

## **Examining the effectiveness of purchasing trainings – Implications for the education of purchasing professionals**

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### **Abstract**

Purchasing and supply management (P/SM) has moved from an administrative to a strategic function (Giunipero, Handfield & Eltantawy, 2006). In order to effectively execute the strategic implications of the profession and to apply new concepts such as target costing or risk management, purchasing training is regarded as one of the major means to prepare purchasing professionals to carry out new assignments and to support the shift from operational to strategic purchasing (Carr & Smeltzer, 2000; Handfield & Nichols, 2004; Giunipero, Handfield & Eltantawy, 2006). From an industrial network perspective, interacting with others is the most fundamental activity of a company (Gadde, Huemer & Hakansson, 2003). Purchasing organizations see purchasing training as a reasonable way to develop skills and to change the attitudes of their purchasing employees and to enable them to better interact with their several interfaces (Giunipero, Handfield & Eltantawy, 2006). However, though the general importance of purchasing training to purchasing professionals is unquestioned, very few studies have addressed the influence factors and boundaries of purchasing training. A research model is presented, and hypotheses for further empirical investigation are brought forward. Finally, preliminary results of an in-depth case study are presented.

**Keywords:** Purchasing Training, Evaluation of training

## 1. INTRODUCTION

The changing business environment, represented by an increased globalization, raising customer requirements and the pressure to reduce costs while establishing long-term relationships with a world-wide supplier base has moved purchasing and supply management (P/SM) from an administrative to a strategic function (Giunipero, Handfield & Eltantawy, 2006). Organizations expect purchasing to select, manage and develop valuable and strategic suppliers (Carr & Smeltzer, 2000), to leverage cost, innovation and quality potentials (Monczka, Trent & Handfield, 2005), to manage supply risks (Giunipero, Denslow & Eltantawy, 2005) and to work in cross-functional teams with internal customers and suppliers on value-adding strategies (Giunipero, Handfield & Eltantawy, 2006).

Alongside with the purchasing function the purchasing profession has changed, too. In order to fulfill the above mentioned responsibilities, purchasing professionals need to develop new strategic skills and become more knowledgeable to support the strategic direction of the function (Carr & Smeltzer, 2000; Giunipero, Handfield & Eltantawy, 2006). While the purchasing clerk of the past had only a supportive role in the organization; “the supply professional of the future will be, first and foremost, a strategic thinker and creator of competitive advantage” (Burt & Dobler, 2003).

The increased emphasis on knowledge and skills in the purchasing function also changed the view on purchasing training. As underlined by several researchers, purchasing can only be elevated to a strategic level if strategic skills are inherent to the function (Carr & Smeltzer, 2000; Carr, Leong & Sheu, 2000; Cousins, Lawson & Squire, 2006; Tassabehji & Moorhouse, 2008). Purchasing training can support the shift of purchasing from a clerical to a more strategic function as it is regarded as pervasive method to improve the skills of purchasing employees (Giunipero & Handfield, 2004; Handfield & Nichols, 2004; Ogden, Rossetti & Hendrick, 2007) and to enable purchasing professionals to implement strategic plans consistent with the firm’s goals (Carr, Leong & Sheu, 2000). The increased importance of purchasing training is also reflected by the amount spent. U.S. organizations spend annually \$ 1.813 per employee on purchasing training, and devote more than 8.6 days per year for training the average purchasing professional (Giunipero & Handfield, 2004). These numbers are predicted to increase to an average training budget of \$ 3.401 and to more than 10 days of training per year for every purchasing professional by 2010 (Giunipero & Handfield, 2004). Besides, multinational companies such as Novartis or Nestlé develop company specific purchasing programs and implement worldwide training initiatives to develop the skills of their purchasing professionals and to support the strategic direction of the function (Whitehead, 2006).

Obviously, purchasing organizations that invest significant amounts of money in training want to see that their expenditures actually pay off and improve not only purchasing skills and knowledge but also the ability to develop and implement purchasing strategies consistent with the overall strategy of the organization. Nevertheless, so far only little information is available about what influences the outcomes of purchasing training. Considering the importance and potential impact of purchasing training and keeping the costs for developing and implementing these programs in mind, it is especially important for researchers and practitioners to have a better understanding of the influence factors and boundaries of purchasing training. Our research therefore looks at the relationship between training design criteria and the perceived training effectiveness. Specifically, we analyze how the perception of the purchasing trainer and the program design influences the total evaluation and practicability of the program. This study uses longitudinal case-research within one multinational company that has implemented a comprehensive in-house purchasing training program. The purchasing program trained more than 150 purchasing professionals in six different purchasing courses in Europe from 2006 to 2008. The objectives of this article are twofold: (1) to define the influence factors of purchasing training and to present preliminary research findings from our in-depth case study.

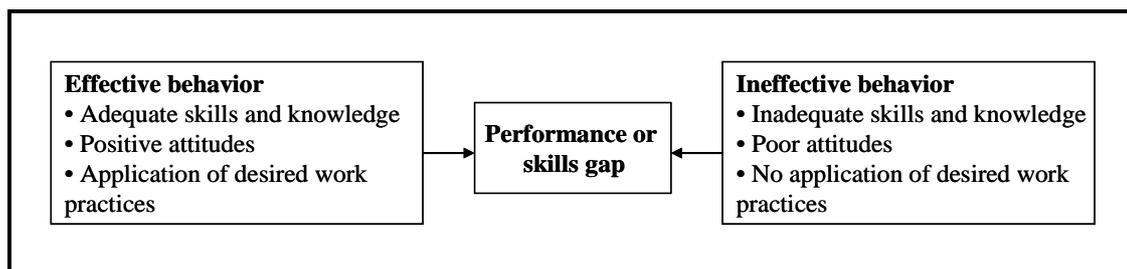
After a review of the training concept and its underlying theories, we will derive our research hypotheses which are followed by the research methods and the major findings of the case study. Finally, a discussion of the findings, summary and research limitations conclude the article.

## 2. LITERATURE REVIEW

### 2.1 Definition of training

Training is regarded as a cornerstone of human resource management and one of the most pervasive methods for enhancing the productivity of employees (Arthur et al., 2003; Paul & Anantharaman, 2003). It is defined as “the systematic acquisition and development of the knowledge, skills, and attitudes required by employees to adequately perform a task or job or to improve performance in the job environment” (Wexley & Latham, 2002). Contrary to development activities, which increase abilities in relation to future needs, training activities are directed at an immediate or near-term application (Dowling & Welch, 2004), and are designed to close a gap between the desired and actual performance as illustrated in figure 1 (Swart et al., 2005). Accordingly, training should convey and develop those knowledge, skills, and attitudes which are needed to effectively perform a task or job (Tharenou, Saks & Moore, 2007) and should be tailored to organizational and employee needs (Tannenbaum & Yukl, 1992).

**Figure 1: The effectiveness behavior gap**



Source: Adapted from Swart et al., 2005, p. 192

Training activities cover more than just formal training courses and can be classified along the dimensions formality, location and degree of interaction (Brussig & Leber 2006). The main difference between formal and informal training lies in the degree of planning. Formal training refers to organized training activities that have predetermined the purpose and format (OECD, 1997). Informal training refers to rather improvised development activities such as on-the-job training (OECD, 1997; Tharenou, Saks & Moore, 2007).

In purchasing, organizations utilize a broad variety of training methods to train their employees. Most purchasing organizations rely on informal on-the-job training to train their employees (Giunipero & Handfield, 2004). This training method is typically conducted by an experienced colleague or supervisor and is one of the oldest ways of workplace learning; nevertheless it focuses rather on process learning than on skills-based learning (Versloot, de Jong & Thijssen, 2001). In purchasing, the use of informal on-the-job training is currently declining, while the use of formal classroom training is rising (Giunipero & Handfield, 2004). Today, 67 percent of all purchasing organizations are applying formal purchasing training and this number is projected to increase to 76 percent in the near future (Giunipero & Handfield, 2004). Contrary to informal training, formal training contributes to skills-based and factual learning and supports to the teambuilding process (Brussig & Leber, 2006).

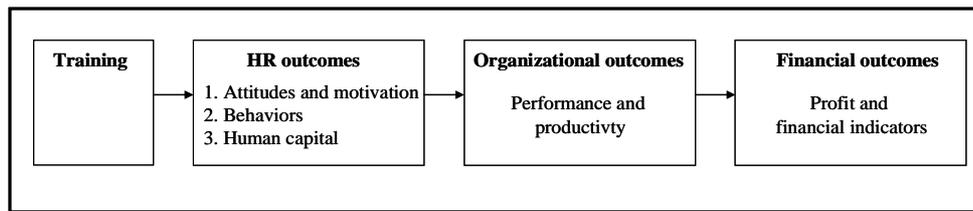
## 2.2 Theoretical underpinnings of training

From a theoretical side, different theories attempt to explain the role of training in firms. It is generally assumed that training influences organizational-level outcomes (Alliger et al., 1997; Tharenou, Saks & Moore, 2007). In order to explain how training might lead to organizational-level outcomes the literature of strategic human resource management (SHRM) offers three theories that explain the link of training to organization-level outcomes (Tharenou et al., 2007): (1) The resource-based view of the firm (Barney, 1991), (2) the behavioral perspective (Schuler & Jackson, 1987; Wright & McMahan, 1992) and (3) the cybernetic systems model (Thompson, 1967). Most of the theoretical models however do not expose the direct training-organization link, but rather presume that individual training impacts human resource outcomes such as employee knowledge and behaviors and that these resources and behaviors ultimately influence organizational-level outcomes (Boselie, Dietz & Boon, 2005; Kozlowski et al., 2000).

In order to explain how training might influence individual-level outcomes, most theories draw on cognitive, instructional and educational psychology (Chen & Klimoski, 2007; Wright & McMahan, 1992; Schuler & Jackson, 1978). The *social cognitive theory* argues that people can not only learn through direct experience but also through observing other people's behavior (Bandura, 1984). Four component processes govern observational learning: attention (what is observed), retention (transforming and restructuring of events), reproduction (translation into appropriate courses) and motivation of individuals (Wood & Bandura, 1989). In the context of training, the social cognitive theory helps to understand how and why individuals learn more effectively (Chen & Klimoski, 2007). The *goal orientation theory* argues that individuals have different goals they want to achieve. These can be either learning orientation goals (with a preference on skills development) or performance orientation goals (with a preference on demonstrating competence) (Dweck, 1986). In training, differences in skills acquisition of individuals can be explained by the degree of goal orientation, as individuals with a strong learning goal orientation are more motivated to participate in training programs than those with a strong performance orientation (Ford et al. 1998). Different learning theories can help to understand the learning process at work. The ACT\* theory by Anderson argues that learning occurs through different stages from the development of declarative knowledge (knowledge of facts), to proceduralized knowledge (knowing how), to adaption and generalization (Anderson, 1983). The widely used *learning taxonomy* by Bloom distinguishes three types of learning: cognitive (knowledge), psychomotor (skills), affective (attitude) (Bloom, 1984). The three levels are organized in a hierarchic order and higher level cannot be reached until lower levels have been accomplished. For training, the taxonomy of learning implies that changes in skills and attitude can only be attained if lower levels of knowledge acquisition have already been addressed.

Summarizing, several theories can help to better understand the role of training in organizations. However it should be remembered that training is an applied science. Therefore, research in training is rather a "user-inspired science" than one that engages heavily in theory building (Chen & Klimoski, 2007). Building on the discussion above, most researchers view training as a chronological process that relates training to human resource outcomes (Tharenou, Saks & Moore, 2007). These outcomes subsequently generate organizational outcomes which result in improved financial performance. Figure 2 displays this implicit general theoretic model.

### **Figure 2: Theoretical model linking training to individual and organizational-level outcomes**



Source: Tharenou, Saks & Moore, 2007, p. 254

### 2.3 Empirical results of purchasing training

The human resource and training literature has theoretically emphasized the benefits that can be gained from training. Demonstrating empirically the effectiveness of training however is more difficult (Santos & Stuart, 2003). Research on the effects of training has been especially established on the individual-level outcomes (Tharenou, Saks & Moore, 2007). It has been shown that organizations that train more develop workforces with higher skills, competencies and motivation (Arthur et al., 2003; Tannenbaum & Yukl, 1992; Tharenou, Saks & Moore, 2007). Contrary, research on the effect of training on organizational-level outcomes has not been as strong as on the individual-level (Tharenou, Saks & Moore, 2007).

In our research, we specifically focus on purchasing training. As mentioned before, purchasing training is a relatively new but highly important topic to purchasing organizations. Purchasing training shall enable purchasing professionals to develop strategic purchasing skills and knowledge (Carr & Smeltzer, 2000; Carr, Leong & Sheu, 2000; Giunipero, Handfield & Eltantawy, 2006; Ogden, Rossetti & Hendrick, 2007) and to implement strategic plans consistent with the overall firm's goals (Carr, Leong & Sheu, 2000). Though the potential contributions of purchasing training to the function have been pointed out by numerous researchers, empirical studies of the effectiveness of purchasing training remain sparse. So far, only one study has been conducted that analyzes the impact of purchasing training to organizational-level outcomes. The study by Förstl, Hartmann & Moser (2008) analyzes the influence of various purchasing practices on purchasing and supply performance. The authors find that purchasing organizations that train more receive higher levels of purchasing and supply performance. Among all investigated practices, purchasing training had the strongest influence on performance metrics such as lower costs, higher quality of products and services, higher delivery speed and higher contribution to innovation (Förstl, Hartmann & Moser, 2008).

The study by Förstl, Hartmann & Moser (2008) underlines the positive effect of purchasing training on the organizational-level. However though persistent, the study does not analyze the individual-level outcomes and influence factors of purchasing training. In our research, we extend previous research and propose that purchasing training positively influences individual-level outcomes which subsequently influence strategic purchasing and purchasing and supply performance. In the following section we will explain the theoretical mechanism by which purchasing training influences individual-level outcomes and derive our research hypotheses.

### 2.4 Development of hypotheses

In general, the effectiveness of training can be evaluated on several levels, which are typically assessed hierarchically (Alliger et al., 1997). The most prevalent model to evaluate trainings is the model by Kirkpatrick (1967), which distinguishes four levels of training outcomes: (1) reaction, (2) learning, (3) behavior, and (4) results. The first three categories focus on individual outcomes of training and the last category on organizational-level outcomes (Alliger et al., 1997).

Among the individual-level outcomes, the reaction criterion continues to be the most common evaluation criterion of trainings (Arthur et al., 2003; Rowold, 2008; Velada & Caetano, 2007). The reaction criteria originally evaluated how trainees feel about the program (Kirkpatrick, 1967). It was later decomposed into affective and utility reactions (Alliger et al., 1997). Affective reaction criteria are the most common form of training assessment and evaluate how satisfied trainees are with the training (Alliger et al., 1997). Affective criteria are important for two reasons: First trainees can be considered as “customers” of the training and therefore affective criteria serve as customer evaluation. Second, the satisfaction with the training influences if trainees recommend a training to peer colleagues (Alliger et al., 1997). Reaction criteria evaluate the applicability and usefulness of the training for the current job. Obviously, the reaction criteria do not reveal how much has been actually learnt by the training. However, in a meta-analysis of 34 studies, Alliger et al (1997) found that utility reactions are positive related to learning. In addition, Baumgartel, Reynold & Pathan (1984) reported that trainees who value the training are more likely to apply the learned skills to the work environment. Finally, recent studies (Ruona et al., 2002; Tan, Hall & Boyce, 2003; Velada & Caetano, 2007) show that reaction criteria are predictors of a trainees learning application to the job. We therefore presume that reaction criteria are an indicator of how much skills and knowledge will be transferred by the trainees to the job.

In our research we specifically focus on the influence factors and drivers of purchasing training. As employees who do not value the training are less likely to effectively transfer the training, we investigate what impacts the satisfaction and perceived utility to purchasing trainings. So far, research on reaction criteria has focused primarily on the relationship between trainee reactions and learning and transfer of the training (Long, DuBois & Faley, 2007), and less on the antecedents of reaction criteria. With regards to reaction criteria, Tai (2004) showed that motivation and self-efficacy of trainees is positively related to utility reactions. Both factors focus on the inherent individual characteristics of the trainee. However, we propose that contextual organizational factors also affect reaction criteria.

According to the training literature, one of the most important factors that influence training transfer is the training design (Baldwin & Ford, 1988; Elangovan & Garakowsky, 1999; Velada & Caetano, 2007). The training design typically includes goal setting, appropriateness of various instructional techniques and learning principles (Baldwin & Ford, 1988; Velada et al., 2007). As pointed out by Holton, Reid & Ruona (2000) trainees are more likely to transfer the training content to the work environment when they perceive that the training was designed and structured in such a way that it matches the requirements of the job. Similarly, we argue that the perception of the training design, the structuring and set-up of the course to the work environment also influences the reaction criteria.

Building on these arguments, we propose a positive relationship between the perception of the training design and the reaction criteria, both affective and utility:

*H1: Purchasing trainee’s perception of the training design will be positively related to affective and utility reactions.*

In formal training, the training content is typically conveyed by a trainer (Brussig & Leber, 2006). Although the trainer is one of the central actors of the training process he has received little research attention (Arthur, et al., 2003). Yet, trainees remember knowledge and content of training programs better if it has been delivered by an open and expressive trainer (Towler & Dipboye, 2001). However, the relationship between the perceived competence of the trainer and overall satisfaction with the training is rather unexplored. In a study about sales trainer, Ricks, Williams & Weels (2007) theoretically assume the relationship, but do not test it empirically. Still, the need for a competent and proficient trainer to convey purchasing knowledge is obvious. An employee who considers the purchasing trainer as incompetent or irresponsive to his questions will probably not worship the

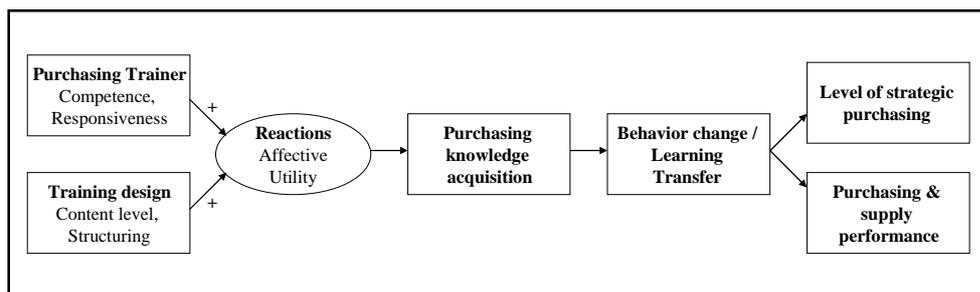
content and devote less time and effort in learning and applying the new skills. If purchasing professionals will not learn the skills and knowledge they need in their work, the training will be ineffective. Purchasing training programs therefore also have to take into account the qualification of the trainer and analyze if he is able to convey the strategic direction of the function. However, especially in purchasing, many purchasing organizations struggle to find adequate and “leading-edge purchasing trainers with new ideas” (Edwards, 2008, p.38).

Building on these arguments, we propose a positive relationship between the perception of the purchasing trainer’s competence and the reaction criteria, both affective and utility:

*H2: Purchasing trainee’s perception of the competence of the purchasing trainer will be positively related to affective and utility reactions.*

The conceptual model of our research is presented in the following figure 3. We propose that the perception of the purchasing training design and purchasing trainer directly influences the reaction criteria (both affective and utility). In addition, we assume that reaction criteria are positively related to knowledge and skills acquisition, which is transferred to the work environment and results in organizational-level outcomes (e. g. strategic purchasing, purchasing and supply performance). It is important to keep in mind that we do not test for the organizational-level outcomes. However we use the model to understand the underlying mechanisms.

**Figure 3: Simplified model of purchasing training influence factors**



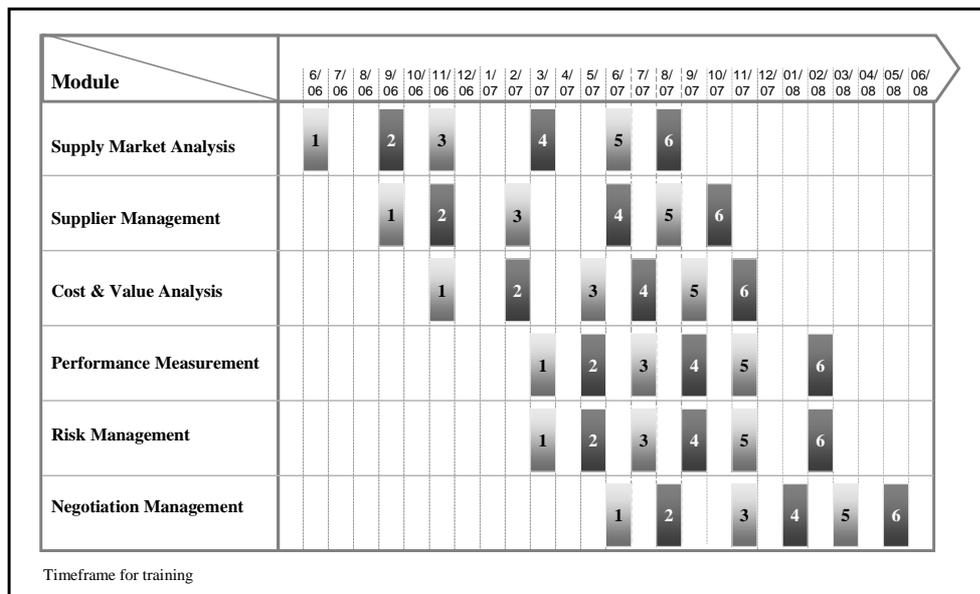
Simplified model of purchasing evaluation

### 3. RESEARCH METHOD AND CASE DESCRIPTION

#### 3.1 Theoretical sampling

This article is based on a longitudinal single case study conducted between June 2006 and June 2008. The study took place at a manufacturing company which heavily invested into the field of purchasing training. The company will be named *Building* for the purpose of this paper. As the purchasing organization was undergoing strategic changes, the purchasing courses were designed to convey strategic purchasing knowledge and to support the transition to a more strategic direction. A total of 85 purchasing professionals participated in the training courses which were organized based on the organizational needs by an external training provider specialized in purchasing training. The training courses were specifically designed for the manufacturing company and intended to build upon each other. Each purchasing professional was belonging to a group and participated with the group six different training courses. The timeframe for the courses is depicted in the following figure 4.

**Figure 4: Timeframe of the purchasing trainings**



All courses were compulsory to every purchasing professional and part of an overall training initiative. The courses were designed with regards to the organizational needs of the organization. Instructional methods involved therefore internal knowledge about purchasing processes of the company, best practices from other industries, combined with role-plays, group and individual presentations and case studies. All participants came from different business units in order to improve the purchasing network within the company. Data was collected from all purchasing professionals who attended the training courses based on evaluation sheets.

Similar to Santos & Stuart (2003), we used a multi-method approach and combined qualitative and quantitative research methods. At the qualitative level, 10 lengthy semi-structured interviews were carried out Buildings head office with purchasing professionals and purchasing directors to investigate the transfer or learning after the training program. In addition, every participant received a questionnaire after the training to gather information about the satisfaction with the training. Each questionnaire contained questions such as: what did you particularly like/dislike about the training? What will you change in your work as a result of the training? All questionnaires were directly distributed to the individual after each training course had taken placed and were filled out anonymously, thereby guaranteeing data security. A total of 357 usable replies were received, an overall response rate of 98 percent.

### 3.2 Background and training courses

As mentioned before the organization offered six different training courses to its purchasing professionals. The different courses, learning goals and learning contents are displayed in the following figure 5.

**Figure 5: Purchasing training, learning goals and learning contents**

<b>Purchasing training</b> Learning goal	<b>Learning contents</b>
<b>1. Supply market analysis</b> „Purchasing professionals shall understand how purchasing can contribute to the overall competitive advantage and how the business strategy influences the purchasing strategy. In addition, purchasing professionals are able to conduct and understand a supply market analysis, to evaluate supply market forces and to develop different sourcing strategies.“	<ul style="list-style-type: none"> <li>• Types of strategies                             <ul style="list-style-type: none"> <li>• Corporate strategy, Business unit strategy, Strategic programs</li> </ul> </li> <li>• Structure of supply market analysis                             <ul style="list-style-type: none"> <li>• A 9-step approach, Clustering supply market according to the needs</li> </ul> </li> <li>• Information sources of supply market analysis                             <ul style="list-style-type: none"> <li>• Necessary information to develop the fact base, Internal and external information sources, Thinking „Outside-In“</li> </ul> </li> <li>• Position of supply market segmentation                             <ul style="list-style-type: none"> <li>• Objective of supply market segmentation, Context of market segmentation</li> </ul> </li> <li>• Identification of supply market forces                             <ul style="list-style-type: none"> <li>• Possibilities and threads, Evaluating supply market entrants, buyers, rivalry, substitutes and suppliers</li> </ul> </li> <li>• Implications for sourcing strategy and sourcing approaches                             <ul style="list-style-type: none"> <li>• Developing material group strategy, Sourcing strategy development</li> </ul> </li> </ul>
<b>2. Supplier management</b> “Purchasing professionals learn how to conduct a comprehensive supplier evaluation and selection as well as how to manage long-term strategic supplier relationships.”	<ul style="list-style-type: none"> <li>• Supplier evaluation                             <ul style="list-style-type: none"> <li>• Supplier evaluation as prerequisite for supplier relationship management</li> <li>• Supplier evaluation categories and methods, Case study: Supplier evaluation</li> </ul> </li> <li>• Supplier selection                             <ul style="list-style-type: none"> <li>• Supplier selection matrix, Type of contracts and framework agreements</li> </ul> </li> <li>• Strategic supplier relationship management                             <ul style="list-style-type: none"> <li>• Supplier rating, Supplier classification / The Kraljic-Matrix, Supplier development process, Supplier phasing-out</li> </ul> </li> <li>• Early supplier involvement and impact on product costs                             <ul style="list-style-type: none"> <li>• Process and product focus of early supplier involvement, Advantages and risks of early supplier involvement</li> <li>• The supplier involvement portfolio (arm’s-length, strategic, critical and routine development), Communication forms in early supplier involvement</li> </ul> </li> <li>• Supplier integration                             <ul style="list-style-type: none"> <li>• Forms of supplier integration</li> </ul> </li> <li>• Quality system review as part of continuous improvement                             <ul style="list-style-type: none"> <li>• QSR History, QSR process steps</li> </ul> </li> </ul>
<b>3. Cost &amp; value analysis</b> “Purchasing professionals shall understand the importance of cross-functional cooperation and know about the basic principles of cost and price structure analysis.“	<ul style="list-style-type: none"> <li>• Cross-functional cooperation as necessary requirement for successful strategic cost management</li> <li>• Value-analysis                             <ul style="list-style-type: none"> <li>• Basic principles for successful value-analysis, Approach of value-analysis</li> <li>• Functional perspective of value-analysis</li> </ul> </li> <li>• Target costing                             <ul style="list-style-type: none"> <li>• Product cost versus target cost, Target costing procedure</li> </ul> </li> <li>• Total cost of ownership                             <ul style="list-style-type: none"> <li>• Total cost of ownership compared to manufacturing and inhouse-costs</li> <li>• Origin of total cost of ownership, Cost elements of total cost of ownership</li> </ul> </li> </ul>
<b>4. Performance management</b> “Purchasing professionals learn to determine supply performance measurement.”	<ul style="list-style-type: none"> <li>• Supply performance measurement                             <ul style="list-style-type: none"> <li>• Key performance indicators</li> </ul> </li> <li>• Supply Balanced Scorecard                             <ul style="list-style-type: none"> <li>• Overall objective of the Balanced Scorecard, Perspectives of the balanced scorecard, Breakdown of the Balanced Scorecard</li> </ul> </li> </ul>
<b>5. Risk management</b> “Purchasing professionals learn how to assess supply risks as well as to determine supply performance measurement.”	<ul style="list-style-type: none"> <li>• Supply risk management                             <ul style="list-style-type: none"> <li>• Consequences of inadequate supply risk management, Types and sources of supply risks in global supply chains, Quality problems and supplier insolvency</li> </ul> </li> <li>• Management of supply risks                             <ul style="list-style-type: none"> <li>• Trade-offs between cost, service and time, Supply Risk assessment</li> </ul> </li> </ul>
<b>6. Negotiation management</b> “Purchasing professionals learn to apply different negotiation techniques as well as to adapt different negotiation techniques to context of the actual situation.”	<ul style="list-style-type: none"> <li>• Preparing a negotiation                             <ul style="list-style-type: none"> <li>• Different roles in negotiations, Determination of objectives, needs and interests</li> <li>• The Harvard-Concept of successfully negotiating, Reflecting the own negotiation style</li> </ul> </li> <li>• Questioning and answering techniques                             <ul style="list-style-type: none"> <li>• Different types of questions, Responding to objectives</li> </ul> </li> <li>• Negotiation strategies                             <ul style="list-style-type: none"> <li>• Soft, tough and problem-solving strategies, Communication in conflict situations</li> <li>• Negotiation strategies according to the purchasing matrix</li> </ul> </li> </ul>

The purchasing concept comprises six different trainings. Each training course is conducted on two subsequent days. The first course “supply market analysis” has the goal to convey the understanding how purchasing can contribute to the overall organizational success. The second training course “supplier management” has the goal to better evaluate, select and develop strategic suppliers. The third training course “cost & value analysis” looks at the techniques of price and cost structure. The fourth training course “performance management” has the goal evaluate the performance of suppliers as well as to learn about supply risk management. After the module, purchasing professionals are able to assess supply risks as well as to determine supply performance measurement. The fifth training course “risk management” looks at the topic of risk management. Since global supply chains are more vulnerable to supply risk, the concept of supply risk has achieved increased intention. The management of supply risks is an important issue and can be

targeted through a supply risk assessment tool (Harland, Brenchley & Walker, 2003). Finally, the last training course “negotiation management” intensifies solid negotiation and communication skills.

### 3.3 Measures

Affective and utility reaction was measured using a one-item scale. Utility reaction was measured by asking “how do you judge the practical use – personal and professional feasibility – of this training course?” Affective reaction was measured by asking “how satisfied are you overall with the training course in terms of general satisfaction, pedagogic methodologies and overall functioning of the training?” Respondents were asked to describe the reactions on a scale from 1 (most positive value) to 4 (most negative value). Though the use of one-item scales has traditionally been avoided in literature, in concepts such as job satisfaction, they use of single-item scales has been proved to be as effective and reliable as multiple-item scores (Sahinidis & Bouris, 2007).

The perception of the trainer competence was measured using a three-item four-point scale, based on Ricks, Williams & Weeds (2007) work, with responses ranging from 1 (most positive value) to 4 (most negative value). The three items included “the trainer is very competent in the field of purchasing and supply management”, “the trainer shows a high responsiveness to the participants by answering and posing questions” and “the trainer provides many practical examples and show a high practice orientation”.

The perception of the training design was measured using a three-item four-point scale, based on Baldwin & Ford’s (1988) and Holton, Reid & Ruona’s (2000) work, with responses ranging from 1 (most positive value) to 4 (most negative value). The three items included “the content of the training is designed to meet my professional needs”, “the training is in such a way structured and set-up that it matches my job requirements” and “the presentations and course documents are complement to my daily work and include practical examples which are related to my job”.

In order to assess the extent to which the variables represent a separate construct, we conducted an explanatory factor analysis. The principal component analysis, followed by the varimax rotation was performed on six items. As depicted in table 1, two components were deduced from six items and these components accounted for 65.65 per cent of the variance in the items.

**Table 1: Varimax rotated factor loadings**

**Rotated Component Matrix<sup>a</sup>**

	Component	
	1	2
Structuring / Set-up	,336	<b><u>.746</u></b>
Presentations and Course documents	,132	<b><u>.879</u></b>
Responsiveness to Participants	<b><u>.755</u></b>	,145
Content (Level and Up-to-date)	<b><u>.680</u></b>	,416
Professional Competence	<b><u>.801</u></b>	,133
Practice Orientation	<b><u>.706</u></b>	,307

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

Overall, the results of the principal component analysis were consistent with the extant literature. The first principal component (two items) was labeled “training design”, the second principal

component (four items) was labeled “purchasing trainer”. We used the two factors to test the aforementioned hypotheses.

### 3.4 Analysis and results

To determine the extent to which training design and the perception of the trainer influence the affective and utility reaction we conducted a hierarchical regression analysis.

Our preliminary results indicate that the structuring of training courses and the content level predict the affective and utility reaction to purchasing trainings. In addition, the responsiveness of purchasing trainers to participant influences the affective reaction criteria and impacts the overall satisfaction with the training. Purchasing professionals worship training contents which is designed to their professional work environment. As pointed out by one purchasing professional: “The training documents first focused on theoretical background and then intensified purchasing knowledge by applying several case studies.” The following table shows our preliminary results for the hierarchical regression analysis.

**Table 2: Hierarchical analysis for affective and utility measures**

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.081	.060		-1,347	,179
	Structuring / Set-up	,248	,034	<b>.269</b>	7,341	,000
	Presentations and Course documents	,098	,027	,125	3,629	,000
	Responsiveness to Participants	,208	,034	<b>.217</b>	6,063	,000
	Content (Level and Up-to-date)	,240	,034	<b>.282</b>	7,055	,000
	Professional Competence	,113	,041	,102	2,741	,006
	Practice Orientation	,122	,032	,142	3,762	,000

a. Dependent Variable: Affective Reaction

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	,342	,092		3,719	,000
	Structuring / Set-up	,202	,052	<b>.202</b>	3,919	,000
	Presentations and Course documents	,093	,041	,109	2,242	,026
	Responsiveness to Participants	,138	,052	,132	2,633	,009
	Content (Level and Up-to-date)	,170	,052	<b>.184</b>	3,270	,001
	Professional Competence	,041	,063	,034	,655	,513
	Practice Orientation	,180	,050	,193	3,638	,000

a. Dependent Variable: Utility Reaction

## 4. CONCLUSION AND RESEARCH LIMITATIONS

Purchasing professional need to display “new” skills and competencies in order to effectively execute the strategic implications of the function. Purchasing training is regarded as potential way to increase the individual competencies of purchasing professionals and to support the evolution of purchasing to a strategic function. Yet, the influence factors of purchasing training on the individual-

outcome level have not been targeted in literature (Handfield & Giunipero, 2004). Based on this background we concentrated our research on the question what impacts purchasing training on the individual-level outcomes.

Based on a careful literature review we argued that apart from the individual motivation, the training design and trainer play a major role in influencing individual-level outcomes of training. We tested our hypothesis at a multinational company that introduced a thorough training program in purchasing. Our preliminary results show that both trainer and training design positively influence reaction criteria. In addition, especially the structuring and content of the program influence the reaction to the training. Based on our research, purchasing organizations can adapt their purchasing trainings with up-to-date knowledge. Further research is currently undertaken to gain more empirical insights concerning the model presented and to analyze how different trainers impact the perception of our influence criteria. In addition, the qualitative analysis of the evaluation sheets identifies the transfer to the work environment.

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