it should be evaluated if and which enabler really suits to the defense market (Nollet *et al.* (2012) mention e.g. “organize partner events,” “take part in social media”). Future research could investigate relational practices for the specific defense market setting. This might include the analysis how defense acquisition must act in the future, as recent research found that the more mature a buyer collaborates with a supplier, the higher is the relational perception of e.g. attractiveness (Bemelmans *et al.*, 2015).

*H1-H3* have shown that there are a number of factors that have an effect on customer attractiveness. It is important to highlight that latent constructs, such as commitment and trust, have a significant effect on attractiveness. Thus, it is worthwhile to not only focus efforts on the increase of efficiency and effectiveness in current armament projects (e.g. through “hard” measures against suppliers) but also to invest in commitment and trust



building. Then, such investments into better supplier management can positively affect attractiveness and in the long run can contribute to safeguarding preferential resource allocation by suppliers. Trust and commitment seem to be more important than the relative performance of the military customer against other potential customers, as *H1* is not statistically supported. This is surprising, as the possibility of allocating resources to other customers is the basic assumption behind preferential treatment. Here, relative customer performance is not statistically relevant, but might influence other constructs. More specifically, this study focused on customer attractiveness, its antecedents and the effect on preferential customer treatment. As the survey was exploratory in the defense context, other constructs have not been considered. Supplier satisfaction is one of these constructs that would be of high interest, as in an industrial context satisfaction is somehow an intermediate variable between attractiveness and preferential treatment (Hüttinger *et al.*, 2012). It can be expected that high attractiveness positively influences satisfaction. Future research could explore other attributes and factors on attractiveness, satisfaction and preferred customer treatment. For example, the procurement skills of the military and the communication and service quality of the military in its cooperation with the supplier are of interest in this context. Suppliers perceive how they are treated and on that basis they build their perceptions about trust and commitment. Therefore, future studies should investigate these assumptions and their consequences for defense procurement.

In addition, all implications are based on the empirical survey findings, which face several limitations. Sample size is relatively small, what forced this work to stay on an exploratory level using PLS for the structural equation model instead of applying covariance-based methods. Future research could broaden its empirical basis to allow the application of such a methodology.

Next, this survey used key informants for each supplier company. Even if the contacts follow a self-selection approach, as firms register at the German Defense Association with a personal contact, which usually is the key contact for all defense related business issues, there might not necessarily be a uniform perception within the defense supplier company. Overall, it is a limitation that using a single key informant could produce some bias in the study.

Finally, the sample is homogenous with respect to the focus of all supplier companies on the defense business. Furthermore, all suppliers collaborate with the same defense procurement agency and all are embedded in the specific security, political, budgetary and military situation of Germany and Central Europe. Nevertheless, the sample is specific and only representative for its regional setting. Future research could extend the scope of this study and include data from other countries and multi-national buyer–supplier relationships.

## References

- Aminoff, A. and Tanskanen, K. (2013), "Exploration of congruence in perceptions of buyer – supplier attraction: a dyadic multiple case study", *Journal of Purchasing and Supply Management*, Vol. 19 No. 3, pp. 165-184.
- Andersen, P.H., Ellegaard, C. and Kragh, H. (2016), "I'm your man: how suppliers gain strategic status in buying companies", *Journal of Purchasing and Supply Management*, Vol. 22 No. 2, pp. 72-81.
- Anderson, S.W., Hesford, J.W. and Young, S.M. (2002), "Factors influencing the performance of activity based costing teams: a field study of ABC model development time in the automobile industry", *Accounting, Organizations and Society*, Vol. 27 No. 3, pp. 195-211.
- Anton, J.J. and Yao, D.A. (1987), "Second sourcing and the experience curve: price competition in defense procurement", *RAND Journal of Economics*, Vol. 18 No. 1, pp. 57-76.

- 
- Armstrong, J.S. and Overton, T.S. (1977), "Estimating nonresponse bias in mail surveys", *Journal of Marketing Research*, Vol. 14 No. 3, pp. 396-402.
- BAAINBw (2016), "Customer Product Management (nov.)", available at: [www.baainbw.de/resource/resource/NmU3NTZjNmMzNmMzMDMwMzAzMDMwMzAzMDMwMzAzMDMwMzAzMDMwMzAzMDZzMzgzNTczNzA3NTZjNjlyMDIwMjAyMDIw/CPM\\_\(nov.\).pdf](http://www.baainbw.de/resource/resource/NmU3NTZjNmMzNmMzMDMwMzAzMDMwMzAzMDMwMzAzMDMwMzAzMDMwMzAzMDZzMzgzNTczNzA3NTZjNjlyMDIwMjAyMDIw/CPM_(nov.).pdf) (accessed 25 October 2017).
- Bemelmans, J., Voordijk, H., Vos, B. and Dewulf, G. (2015), "Antecedents and benefits of obtaining preferred customer status experiences from the Dutch", *International Journal of Operations & Production Management*, Vol. 35 No. 2, pp. 178-200.
- Bishop, P. and Williams, T. (1997), "Restructuring the UK defence industry: market pressures and management initiatives", *Long Range Planning*, Vol. 30 No. 1, pp. 21-28.
- Blau, P.M. (1964), *Power and Exchange in Social Life*, Wiley & Sons, New York, NY.
- Cannon, J.P. and Perreault, W.D. Jr (1999), "Buyer-seller relationships in business markets", *Journal of Marketing Research*, Vol. 36 No. 4, pp. 439-460.
- Chin, W.W. (1998), "The partial least squares approach to structural equation modeling", in Marcoulides, G.A. (Ed.), *Modern Methods for Business Research*, Erlbaum, Mahwah, pp. 295-358.
- Chin, W.W. (2010), "How to write up and report PLS analyses", in Esposito, V.V., Chin, W.W., Henseler, J. and Wang, H. (Eds), *Handbook of Partial Least Squares: Concepts, Methods, and Applications*, Springer, Heidelberg, pp. 655-690.
- Chin, W.W. and Newsted, P.R. (1999), "Structural equation modeling analysis with small samples using partial least squares", in Hoyle, R.H. (Ed.), *Statistical Strategies for Small Sample Research*, Sage, Thousand Oaks, CA, pp. 307-341.
- Christiansen, P.E. and Maltz, A. (2002), "Becoming an "interesting" customer: procurement strategies for buyers without leverage", *International Journal of Logistics Research and Applications*, Vol. 5 No. 2, pp. 177-195.
- Cohen, J. (1988), *Statistical Power Analysis for the Behavioral Sciences*, 2nd ed., Lawrence Erlbaum Associates, Publishers, Hillsdale, NJ.
- Doney, P.M. and Cannon, J.P. (1997), "An examination of the nature of trust in buyer-seller relationships", *Journal of Marketing*, Vol. 61 No. 2, pp. 35-51.
- Dunne, J.P. (1995), "The defence industrial base", in Hartley, K. and Sandler T. (Eds), *Handbook of Defence Economics*, Elsevier Science, Amsterdam, pp. 399-430.
- Ellegaard, C., Johansen, J. and Drejer, A. (2003), "Managing industrial buyer-supplier relations – the case for attractiveness", *Integrated Manufacturing Systems*, Vol. 14 No. 4, pp. 346-356.
- Ellis, S.C., Henke, J.W. Jr and Kull, T.J. (2012), "The effect of buyer behaviors on preferred customer status and access to supplier technological innovation: an empirical study of supplier perceptions", *Industrial Marketing Management*, Vol. 41 No. 8, pp. 1259-1269.
- European Commission (2006), *The new SME Definition: User Guide and Model Declaration*, available at: [http://ec.europa.eu/enterprise/policies/sme/files/sme\\_definition/sme\\_user\\_guide\\_en.pdf](http://ec.europa.eu/enterprise/policies/sme/files/sme_definition/sme_user_guide_en.pdf) (accessed 4 November 2009).
- Fornell, C. and Larcker, D. (1981), "Evaluating structural equation models with unobservable variables and measurement error", *Journal of Marketing Research*, Vol. 18 No. 1, pp. 35-90.
- Ganesan, S. (1994), "Determinants of long-term orientation in buyer-seller relationships", *Journal of Marketing*, Vol. 58 No. 2, pp. 1-19.
- Garbarino, E. and Johnson, M.S. (1999), "The different roles of satisfaction, trust, and commitment in customer relationships", *The Journal of Marketing*, Vol. 63 No. 2, pp. 70-87.
- Galt, J.D.A. and Dale, B.G. (1991), "Supplier development: a British case study", *Journal of Supply Chain Management*, Vol. 27 No. 1, pp. 16-22.

- Geisser, S. (1974), "A predictive approach to the random effects model", *Biometrika*, Vol. 61 No. 1, pp. 101-107.
- Ghijssen, P.W., Semeijn, J. and Ernston, S. (2010), "Supplier satisfaction and commitment: the role of influence strategies and supplier development", *Journal of Purchasing and Supply Management*, Vol. 16 No. 1, pp. 17-26.
- Glas, A.H., Hofmann, E. and Eßig, M. (2013), "Performance-based logistics: a portfolio for contracting military supply", *International Journal of Physical Distribution & Logistics Management*, Vol. 43 No. 2, pp. 97-115.
- Golde, S. and Tishler, A. (2004), "Security needs, arms exports, and the structure of the Defence industry", *Journal of Conflict Resolution*, Vol. 48 No. 5, pp. 672-698.
- Götz, O., Liehr-Gobbers, K. and Krafft, M. (2010), "Evaluation of structural equation models using the Partial Least Squares (PLS) approach", in Eposito, V.V., Chin, W.W., Henseler, J. and Wang, H. (Eds), *Handbook of Partial Least Squares: Concepts, Methods, and Applications*, Springer, Heidelberg, pp. 691-711.
- Gundlach, G.T., Achrol, R.S. and Mentzer, J.T. (1995), "The structure of commitment in exchange", *The Journal of Marketing*, Vol. 59 No. 1, pp. 78-92.
- Hair, J.F., Hult, G., Tomas, M., Ringle, C.M. and Sarstedt, M. (2017), *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*, 2nd ed., Sage, Los Angeles.
- Hartley, K. (2004), "The economics of military outsourcing", *Defence Studies*, Vol. 4 No. 2, pp. 199-206.
- Hartley, K. (2007), "The Arms Industry, Procurement and Industrial Policies", in Sandler, T. and Hartley, K. (Eds), *Handbook of Defence Economics*, Elsevier, Amsterdam, Vol. 2, pp. 1139-1176.
- Henseler, J., Ringle, C.M. and Sinkovics, R.R. (2009), "The use of partial least squares path modeling in international marketing", in Sinkovics, R.R. and Ghauri, P.N. (Eds), *New Challenges to International Marketing*, Emerald, pp. 277-319.
- Henseler, J., Ringle, C.M. and Sarstedt, M. (2015), "A new criterion for assessing discriminant validity in variance-based structural equation modeling", *Journal of the Academy of Marketing Science*, Vol. 43 No. 1, pp. 115-135.
- Holst, E. and Wiemer, A. (2010), "On the Underrepresentation of Women in Top Boards of Large Companies", DIW Berlin Discussion Paper No. 1001, available at: <http://dx.doi.org/10.2139/ssrn.1641068>
- Homans, G.C. (1958), "Social behavior as exchange", *American Journal of Sociology*, Vol. 63 No. 6, pp. 597-606.
- Human, G. and Naudé, P. (2014), "Heterogeneity in the quality-satisfaction-loyalty framework", *Industrial Marketing Management*, Vol. 43 No. 6, pp. 920-928.
- Hunt, S.D. and Davis, D.F. (2008), "Grounding supply chain management in resource- advantage theory", *The Journal of Supply Chain Management*, Vol. 44 No. 1, pp. 10-21.
- Hüttinger, L. (2014), *Preferential Customer Treatment by Suppliers*, Logos Verlag, Berlin.
- Hüttinger, L., Schiele, H. and Veldman, J. (2012), "The drivers of customer attractiveness, supplier satisfaction and preferred customer status: a literature review", *Industrial Marketing Management*, Vol. 41 No. 8, pp. 1194-1205.
- Kapletia, D. and Probert, D. (2010), "Migrating from products to solutions: an exploration of system support in the UK defence industry", *Industrial Marketing Management*, Vol. 39 No. 4, pp. 582-592.
- Kidalov, M.V. (2015), "Impact of contract bundling and consolidation on defense acquisition system and defense industrial base: the case of the US Department of the Navy", *Journal of Public Procurement*, Vol. 15 No. 1, pp. 1-37.
- Kirkpatrick, D.L. (1995), "The rising unit cost of defence equipment, the reasons and the results", *Defence and Peace Economics*, Vol. 6 No. 4, pp. 263-288.

- Kline, R.B. (2011), *Principles and Practice of Structural Equation Modeling*, 3rd ed., Guilford Publications, New York, NY.
- KPMG, Group, P. and TaylerWessing (2014), *Exzerpt Bestandsaufnahme Risikoanalyse zentraler Rüstungsprojekte. Report*, available at: [www.bmvg.de/resource/blob/11644/d5cdd057b87a9a9f84dadeaa72d4ae59/c-06-10-14-download-expertenbericht-zu-ruestung-sprojekten-uebergeben-data.pdf](http://www.bmvg.de/resource/blob/11644/d5cdd057b87a9a9f84dadeaa72d4ae59/c-06-10-14-download-expertenbericht-zu-ruestung-sprojekten-uebergeben-data.pdf) (accessed 10 September 2017).
- Kumar, N., Scheer, L.K. and Steenkamp, J.-B.E.M. (1995), "The effects of perceived interdependence on dealer attitudes", *Journal of Marketing Research*, Vol. 32 No. 3, pp. 348-356.
- Kumar, S.C. and Routroy, S. (2016), "Analysis of preferred customer enablers from supplier's perspective", *Business Process Management Journal*, Vol. 22 No. 6, pp. 1170-1191.
- Kurbjuweit, D., Repinski, G. and Traufetter, G. (2015), "Zu fett zum fliegen", *Spiegel*, No. 5, pp. 16-23. available at: <http://magazin.spiegel.de/EpubDelivery/spiegel/pdf/131464315> (accessed 10 September 2017).
- La Rocca, A., Caruana, A. and Snehota, I. (2012), "Measuring customer attractiveness", *Industrial Marketing Management*, Vol. 41 No. 8, pp. 1241-1248.
- Leik, R.K. and Leik, S.A. (1977), *Transition to Interpersonal Commitment*, Transaction Inc, New Brunswick.
- Levine, P., Sen, S. and Smith, R. (2000), "Arms exports, controls and production", *Defence and Peace Economics*, Vol. 11 No. 3, pp. 443-548.
- Lewicki, R.J., McAllister, D.J. and Bies, R.J. (1998), "Trust and distrust: new relationships and realities", *The Academy of Management Review*, Vol. 23 No. 3, pp. 438-458.
- Liu, Y., Luo, Y. and Liu, T. (2009), "Governing buyer-supplier relationships through transactional and relational mechanisms: evidence from China", *Journal of Operations Management*, Vol. 27 No. 4, pp. 294-309.
- Makkonen, H., Vuori, M. and Puranen, M. (2016), "Industrial marketing management buyer attractiveness as a catalyst for buyer-supplier relationship development", *Industrial Marketing Management*, Vol. 55, pp. 156-168.
- Mantin, B. and Tishler, A. (2004), "The structure of the defence industry and the security needs of the country: a differentiated products model", *Defence and Peace Economics*, Vol. 15 No. 5, pp. 397-419.
- Melnik, S.A., Page, T.J., Jinhui, S. and Burns, L.A. (2012), "Would you mind completing this survey: assessing the state of survey research in supply chain management", *Journal of Purchasing and Supply Management*, Vol. 18 No. 1, pp. 35-45.
- Mills, C.W. (1956), *Power Elite*, Oxford University Press, New York, NY.
- Morgan, R.M. and Hunt, S.D. (1994), "The commitment-trust theory of relationship marketing", *The Journal of Marketing*, Vol. 58 No. 3, pp. 20-38.
- Mulhern, F.J. (1999), "Customer profitability analysis: measurement, concentration, and research directions", *Journal of Interactive Marketing*, Vol. 13 No. 1, pp. 25-40.
- Nironen, E. (1995), "Corporate strategy and culture in a conversion process: adjustment in defence industry", *International Journal of Production Economics*, Vol. 41 Nos 1/3, pp. 297-301.
- Nollet, J., Rebolledo, C. and Popel, V. (2012), "Becoming a preferred customer one step at a time", *Industrial Marketing Management*, Vol. 41 No. 8, pp. 1186-1193.
- Nyaga, G.N., Whipple, J.M. and Lynch, D.F. (2010), "Examining supply chain relationships: do buyer and supplier perspectives on collaborative relationships differ?", *Journal of Operations Management*, Vol. 28 No. 2, pp. 101-114.
- Patton, M. (1990), *Qualitative Evaluation and Research Methods*, 2nd ed., Sage, Beverly Hills, CA.

- Pulles, N.J., Schiele, H., Veldman, J. and Hüttinger, L. (2016), "The impact of customer attractiveness and supplier satisfaction on becoming a preferred customer", *Industrial Marketing Management*, Vol. 54, pp. 129-140.
- Ramsay, J. and Wagner, B.A. (2009), "Organisational supplying behaviour: understanding supplier needs, wants and preferences", *Journal of Purchasing and Supply Management*, Vol. 15 No. 2, pp. 127-138.
- Reinartz, W.J., Haenlein, M. and Henseler, J. (2009), "An empirical comparison of the efficacy of covariance-based and variance-based SEM", *International Journal of Research in Marketing*, Vol. 26 No. 4, pp. 332-344.
- Scanzoni, J. (1979), "Social exchange and behavioral interdependence", in Burgess, R.L., Huston, T.L. (Eds), *Social Exchange in Developing Relationships*, Academic Press, New York, NY.
- Schiele, H., Calvi, R. and Gibbert, M. (2012), "Customer attractiveness, supplier satisfaction and preferred customer status: introduction, definitions and an overarching framework", *Industrial Marketing Management*, Vol. 41 No. 8, pp. 1178-1185.
- Schiele, H., Ellis, S.C., Eßig, M., Henke, J.W. and Kull, T.J. (2015), "Managing supplier satisfaction: social Capital and resource dependence frameworks", *Australasian Marketing Journal*, Vol. 23 No. 2, pp. 132-138.
- Schiele, H., Veldman, J. and Hüttinger, L. (2011), "Supplier innovativeness and supplier pricing: the role of preferred customer status", *International Journal of Innovation Management*, Vol. 15 No. 1, pp. 1-28.
- SIPRI (2016), *SIPRI Yearbook 2016*, available at: <https://sipri.org/sites/default/files/YB16-Summary-DEU.pdf> (accessed 10 September 2017).
- Stone, M. (1974), "Cross-validatory choice and assessment of statistical predictions", *Journal of the Royal Statistical Society*, Vol. 36 No. 2, pp. 111-147.
- Thibaut, J.W. and Kelley, H.H. (1959), *The Social Psychology of Groups*, John Wiley, Oxford.
- Tchokogué, A., Fortin, J. and Nollet, J. (2015), "Outsourcing Canadian Armed Forces logistics in a foreign theatre", *Canadian Journal of Administrative Sciences/Revue Canadienne Des Sciences De L'administration*, Vol. 32 No. 2, pp. 113-127.
- Williams, M. (2001), "In whom we trust: group membership as an affective context for trust development", *Academy of Management Review*, Vol. 26 No. 3, pp. 377-396.

<i>Commitment*</i>		
Comm1	We want to stay a supplier of this customer	Hüttinger (2014)
Comm2	We want to support a long-term relationship with this customer	
Comm3	We maintain the relationship with this customer for a long time	
<i>Comparative customer*</i>		
CompC1	The cooperation with this customer is far better	Hüttinger (2014)
CompC2	This customer is supporting us better administratively	
CompC3	Working with this customer is much easier than with others	
<i>Trust*</i>		
Trust1	This customer can be trusted	Human and Naudé (2014)
Trust2	We rely on this customer to do/decide what is right	
Trust3	This customer has high integrity and loyalty	
<i>(Defense) Customer attractiveness*</i>		
Attract1	This customer secures our competitive position	La Rocca <i>et al.</i> (2012)
Attract2	This customer enables us to develop new market potentials	
Attract3	This customer could hardly be replaced	
<i>Preferential customer treatment*</i>		
PrefT1	We inform this customer first about new ideas	Hüttinger (2014) and Pulles <i>et al.</i> (2016)
PrefT2	We allocate scarce resources to this preferred customer	
PrefT3	We share more know-how with this customer than with others	
PrefT4	This customer is our preferred customer	
<i>Control variables**</i>		
Position	What is your current company position?	
MilCareer	Have you been in military service before your career in this company?	
Gender	Please provide gender information	

**Notes:** \*Measured with a six-point Likert scale ranging from 1 “totally disagree” to 6 “totally agree”; \*\*measured with a set of choice options, please see [Table 1](#) for the alternatives and details

Variable	Mean	S.D.	Correlations			
			1	2	3	4
Comm1	5.78	0.587	1			
Comm2	5.77	0.592	0.859**	1		
Comm3	5.69	0.707	0.780**	0.869**	1	
CompC1	3.71	1.273	1			
CompC2	3.06	1.232	0.657**	1		
CompC3	3.12	1.276	0.657**	0.846**	1	
Trust1	4.67	1.116	1			
Trust2	3.89	1.238	0.524**	1		
Trust3	4.26	1.242	0.667**	0.704**	1	
Attract1	4.44	1.314	1			
Attract2	4.30	1.342	0.633**	1		
Attract3	4.90	1.453	0.655**	0.512**	1	
PrefT1	4.71	1.212	1			
PrefT2	4.55	1.156	0.650**	1		
PrefT3	4.59	1.262	0.618**	0.706**	1	
PrefT4	5.08	1.361	0.409**	0.484**	0.518**	1

**Table AII.**  
Variable descriptive  
statistics

**Note:** \*\*The significance is 0.01

Indicators	Commitment	Comparative customer	Trust	Customer attractiveness	Preferential customer treatment
Comm1	<i>0.927</i>	0.234	0.261	0.279	0.258
Comm2	<i>0.966</i>	0.195	0.293	0.324	0.278
Comm3	<i>0.938</i>	0.197	0.273	0.308	0.329
CompC1	0.229	<i>0.870</i>	0.479	0.353	0.152
CompC2	0.199	<i>0.918</i>	0.390	0.311	0.126
CompC3	0.160	<i>0.916</i>	0.408	0.295	0.149
Trust1	0.344	0.486	<i>0.826</i>	0.287	0.160
Trust2	0.164	0.394	<i>0.881</i>	0.357	0.109
Trust3	0.278	0.358	<i>0.895</i>	0.256	0.030
Attract1	0.231	0.423	0.391	<i>0.895</i>	0.424
Attract2	0.245	0.238	0.361	<i>0.827</i>	0.437
Attract3	0.352	0.250	0.156	<i>0.846</i>	0.500
PrefT1	0.197	0.134	-0.050	0.343	<i>0.777</i>
PrefT2	0.248	0.175	0.204	0.382	<i>0.842</i>
PrefT3	0.232	0.057	0.089	0.357	<i>0.843</i>
PrefT4	0.293	0.140	0.118	0.566	<i>0.801</i>

**Table AIII.**  
Cross loading  
analysis results

#### Corresponding author

Andreas Herbert Glas can be contacted at: [andreas.glas@unibw.de](mailto:andreas.glas@unibw.de)

For instructions on how to order reprints of this article, please visit our website:

[www.emeraldgroupublishing.com/licensing/reprints.htm](http://www.emeraldgroupublishing.com/licensing/reprints.htm)

Or contact us for further details: [permissions@emeraldinsight.com](mailto:permissions@emeraldinsight.com)