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Purchasing knowing-doing gaps and the influence of incentives from a buyer-internal customer relationship perspective

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Content

Acknowledgements

After working together on several purchasing related business assignments, Dirk Jan Kamann suggested in 2001 that I would be better off with a PhD than an MBA from a highly ranked fancy business school. He and later Eva Karasek were right. So, my thanks go first of all to Dirk Jan aka Caveman. Sorry it took me so long - including the re-start in 2011 - to finish this 'unconventional' dissertation. Luckily the subject 'behaviour, knowing-doing gaps and incentives' is still relevant.

It was by chance that I got into Purchasing somewhere at the end of 1995. Being a consultant in the field of operations management and logistics, I was asked to become familiar with the purchasing and supply management discipline. After a while, I started to see it as an opportunity rather than the end of a kind of successful career. I read everything I could find on the subject and concluded that Purchasing was in a way perfectly suited to me, including with regard to the situation in the consultancy firm. Purchasing and supply management was a domain that was not claimed by anyone in the firm so I did not have to target my relatively poor social skills on the internal organization. Purchasing and supply management was, and still is, a domain focussed on the 'outside' of organizations. With stunning views on suppliers, with enormous commercial and financial impacts, it provides the opportunity (or obligation) to influence the insights of other employees about the goods and services they need. There was plenty of space in the late 1990s to develop models and other conceptual underpinnings. Purchasing and supply management was, in those days, in my practitioner/consultant eyes, short of models and ideas. That was then.

Seventeen years later, and after writing this dissertation, I think my then conviction that I was pretty familiar with all aspects of purchasing and supply management were perhaps a bit foolish or at least a little premature. There was then, and even more so today, so much knowledge about this beautiful purchasing and supply management discipline that one could spend a whole life reading and learning and still find aspects that demand attention from curious and creative minds. I have learned a lot along this academic journey, yet there is still a lot to learn. For my dissertation, I had to learn a lot of new things. Simple things like how to search in the EBSCOhost database and how to use Refworks, and more complicated things like how to plan and carry out an economic experiment and run a proper statistical analysis in SPSS. I was fortunate that next to books and papers there were always people – my new academic friends - that were willing and able to help. Thank you for reducing my own academic knowing-doing gaps.

The purchasing knowing-doing gap is what this journey has been all about. As a business consultant, I observed that buyers do not always use the available purchasing knowledge in their purchasing practices. The benchmark studies I performed at Berenschot (1997-2001) and later at DPA Supply Chain (2008-2010) confirmed that there were indeed substantial differences between actual buying behaviour and the stated ideal situation.

My research was delayed for a few years due to family and business commitments; I got married, two children were born and I started my first company.

In 2011, I made a new start with my research ambitions. I blocked time in my business agenda, developed a plan and presented that to prof. dr. Jack van der Veen and of course to prof. dr. Dirk Jan Kamann. In Jack I found a specialist on human capital issues in supply chain research. I remember one of the first reactions of Jack: “what is your definition of purchasing knowing-doing gaps? We do not go anywhere without a proper set of definitions and relationships between them”. The definitions came, the logic of the research followed and the rest is history. Jack, many thanks for all the time you spent in bringing structure and logic to this dissertation.

As already mentioned, a lot of people and organizations helped, too many to mention them all by name. Thank you, case companies and participants of the experiments. Thanks go also to all the former business colleagues that inspired me with their PhDs: Daantje Derks, Jeroen Meijer, Marion Kempeners, Steven ten Have, Wouter ten Have, Rob Zuijderhoudt and Teun Hardjono. Deservedly to colleagues Rina Koning and Arthur de Boer from the research school SOM of the University of Groningen for helping me out with support on IT systems and academic procedures. Thanks to the WION and IPSERA participants in the discussions and the fun and drinks all over the world and in Lunteren. Special thanks to Erik, Eline, Jenny, Nadine and Regien.

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The final words in these acknowledgements are of course for the Boodie family. Ursula, Ella and Oscar thank you for your support and patience. My excuses for all the time I was not there physically or, perhaps even worse, when I was there physically but not mentally. I hereby promise to improve in this respect!

Max Boodie,

Amsterdam, May 2018.

Chapter 1

Introduction

The majority of work in this chapter has been done by the author of this dissertation. Feedback from promotors and co-promotor was implemented during several revision rounds.
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1 Introduction

This chapter starts with a personal story (1.1), followed by the research background and scope (1.2) and an elaboration on the use of the agency theory (1.3). After this the managerial and academic research perspectives (1.4), the research objective and research questions (1.5) are presented, followed by the research flow (1.6) and the methodology section (1.7). This chapter ends with an overview of the other chapters in this dissertation (1.8).

1.1 A personal story

While working as a business consultant in the field of purchasing and supply management, I noticed in the late-1990s that purchasing and supply management was gaining increasing attention from organizations, consultants and the academic world in both the private and public domains. From 1997 to 2010, I carried out various benchmark studies on 'World Class Pa' in the Netherlands and in the rest of Europe (Berenschot, 1997, 2001; DPA Supply Chain People, 2008, 2010). These benchmark studies focussed on the differences between what was actually done and what was 'World Class'. In other words, how the actual situation related to existing purchasing theory or expert opinions. These benchmark studies showed that buyers[1] do not always do what they ought to do, either in relation to their own opinions on what they should do, or what theory or expert opinions think appropriate. Like for example, selection on lowest price instead of total cost or value added, no control on the volume of the supplier base instead of managing the number and quality of the suppliers or just confronting suppliers with fixed product requirements instead of early supplier involvement in product development. These outcomes made me curious, so I wanted to know more about 'why' buyers do not always apply what they (should) know from theory, experts or even textbooks?

In 2005, I interviewed a series of ten Chief Procurement Officers with regard to purchasing strategy implementation. In the interviews, I used an analytic model that was based on a model of organizational behaviour developed by Nadler and Tushman (1980) that consultants often used for 'fixing' organizational problems. One of the assumptions of this model is that strategy implementation is influenced by so-called soft aspects such as organizational norms and culture, and harder aspects, labelled business principles, such as processes, procedures and various human resource management (HRM) mechanisms such as performance-based pay. The goal of the interviews was to determine whether this general strategy implementation model could be used when implementing a purchasing strategy. The preliminary results from the interviews showed promising insights in strategy implementation congruency barriers for purchasing. Congruent in the way that "various components of the

[1] Buyers, purchasers, purchasing professionals, purchasing managers (PMs) are terms used interchangeably although their roles as well as the responsibilities can be different from one another.

purchasing strategy are organized in harmony and in the same direction" (Ten Have, 2002, p. 179). These results were never published due to a lack of time.

It was not until 2011 that I found the time to start as an official part-time PhD candidate. Two important starting points for me were that (1) applying the established purchasing theory in essence is the 'right way', i.e. not applying it is not in the interest of the company; and (2) professional trained purchasing managers like to apply their (theoretical) knowledge into their daily work. From such assumptions, the obvious question is then: what would cause any deviations between theory or best practices and actual buying behaviour? And, being a consultant who wants to offer practical instruments: what specific actions or instruments could/should be used to bring them 'back on track'? Unfortunately, the answers to such questions were not immediately clear. Surely, the Pfeffer and Sutton book on knowing-doing gaps (Pfeffer & Sutton, 1999) was a great source, but is was general (not specific for purchasing) hence not immediately applicable and also it was more of a philosophical nature rather than providing practical (usable) instruments. In other words, it was not really helpful in answering the questions mentioned above.

Over-thinking the questions at hand, early on two main ideas came to mind. The first was that purchasing managers are frequently working for internal departments (like Operations or Marketing). Would it not be that managers in such departments (which are obviously not trained like the buyers themselves) provide orders to purchasing, who in turn are to follow such orders rather than act according to their own 'best knowledge'? This line of thinking triggered me to look especially to the interface between buyers and 'internal customers'. A second idea came from the upcoming studies on the behavioural aspects of purchasing. Could it not be that for closing any knowing-doing gaps, an organization could use HRM mechanics (e.g. performance-based pay or other incentives)? After all, it is well known that behaviour can be steered by financial and other incentives. And for organizations, providing incentives is a well-accepted and practical instrument. This idea triggered the interest in the potential of incentives to close the knowing-doing gap. As such, there were initial eight 'bodies of knowledge' that could be linked to purchasing knowing-doing gaps. Elaboration on these bodies of knowledge is given in section (1.2) in the research background and scope.

I started my PhD journey with lots of initial reading on these eight bodies of knowledge. To improve my academic skills and to activate and expand my academic network, I attended almost every IPSERA[2] conference (as far back as 2003) and since 2010 most of the annual meetings of WION, the association of Dutch purchasing and supply scholars. Although in hindsight the cause-and-effect is not always clear, it is fair to say that many of the ideas exposed in this dissertation were triggered by discussions somewhere in this network.

[2] IPSERA: International Purchasing and Supply Education and Research Association (IPSERA). IPSERA is a multidisciplinary network of academics and practitioners dedicated to the development of knowledge concerning Purchasing and Supply Management.

1.2 Research background and scope

In this subsection the eight bodies of knowledge that were briefly mentioned in the previous section will be outlined to provide the essential context, scoping and theoretical foundation for this research.

Procurement, purchasing and purchasing and supply management

There are many definitions in the area of purchasing. No agreement exists on the definition of procurement and purchasing (Van Weele, 2005). Even more definitions are there when 'purchasing and supply management' (Wynstra, 2006) is included in the area. The purchasing function encompasses the process of buying and covers activities aimed at determining specifications of the goods and services to be bought, selecting the suppliers and the negotiations that lead to a contract (Van Weele, 2005). Practitioners and academics often limit the term purchasing to the 'process' of buying: identifying the need, locating and selecting suppliers, negotiating price and other terms, and following up to ensure delivery and payment (Johnson et al., 2011). Being aware of the differences, in this thesis the terms 'purchasing' and 'purchasing and supply management' are used interchangeably to refer to the integration of related activities to effectively and efficiently provide materials and services to the organization (Leenders et al., 2010).

Impact of purchasing on firm performance

Purchasing is an increasingly important business function because organizations have focused more on their core competences (e.g. Prahalad & Hamel, 1990). In the last decades many activities were outsourced and organizations became more and more dependent on supply from outside the organization (Harland, 1996). Much has been written about the contribution of purchasing to firm performance (Baier et al., 2008; Chen et al., 2004; Ellram, et al., 2002). Clearly, purchasing is both an important business function and an important scientific discipline (Chen et al., 2004; Gadde & Snehota, 2000; Handfield, 1993). Research on knowledge and skills can be useful to maximize purchasing's contribution to the organization (Guinipero et al., 2007). In line with Pagell (Pagell et al., 1996), the starting point for this dissertation is that the key issue is not only what knowledge or skills purchasing professionals have, but how organizations can ensure that buyers actually use the available knowledge and skills. Clearly, a first question thereto would be: How can this be monitored and measured? Performance 'measurement' and performance 'management' systems can make a major contribution (Perkins & Gunasekaran, 1998; Monczka et al., 1979; Van Weele, 2004). Franco Santos et al. (2007) evaluated several performance measurement systems and concluded that rewards play an important role. Although rewards or monetary incentives seem to play an important role, they seem to be largely overlooked within the field of purchasing and supply management research (Pagell et al., 1996).

Financial and non-financial incentives

There are many definitions of incentives. They are defined as a situational condition that can motivate employees because of their individual structure of needs with regard to a certain performance level of behaviour within the context of an organization (Rosenstiel, 1999; Bau & Dowling, 2007). Incentives are used to stimulate employees to do what the organization regards as desirable and reduce doing what is considered to be less desirable (e.g. Gerhart & Milkovich, 1990; Huselid, 1995; Hausman & Le Grant, 1999; Newman & Milkovich, 1990). Incentives refer to inducements offered in advance with the aim of increasing performance while rewards are typically given after successful performance (Patten, 1977). Although in this way formally speaking the terms incentive and reward are different, clearly these are very much related, e.g. a 'promised reward' makes an incentive. For this reason, the two terms will be used interchangeably. This is consistent with literature on organizational reward systems (e.g. Devanna et al., 1981), compensation systems (e.g. Milkovich & Newman, 2005) and as proposed by DeMatteo et al., (1998) and more recent Garbers and Konradt (2013). We adopt the definition of incentives by Milkovich (1990) that incentives are financial or non-financial inducements offered to influence employees' future behaviour.

There is a significant stream of human resource management-related publications providing research that incentives (financial and non-financial) can influence behaviour (e.g. Beer & Cannon, 2004; Bloom & Milkovich, 1995; Frye et al., 2003; Gerhart & Milkovich, 1990; Huselid, 1995; Lindbeck, 1997; Newman & Milkovich, 1990; Rosenstiel, 1975. There is also a significant stream of research indicating that financial incentives do not have a 'positive' effect on behaviour and that it is more important to enhance intrinsic motivation then extrinsic motivation by financial incentives (Achtziger et al., 2014; Ariely et al., 2009). Financial incentives can be differentiated in base pay, performance-based pay and long-term incentives (Milkovich, 1990; Milkovich & Newman, 2005). Indeed, for some people in some situations, higher pay does not seem to result in enhanced performance (Ariely & Gneezy, 2009). There is evidence that financial incentives can have a crowding-out effect on intrinsic motivation (Gneezy & Rustichini, 2000; Ariely et al., 2009; Frey & Jegen, 2001).). The crowding-out effect suggests that external intervention via monetary incentives may undermine intrinsic motivation. Here motivation is "an energizing force that stimulates arousal, direction and persistence of behaviour" (Mitchel, 1982). The debate between 'proponents' and 'opponents' with regard to the ability of incentives to influence behaviour continues (Cerasoli et al., 2014; Steigenberger, 2013; Subramony, 2009). The common sense idea that incentives always have a positive effect in reality does not always hold (i.e. the common sense idea is in fact sometimes totally wrong). It is also too simple to conclude that higher incentives lead to higher performance or motivation (Cerasoli et al., 2014) or that incentives lead to more creativity (Ariely et al., 2009). Research clearly indicates that the relation between incentives and performance is far from straightforward (Gneezy et al., 2011). Yet the exact relation is not yet established (e.g. questions like "When do financial incentives have the 'expected' results and when not" and "What other incentives do have the 'desired' results" are not clearly answered).

Research on the influence of financial and non-financial incentives in purchasing seems scarce (Pagell, et al., 1996), despite encouragement (Scarbrough, 2000) to incorporate HRM in purchasing research. One might also wonder why there is not much research in this area. Financial and non-financial incentives could bridge the gap between purchasing strategy and daily reality (Knoppen & Sáenz, 2015). Like MacLoed & Parent (1999) we argue that it is 'necessary' to increase the differentiation in financial and non-financial incentives for specific jobs. One possible reason for the 'under-developed' research attention in this area might be that it lies on the interface between at least two areas, namely HRM and purchasing. And although multidisciplinary research is potentially quite relevant and rich, it is not always favoured by the current research culture (e.g. Birkinshaw et al.,2014; Antonakis, 2017).

Incentives can be based on individual or team performance (Han et al., 2015). In most companies, purchasing activities appear to be organized in close proximity with the internal customers (e.g. Eglyst et al., 2008). In this dissertation, we follow Trent (1998), in regarding individual and collective efforts of team members as critical to the success of the team. Our research does not include collective team incentive systems, although there is interesting general – not purchasing-specific - research available on team incentives (e.g. Danilov et al., 2013; Conrads et al., 2013).

The perspective of the social negotiated order

Establishing a purchasing function that contributes to firm performance requires input from the entire organization, not just from the purchasing managers (Cousins & Spekman, 2003). A relevant question is therefore how purchasing interacts with other functions, i.e. what is the (social) organizational perspective for purchasing activities in the firm? Eden (1992) describes an organization in terms of its task with respect to the environment, and its members in terms of the roles they are expected to enact. Eden (1992) adopts the view of Silverman (1970) that an organization can be seen as "the interaction of motivated people attempting to resolve their own problems that can be regarded as a source of meanings through members define their actions and make sense of the actions of others". Policies and rules such as procedures and also financial incentives serve to set the limits and some of the direction of the adopted meanings or as Eden puts it, the subtly 'negotiated order'. Negotiated order is an approach in sociology that is interested in how meaning is created and maintained in organizations; for instance, the meaning on the way the interaction between buyers and their internal customers is done. Negotiated order approaches have - just like this research - a particular focus on the human factor; more specific on human interactions.

Conventional thinking about purchasing and supply management is undergoing a great deal of change by focussing on the human factor (Carter & Ellram, 2003). For instance, on the motivation of buyers (Pagell et al., 1996; Trent, 1998) or on purchasing talent (Reinecke et al., 2007). Behavioural-oriented research in purchasing and supply management is seen as a great opportunity for the human factor in the purchasing and supply management research agenda (e.g. Carter & Ellram, 2003; Schoenherr et al., 2012; Van der Veen, 2013, Welling & Kamann, 2001). Several purchasing and supply

management scholars have focused on behavioural aspects of purchasing (Schoenherr et al., 2012; Wynstra & Knight, 2004; Wynstra, 2010) with particular attention given to buyer-supplier research (Bichon et al., 2010; Cousins & Spekman, 2003; Harland, 1996; Hauser et al., 1996; Kamann et al., 2006; Revilla et al., 2013; Walker et al., 2013).

Buyer-internal customer relations

Many purchasing departments primarily focus on the external arena (Bichon et al., 2010). Also the stream of buyer – supplier research is growing rapidly in purchasing-related dissertations (Das & Handfield, 1997) and articles published in highly ranked purchasing and supply journals such as the Journal of Purchasing and Supply Management (Wynstra, 2010). In the latter, the 'internal arena' – the purchasing organization – represents only 8% of the topics. The attention for buyer-supplier research is understandable given the fact that organizations have come to recognize the important role of purchasing in importing value from suppliers into organizations. That is probably also why the vast majority of the earlier mentioned performance measurement and performance management studies focus on suppliers' performance rather than on the company's internal processes (Yang, 2010, Humphreys et al., 2008). Indeed, Wynstra (2010) found that supplier relationship is the most popular subject and featured in 25% of all papers published in The Journal of Purchasing & Supply Management over a period of 15 years. A meta-analysis of doctoral dissertations in purchasing (Das & Handfield, 1997) showed a focus on buyer–supplier relationships with economic and social issues (collaboration, partnerships and strategic alliances) between buyers and suppliers being investigated.

Despite the fact that the main focus in the purchasing field lies in buyer- supplier relationships, we consider internal relationships to be at least equally important. The buyer's ability to create internal customer satisfaction is essential for service to external customers (Finn et al., 1996; Hallowell et al., 1996; Mohr-Jackson, 1991; Pfau et al., 1991) and may create additional competitive advantage (Stanley & Wisner, 2001). Also, several studies on performance management and measurement (e.g Caniato et al., 2012; Carter, 2005; Kumar et al., 2005; Rafele, 2004) have been subjected to purchasing's internal processes. Buyer's attending to the internal customer is also essential for reducing the internal barriers necessary for the transformation of buying from a clerical to a more strategic purchasing function (Cousins & Spekman, 2003). A part of the buyer's task is to satisfy internal organizational needs (Das & Handfield, 1997). Several scholars have presented research opportunities for inter-functional topics, for example between the buyer and the internal budget holder on price and quality, and other topics that reflect real-life scenarios (e.g. Das & Handfield, 1997; Schoenherr et al., 2012). In line with other scholars (e.g. Wisner & Stanley, 1999; Schiele, 2006), we view the internal relationships of buyers as a critical value driver (Cousins et al., 2008) and therefore consider internal clients as an important stakeholder group (Kern et al., 2011; Van Poucke et al., 2014) that have an essential role in ensuring the effectiveness of purchasing (Tassabehji & Moorhouse, 2008).

In this dissertation we limit the purchasing context, to one in which both the purchasing manager and all other colleagues (or internal customers) are involved (cf. Bakker, 2005).

Different perspectives on gaps

Turning knowledge into action is not a purchasing-specific problem and has been described from various perspectives. Practitioners also fail to adopt the findings of research in fields such as medicine (Dennis & Langley, 2002), supply chain management (e.g. Van der Veen, 2013), human resources and management (e.g. Rynes et al., 2002; Sanders et al., 2008). The gap between theory and practice is often framed as a knowledge transfer problem (Van de Ven & Johnson, 2006). Lombardozzi (2012) examined the ability of managers to apply management knowledge to real workplace situations and indicated that 32% of the managers failed to apply knowledge. In the field of strategic management Zeleny (2008) concluded that efficiency and effectiveness are not generally sufficient; not only doing the things right but also doing the right things – are emerging as major components of corporate success. There is a growing interest in the use of cognitive, behavioural and organizational theories to understand barriers to implementation (Davies et al., 2010). Ajzen & Fishbein (1970) formulated the theory of reasoned action and planned behaviour (Ajzen, 1991) when trying to estimate the gap between attitude and behaviour. They state that that logic (knowledge) is only of limited use and that peer pressure or professional norms (see Subsection 1.1.2) is far more important.

Scholars like Van Aken (2004) and Andriessen (2004) see knowledge that is produced and not applied in practice as not sufficiently relevant. Van Aken (2004) and Andriessen (2004) see this as a serious utilization problem for academic management research in general, and they state that the relevance problem can be mitigated by changing the way researchers research; more explorative, solution focussed and heuristic without losing the rigour.

Purchasing managers do not always practice what they preach. Although they may know how certain tools of analysis should be used, how certain strategies should be followed, they may not always do so in real life (Kamann & Bakker, 2004; Bakker & Kamann, 2007). Pfeffer and Sutton (1999) argue that, although in itself, knowing (i.e., the quality and depth of insights) can be the cause of differences in organizational performance, the impact of knowing-doing gaps is 'responsible for a much larger source of variation in performance'. They describe how companies experience difficulties in translating knowledge into practice. In this research, we adopt the line of reasoning of Pfeffer & Sutton (1999) that the availability of knowledge is often not the main issue. The issue is more about the inability of organization to turn purchasing knowledge into action (Pagell et al., 1996). The explicit assumptions made are: it is not the lack of awareness of the theory (full knowledge is assumed), it is not the potential flaws in the theory (theory is assumed to be applicable), it is not inability to use the theory (it is assumed to be usable).

The starting point (that needs to be challenged), is that there is a 'purchasing knowing-doing gap' even though purchasing professionals are perfectly well aware of the theory and know how to apply it, but somehow in reality, do not actually apply it.

Human Resource Management (HRM)

Although in nature quite different, the human resource function and purchasing function have some similarities; for instance HRM is charged with finding the best employees for the job, where purchasing is charged with finding the best suppliers (Pagell et al., 1996). Like the purchasing and supply domain (Wynstra, 2006), the HRM domain is often seen as broad and apparently difficult to define (Bolweg, 2012) and both domains do claim to have a significant impact on firm performance (for purchasing see for instance Baier et al., 2008; Chen et al., 2004, for HRM see for instance Huselid, 1995; Boselie et al., 2005; Subramony, 2009). When trying to explain what HRM is all about, practitioners and scholars often refer to HRM-processes like selection, development and appraisal as are they described in for instance the Michigan Model (Devanna et al., 1981) or the Harvard Model (Gordon, 1985). Incentives, in particular financial incentives, are important instruments in both the Mitchigan and Harvard models but also in HRM concepts like: 'HRM bundles' (Subramony, 2009) and 'high performance work systems' (e.g. Huselid, 1995).

The use of grounded theory and agency theory

Glanz and Bishop (2010), but also others including Davies et al., (2010), designed instruments to classify the use of theory. Glanz and Bishop distinguish four levels: 'informed by theory', 'applied theory, 'tested theory' and 'building or creating theory'. Both sets of authors conclude that theory has most often been used to inform the choice and design of interventions in which only some of the theoretical constructs are used. In this research agency theory and grounded theory are mainly used to inform the choice and design of interventions. Researchers in the purchasing and supply management field use a diverse range of theories (Van Weele & Van Raaij, 2014). Some scholars argue that not every 'theory' is a 'real' theory (Chicksand, 2012).

From our research perspectives (see 1.7.1), grounded theory appeared the most promising candidates for our explorative research. Grounded theory is chosen since it is a systematic methodology applied in the social sciences that involves the construction of theory through the analysis of data. Grounded theory fits well with the interpretivist approach (Goulding, 1998) since its emphasis is on multiple realities, the interaction between the researcher and the phenomenon under study and the belief that causes and effects cannot be separated (Brown, 2002). In line with grounded theory we started with just questions and our explorative way of qualitative data collection. We also emphasised on a step by step discovery of what bodies of knowledge, concepts and hypotheses were relevant for our research. And we elaborated

on a number of existing theories for instance on incentives and buyer-supplier relationships hand in hand with verifying it.

Agency theory concerns the relationship between two parties in which one party (the principle) delegates work to another party (the agent), who then performs the work (Eisenhart, 1989; Jensen & Mecklin, 1976). There are three principle-agent perspectives that can be taken into account: 'internal customer - purchaser', 'general manager – purchaser' and 'buyer - supplier'. The scope for this research is the 'purchaser - internal customer' perspective. Incentives are core instruments within the agency theory and the agency theory is widely used in incentive-oriented research (Delery & Doty, 1996, Holstrom, 1979). But also the fact that the managerial problem of this dissertation is the question "what can managers do", assumes that is the managers (i.e. principles) who should somehow steer the purchasers (agents). Other advantages of agency theory for our research are that it is embedded in a 'real' theory, the economic theory (Van Weele & Van Raay, 2014). It is also the basis for many economic-decision experiments (Keser & Willinger, 2007) and has predictive capabilities (Amundson, 1998). Agency theory addresses the challenges we face in our purchasing-related research with a focus on the internal customer and the buyer in terms of: (1) conflicting goals, (2) information asymmetry, (3) risk allocation and (4) moral hazard.

We only used existing theoretical constructs from the grounded theory and the agency theory (Glanz & Bishop, 2010; Davies, et al., 2010), since the objective of this research is not to extend or revise these theories as such.

In the next subsection (1.3), we elaborate on the agency theory since it has emerged as a leading theory in both purchasing research and in research on incentives.

1.3 Agency theory elaboration

In this section we start with an introduction (1.3.1), followed with the use of agency theory in purchasing research (1.3.2). This section ends with the use of agency theory in research on incentives (1.3.3).

1.3.1 Introduction

We already mentioned briefly that although there seems to be little understanding about what a real theory is (Chicksand, 2012), agency theory is questioned to be one of the 'grand theories' (Eisenhardt, 1989). In this research, agency theory is used as a basis for elaboration, rather than for testing the theory (Popper, 1959) or developing completely new theory (Glaser & Strauss, 1971). Theory elaboration refers to refining a theory through empirical analysis in order to specify the circumstances in which it does or does not offer potential explanations (Walker & Cohen, 1985; Voss et al., 2002). In this research we use theory elaboration (Vaughan, 1992; Lee, 1999; Gilbert, 2005) to

extend agency theory on the assumption that individuals – in our case PMs and ICs- are bounded rationally.

Agency theory was originally conceptualized by Jensen and Meckling (1976) and analyses the relationship that develops in an economic exchange when an individual (the principal) concedes authority to another (the agent) to act in his or her name, such that the wealth of the principal is benefited by decisions made by the agent. Eisenhart (1989) introduced the theory to the field of organizational behaviour (Wiseman et al., 1998). Agency theory's basic model is two parties engaged in a hierarchical relationship (Arrington & Francis, 1989). One party, the principal, gives the other party, the agent, authority to act on her or his behalf (Fox, 1984).

Eisenhart (1989) saw agency theory as an important yet controversial theory. Important for its potential as a foundation for a powerful theory of organizations (Jensen, 1983) and controversial given that its detractors called it "trivial, dehumanizing, and even dangerous" (Perrow, 1986). The classic interpretation of agency theory is what Eisenhart (1989) and Jensen (1983) called the *normative approach*, which contrasts with the more recent *positive approach* where there is less attention to risk and more for the context (Bloom & Milkovich, 1995). Although the epistemological basis of the two differs, they can both play an important role in obtaining insights into the principal–agent relationship (Wiseman et al., 2012). We focus on the more context-oriented positive agency view that is often used in economics-based research on the principal–agent relationship, particularly when the focus is on incentives.

Agency theory has received a number of criticisms and can benefit from being complemented by other theoretical frameworks such as stakeholder theory. Suggestions have been made to make the theory more flexible and for instance, that agents should not always be assumed to exhibit opportunistic behaviour. At the very least, there is a need to build models that reflect more complex interactions between principals and agents (Wiseman et al., 2012). Although risk is an important aspect of the positive approach to agent theory, it is often too restrictive and naïve, preventing a fuller understanding between agents and principals (Wiseman & Gomez-Meija, 1998). In response, these authors developed a behaviour agency model by integrating complementary views on risk from other theoretical perspectives such as prospect theory. This behaviour agency model still has shortcomings, even in the eyes of the developers, but it nevertheless contributes to the ongoing development of agency theory by providing another stimulus for extending its behavioural aspects. The development of the behavioural aspects of the agency theory continues, with recent research (Pepper & Gore, 2015) encouraging other researchers to join in finding a better understanding of the micro-foundations of agency theory.

1.3.2 The use of the agency theory in purchasing research

Agency theory explicitly addresses under which contractual arrangements the relationship between a principal and an agent operates most efficiently. It can be used

to look at both the explicit (legal) and implicit (social) aspects of the contract (Eisenhardt, 1989). It is concerned with solving measurement and motivation problems that occur when principals and agents have differing goals and desires and it is infeasible for the principal to verify the agent's performance. In a purchasing context the buyer can be the principle (Situation I) or agent (Situation II) depending from the point of view. In Situation I, the buyer is the principle and the supplier the agent (Zsidisin & Ellram, 2003; Choi & Liker, 1995). In Situation II, the buyer is the agent and the internal customer is the principle. Van der Meulen (2003) describes this as the intermediation role.

Underlying the agency theory are specific assumptions about human nature (self-interest, bounded rationality, risk aversion), information and organizations (goal conflict among members) (Eisenhardt, 1989). The theory is well established in the management literature and also in purchasing literature as far as the principle is buyer and the internal customer the agent (Zsidisin & Ellram, 2003, Heide, 2003; Heide & John, 1992).

The principal-agency relationship is governed by a contract that the parties either propose or accept and that specifies what the principal expects from the agent and what the agent will receive in return (Tate et al., 2011). The contract can be a written agreement (e.g. Lumineau & Malhotra, 2011) with the supplier, or an internal service level agreement or compensation schedule (e.g. Parks & Conlon, 1990). All contracts are used to overcome problems that arise from the assumed self-interest and conflicting goals of each party and agents' risk averseness, assumed to be greater than principals' (Baiman, 1990; Eisenhardt, 1989).

With regard to human nature, agency theory's assumption of self-interest relates to the fact that in case of unanticipated events, actors will each behave in the best interest of their companies (Logan, 2000), or perhaps functional area (Tate et al., 2011). For Situation II purchasing, the principal (IC) might be unable to effectively verify agent (buyer) performance (Eisenhardt, 1989). Furthermore, other ICs can have different expectations of the Agent. This complicates goal congruence among all parties in the principal agency relationships of buyers and their internal customers. As a result, the contractual preferences (the way the financial incentives are perceived) of each party can differ, also when the contract is on team level (e.g. Danilov et al., 2013).

1.3.3 Use of agency theory in research on incentives

Here, in research on incentives, agency theory has emerged as the leading theory in guiding organizational research on incentives and pay for performance (Bloom & Milkovic, 1995; Harris et al., 2013; Pepper & Gore, 2015). Agency theory focusses on identifying the most efficient contract for aligning the interests of an agent with those of a principal (Fama & Jensen, 1983) and the key role played by extrinsic motivation, especially economic or financial incentives, in reducing agency cost. Agency theory, according to Eisenhart (1989), is concerned with important categories of problems in the principal-agent relationship: (1) the possible goal conflict between the agent and

the principal, and difficulty and cost associated with verifying agent behaviour due to information asymmetry; and (2) risk sharing when the principal and agent have different attitudes toward risk. Standard economic thinking is that increased financial or monetary incentives should increase performance. This is understandable from an intuitive perspective on the effects of incentives on performance (Achtziger et al., 2014) but not always true since decision-makers frequently focus on past performance (Thorndike, 1911; Sutton & Barto, 1998). Many phenomena complicate the influence of financial incentives on performance, including crowding out of intrinsic motivation (Gneezy & Rustichini, 2000; Ariely et al., 2009), ceiling effects (Camerer & Hogarth, 1999) and choking under pressure (Baumeister, 1984): decision-makers simply do things differently than rational decision-making leads one to expect (Achtziger et al., 2014). Other, more human-oriented, theories could be used in this research. However, we stuck to the agency theory: it is still one of the better theories to use for research on principal-agent relationships and incentives (e.g. Cuevas-Rodriquez et al., 2012).

Having outlined the research background, scope and theories from which purchasing knowing-doing gaps will be addressed, the next section (1.4) describes relevance of this research from a managerial and academic perspective.

1.4 Managerial and academic research perspectives

1.4.1 A managerial perspective

There is ample literature that states the importance of a well-functioning purchasing function for the overall performance of the firm (e.g. Baier et al., 2008; Chen et al., 2004; Ellram, et al., 2002). Given this fact, clearly a knowing-doing gap in purchasing is something that should be avoided. Not using the full potential of purchasing can become a problem for the organization. This dissertation will look into such purchasing knowing-doing gaps and explores how incentives can be used to lower purchasing knowing-doing gaps. As incentives are already a frequently used tool within organizations, this research might reveal some practical usable insights for the managers responsible in reducing purchasing knowing-doing gaps and consequently, improve firm performance.

It is important to note that within our approach it is not only the purchasing professionals who are addressed, but also the HRM professionals, the internal customers and/or general management. After all, these managers design and operate the incentive systems.

As already mentioned, there are several reasons why buyers do not put theory into practice. Pfeffer and Sutton (1990) pose the question “why do so much education and training, management consulting, business research, books and articles produce so little change in what managers and organizations actually do?” Our starting premise is that buyers know the theory, and that they also know theoretically how to implement it, but in the end, are not able to convert this ‘knowing’ into action. From practice, we

know that, sometimes, they are 'not allowed' to implement a theory because it is not in line with 'corporate policy' or it is not in the interests of one or more internal clients.

One reason why buyers are not always able to realize the ideals of their internal customers is that buyers and internal customers may have conflicting interests (Hauser et al., 1996; Jun & Cai, 2010; Mudie, 2003; Sánchez-Rodríguez et al., 2004; Young & Varble, 1997). For instance, there may be a conflict between collective synergy and individual profit, or there may be different views on the make – buy decision. Internal customers can have different objectives than buyers. The risk is that 'satisfying the internal customer's needs' inherently might imply that buyers cannot follow their best practise. General managers guard these, sometimes shaky, purchasing balances between buyers and internal customers and it is their task to decide what is best for the company/organization. In other words, although the dissertation is focussed on the possible HRM incentives for improving purchasing performance, the results will be relevant for managers beyond these two functions.

Clearly, better performance of purchasing is often desirable but should not become an objective in itself because it bears the potential problem of sub-optimization. The objective is to have better firm-performance and the various functions (including purchasing, internal customers, HRM, general management) should all collaborate towards this purpose. The knowing-doing gaps addressed and the 'solutions' to lower these gaps are to be seen in this fashion, rather than a goal in itself. Managers have all kind of tools, concepts or models they can use for reducing purchasing knowing-doing gaps. For instance, models that are developed in which overall business strategy is aligned with the strategies of other functions/departments (e.g. Hayes & Wheelwright, 1984; Bartlett & Ghoshal, 2002), or performance measurement/management models like the balanced score card (e.g. Kaplan & Norton, 1995).

Rewards and incentives are important performance indicators in these performance measurement/management models (e.g. Franco Santos et al., 2007). Financial and non-financial incentives are a small subset of the HRM tools or bundles that general managers have for improving organizational performance (Subramony, 2009), yet, they are important (Bolweg, 2012). The challenge for (general) managers is to develop and use financial and non-financial incentives in the purchasing function in such a way that there are benefits for the purchaser, for the internal customer and for the entire organization. This is summed up in the following *management problem*:

What can general managers do with financial and non-financial incentives to reduce purchasing knowing doing gaps?

The answer to this management problem is what his dissertation aims to contribute to.

1.4.2 Academic perspective

This dissertation primarily falls into the area of purchasing research (as it is the purchasing function and purchasing activities which are subject to study and the intermediary results from this research were published on several purchasing research

conferences). However, in many ways this research can be characterized as 'unconventional'. Firstly, it is multidisciplinary as it combines HRM and purchasing and it is based on multiple theories stemming from different fields such as psychology, sociology and (behavioural) economics. Secondly, it is broader than purchasing as the management problem is, from general management rather than from purchasing management alone. Thirdly, it uses multiple methodologies such as a multiple case study, a literature review and laboratory experiments. The methodology and methods are chosen based on 'the best way' to answer the research problem at hand, rather than pre-imposed. This is an intentionally other direction then most dissertations (based on personal experience) that are often approached from a mono-disciplinary point of view (and frequently survey based).

To motivate the approach chosen, it can be observed that there is considerable academic debate on the maturity of purchasing and supply management research: purchasing and supply management will be considered to be mature research field only to the extent that it connects well with related research disciplines such as operations management, organization studies and psychology (Melek Akin Ates, 2014). Van Weele and Van Raaij (2014) conclude that purchasing and supply management research has developed considerably during recent decades, both in terms of quantity and quality. Nevertheless, in their opinion, purchasing and supply management's research contribution does not necessarily reflect strategic business issues and concepts. They argue that future purchasing and supply management research should be better embedded and grounded in management, economic and social theories. There is an urge for the use of other instruments than the frequently used survey method. (e.g. Van Weele & Van Raaij, 2014; Hak & Dul, 2009). We find further support for opening up the purchasing and supply management research field to other academic fields in Snijders (2005) and Wynstra (2006). Recently other methodologies seem in high demand within the field simply because research questions in a more maturing and more behavioural oriented research field require different approaches. Like case research, grounded theory, design research, experiments and action-based methodologies. Other scholars (e.g. Chicksand, 2012) see this opening up as a risk for the development of the purchasing and supply management research field. Also Kuhn (1970) sees a mature research field as one that has developed into a mono-paradigmatic science.

In light of the sketched reflections on where purchasing research is and should be headed according to some leading scholars, this dissertation might be considered unconventional in topic and method, but not without reason. In many ways it fits to the 'desired direction' purchasing research should go. The management problem discussed in this thesis will be approached from a range of related psychological, social and economic disciplines. Alongside the literature review that draws on several bodies of knowledge, the methodology used is also 'multidisciplinary'. The empirical part is partly based on qualitative data gathering through case studies and partly based on laboratory experiments conducted with students and non-students.

We mentioned earlier that there is much research on financial and non-financial incentives in general, but there is limited focus on this in the field of purchasing and supply management. (Pagell, et al., 1999). Suggestions are made that incentives systems should be more specific. On the job (Macleod & Parent, 1999) or even on

persons or situations (Huselid et al., 2005). It is here where this dissertion aims to contribute.

More in general, there appears to be a 'gap' in literature on purchasing and incentives, at least when recent publications are concerned. Three models from the early 1960s – late 1970s of organizational buying behaviour (OBB) developed by Robinson, Faris and Wind (1967), Webster and Wind (1972) and Sheth (1973) provided several constructs that expected to influence organizational buying behaviour. The models agree on the influence of rewards on organizational buying behaviour (see Chapter 3).

To summarize, the aim of the academic contribution of this dissertation is to contribute in filling the academic knowledge gap on the influence of incentives on behaviour of buyers and their internal customers. And doing so by combining insights and literature from several scientific disciplines such as sociology, human resources and behavioural economics with a methodology of a combined use of quantitative and qualitative research methods. It should allow us to answer the central problem statement:

How do financial and non-financial incentives influence purchasing knowing-doing gaps?

The outcomes of this research will clarify, at least to some extent, how financial and non-financial incentives influence the behaviour of buyers and their internal customers. With that 'clarification' purchasing knowing-doing gaps can be reduced which, we assume, will have a positive impact on purchasing' contribution to firm performance.

In the next sections, the research objective and research questions (1.5), research flow (1.6) and methodology (1.7) will be described.

1.5 Research objective and research questions

In order to contribute to the stated management problem and fulfil the aim of this academic contribution, the research objective is formulated:

To obtain knowledge and insights concerning the influence of financial and non-financial incentives on reducing purchasing knowing-doing gaps.

The earlier mentioned benchmark studies (see Section 1.1) focussed on the differences between what was actually done and what was desired in the eyes of the purchasing professionals, related to existing purchasing theory and expert opinions. These benchmark studies showed that buyers do not always do what they ought to do, either in relation to their own ideals on what theory[3] or expert opinions think is appropriate. Other benchmarks like the NEVI MSU and MSU+ (both based on the Michigan State University benchmark-model of Robert Monczka) also showed differences between

[3] Often under the assumption that there is 'some' theory that describes the 'best' action in a given situation.

actual and 'excellent' purchasing processes. According to these benchmarks the lack of awareness concerning these differences limits the ability of purchasing to anticipate change and respond in a way that will create competitive advantage (Trent & Monczka, 1998). Apparently, these scholars suggest that there is an 'unawareness' of the knowing-doing gap.

As mentioned, based on practical insights (e.g. several benchmarks) and related academic research (e.g. Kamann & Bakker, 2004) to what here is defined as 'purchasing knowing-doing gaps', the assumption was made that purchasing knowing-doing gaps do exist; this is actually the very starting point of this research. Despite this fact, from a research perspective of delivering a 'complete' research finding, we wanted to know explicitly whether measurable purchasing knowing-doing gaps can be found. Or, when seen from a different perspective, we felt that our starting point had to be challenged (Conaway, 1989; Wolfe & Samdahl, 2005). For instance, by comparing measurements of the existence of gaps under practical and academic conditions and challenging the assumptions in multiple cases. This leads to the first research question (RQ):

RQ1: Do purchasing knowing-doing gaps exist?

In Section 1.1 the issue whether (financial) incentives could influence behaviour was shortly reviewed. There seems to be a general understanding that financial incentives do influence people's behaviour (e.g. Beer & Cannon, 2004). But researchers find it difficult to know when and why incentives do or do not modify behaviour (Gneezy et al., 2011) with predictable outcomes. As mentioned in the outset, in this dissertation we aim to research whether incentives can be used for influencing buyer and internal customer behaviour to close the purchasing knowing- doing gap (assuming it exists, given RQ1). From literature it seems that there is a rather fundamental question between financial and non-financial incentives, the RQs are split accordingly. This leads to the second RQ:

RQ2: To what extent do financial incentives have an impact on purchasing knowing-doing gaps?

A social norm is a description of a behaviour that is acceptable by a significant group of individuals, is mutually expected in this group, and enforced in case of deviations (e.g. Appelbaum et al., 2009). Social norms are a type of non-financial incentives (Appelbaum et al., 2009; Chen et al., 2010). Financial incentives can be influenced by non-financial incentives in a way that incentivised behaviour can have a crowding-out effect (Gneezy et al., 2011) or a crowding-in effect (Frey & Jegen, 2001). And because professional norms are a type of social norms (Kreps, 1997), in this dissertation we consider professional norms like social norms as non-financial incentives. Professional norms might interact with certain other financial incentives in place or might be

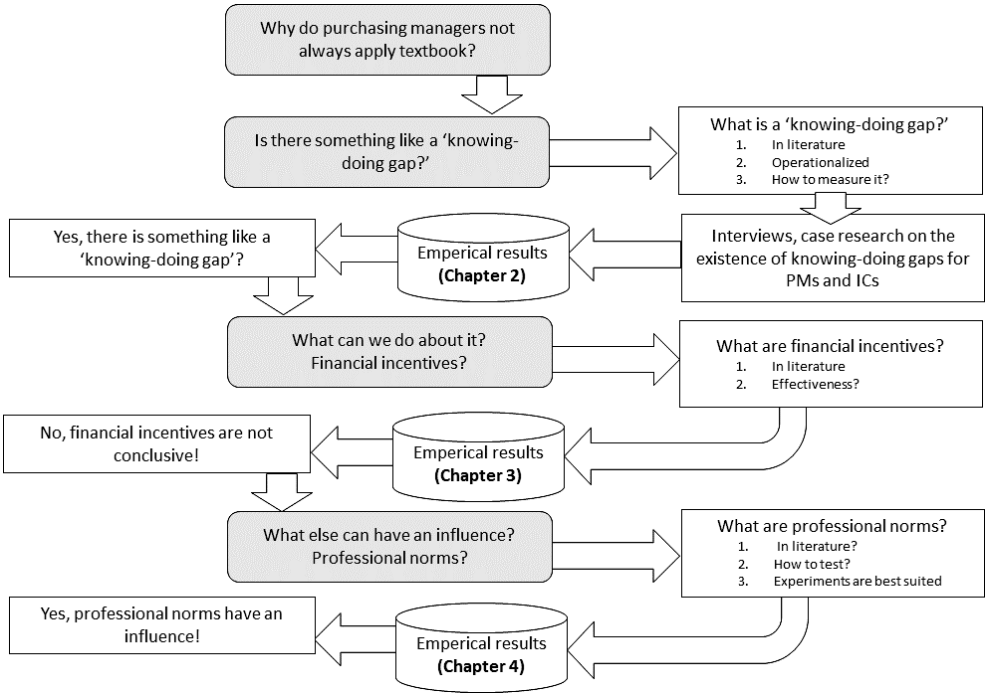
intertwined with extrinsic and intrinsic incentives as already noticed by Kreps (1997). This leads to the third and final RQ:

RQ3: What is the influence of professional norms on the impact of financial incentives?

1.6 Research flow

The chapters of this thesis follow the chronological process of my research involving emerging research questions, repeated refinement of the research scope and data analysis inductively building from particulars to a more general theme (see Figure 1-1). It should also be noted that this dissertation is not written with 'hindsight knowledge' but that it for a larger part follows the ideas developed during the research (i.e. there is some chronology in the overall approach). In that sense, the figure also has some 'spoilers', i.e. it already states some outcomes which are still to be described and motivated.

Figure 1-1: Schematic presentation of the research flow.



Research started with practical insights and evidence from academic literature that purchasing managers actually do not always do what they ideally should do and what is often written down in papers and textbooks. This lead to the first question "why do purchasing managers not always apply textbooks?"

As mentioned, the second question 'Is there something like a 'knowing-doing gap?' could be considered irrelevant but was added to have a complete (and double checked) overall research approach. Answering this question provided us with more and better insights on what a 'knowing-doings gap' is, what we can find in literature, how knowing-doing gaps are operationalized and measured. These insights helped to develop the questionnaires for purchasing managers and their internal customers for the case studies. This lead to the answer on the second question: Yes, there is something like a 'knowing-doing gap'.

The third question is 'What can we do about it? Financial incentives?' We found gaps, we could measure gaps, but the explicit question was whether financial incentives had impact on them. To be able to answer that question, next to the case results, additional literature on HRM and incentives had to be reviewed. This lead to the answer on the third question: 'No, financial incentives are not conclusive'.

This answer brought us to the fourth question. 'What else could have influence on professional norms?' We found that financial incentives did have some impact, but not always. Could it be that the impact of financial incentives was influenced by the professional norms of buyers? This was tested in an experiment and lead to the answer on the fourth question: 'Yes, professional norms have an influence'; on financial incentives and thus on knowing-doing gaps.

The next section (1.7) describes the methodology used in this research.

1.7 Methodology

Methodology refers to the way research objectives are realized (Kempeners, 1999) and it refers to the way research should be undertaken (Ramsay, 1998). The structure of this thesis is developed by the explorative and qualitative character of this research. Exploratory research is research conducted over a problem that has yet to be clearly defined (Narayana Reddy & Acharyulu, 2009). Qualitative research (Creswell, 2014) is an approach for exploring and understanding a social problem or human behaviour. In the subsequent subsections, the paradigms on which our research design is based (1.7.1) and an overview of the main research instruments used in this research (1.7.2) are introduced.

1.7.1 Paradigms and research design

Positivist and interpretive paradigms

The way a researcher views the world has an impact on research questions and on the research design (Saunders & Tosey, 2012). Research paradigms can be seen as a sort of methodological or conceptual universe (Guerra et al., 2012) and they shape the research design. These paradigms form different ways of seeing and understanding social reality and the nature of knowledge. Two paradigms dominate emperical

research (Ramsay, 1998): the positivist and the interpretivist paradigms. When concerned with observing and predicting outcomes, a positivist paradigm[4][5] is likely to be used. When researchers are more concerned with gathering insights into subjective meanings, they are likely to use a more interpretive paradigm.

Positivism includes a focus on facts as distinct from values or meanings (Ramsay, 1996) and that reality can be measured. Some scholars argue that in reality, a researcher inevitably is imbued with values and experiences that could not be separated from the research (Guba, 1994; Kuhn, 1970). Positivism asserts that objective accounts of the world can be given (Denzin & Lincoln, 1994). Positivism is critiqued because studying social life is in many ways considered different to studying 'hard' natural sciences (Ramsay, 1996) in a laboratory situation. In addition, there are many questions raised about the nature of social reality - is there such a thing as a 'real' reality (Guba & Lincoln, 1994) that we can, as positivism implies, know objectively?

This research is based on the interpretivist paradigm. Interpretivists believe that reality cannot exclusively be seen as a system of natural laws. Reality is much more a result of people's capacity for interaction, interpretation and reflection (Korzilius, 2000). Like interpretivists, we started our research with interviewing specialists on incentives systems and reflection on prior insights from benchmarks and business consultancy experience. We assumed that experience and insight on its own was insufficient for developing a fixed research design due to the complex, multiple and unpredictable nature of what is perceived as reality (Hudson & Ozanne, 1988; Carson et al., 2001). Also like interpretivists we used a more personal and flexible and for some as mentioned earlier an unconventional research structure (Carson et al., 2001).

Explorative and confirmatory research designs

As mentioned, exploratory research is research conducted over a problem that has yet to be clearly defined (Narayana Reddy & Acharyulu, 2009). Exploratory research often relies on secondary research, such as reviewing literature, uses qualitative approaches such as informal discussions with stakeholders and more formal approaches through in-depth interviews or case studies. The purpose of exploratory research is to gain familiarity with a phenomenon or acquire new insight in order to formulate a more specific research question or to develop a hypothesis (Herbst & Coldwell, 2004). In this research the first questions as presented in Figure 1-1 are explorative as the answers gave us indications as to the 'why' and 'when' our gaps occurred.

Exploratory research usually cannot tell us 'how often' or 'how many'. Further, exploratory research is typically not generalizable to the population at large. For that type of research confirmatory research is better suited.

[4] A system of 'scientific habits' used by a group of scientists for the solution of scientific problems (Masterman, 1970).

[5] A methodological and conceptual 'universe' in which a scientist can operate (Guerra et al., 2012.

Confirmatory research is often used to test outcomes that are predicted before the measurement phase begins. Such a priori hypotheses are usually derived from a theory or the results of previous studies. The advantage of confirmatory research is that it is easier to claim that a certain result is statistically significant. The disadvantage is that researchers have to know a lot about what they want to know. In the final stages of our research when we formulated our hypotheses (see Chapter 4) a more confirmatory research approach was used.

Based on the interpretive paradigm, this research started with the researcher reviewing the relevant literature, making observations, searching for patterns and developing the main elements and concepts. In the final stages of this research where we focussed on the impact of professional norms (i.e. in answering RQ3), a more confirmatory approach was used to tests hypotheses derived from the literature and the results of previous case studies. Experiments were used to seek statistical significance and agency theory was used as the conceptual basis.

In many social science disciplines, empirical research seems to involve a mixture of techniques or methods (Ramsay, 1996). Empirical evidence can be analysed quantitatively or qualitatively. In our research, qualitative and quantitative forms of analysis are combined. In the case research, the evidence was mostly qualitative; whereas in the experiment more quantitative methods were used. In the experiment, the focus was more on contextual validity and quantitative evaluation, with the important advantage that these results are more generalizable (Lee & Baskerville, 2003).

1.7.2 Methods used in this research

In this subsection we briefly present the specific research methods we used in our research: literature review, case study and (laboratory) experiments.

Literature review

There are quite some publications on how to carry out a full literature review (Hochrein & Glock, 2012; Pittaway et al., 2004; Tranfield et al., 2003). However, in the process of literature reviewing for the sake of this dissertation not all activities (for example a formal review protocol) were applied. There is no 'full' literature review in this dissertation because: (1) as mentioned, the topic of this thesis is not within a specific field but rather multi-disciplinary; (2) the objective of this dissertation is practise-based in the sense that it tries to solve a managerial issue, rather than to reviewing and/or summarize all relevant literature, and (3) the 'grounded' approach involves more data collection than only through existing theory.

However, clearly the academic literature is a relevant and important source of information for this thesis. Therefore, rather than doing a full literature review, the approach was to make transparent and reproducible (Hochrein & Glock, 2012) choices

in the qualitative research process and therefor to acquire 'specific' knowledge. We used literature to address RQ1, RQ2 and RQ3.

We used Google, Google Scholar and EBSCOhost search engines. For instance, for the incentives part, initially more than 150 abstracts of relevant publications were read, establishing their perceived relevance to our incentive topic, 55 publications were initially selected and read in detail. In Chapter 3 we will elaborate on the results of our literature review and present the key points of the acquired 'specific' knowledge.

Case study

It is generally accepted that the use of case studies for research purposes is challenging (Yin, 1981). A case study has limitations, for instance on generalizability. Generalizability refers to the extent to which findings from a study apply to a wider population or to different contexts. For this research, case study research was considered a useful approach to understand the existence, definition and from there the measurability of the gaps and in line with the paradigm used and research design. Based on the grounded approach in the preliminary stages cases provided insights, which could later be tested (Abercrombie et al., 1984) with instruments such as the laboratory experiments (see Chapter 4). One can use single or multiple case studies depending on the 'replication logic', and the number of cases influences the certainty achieved. We used case studies in line with some scholars who believe that case studies are also appropriate for the exploratory phase of research (e.g. Shavelson & Townes, 2003) and not, for instance, only for hypothesis testing.

Case studies amount to multi-perspective analyses (Tellis, 1997). In our research, the preparatory research into the nine case companies was based on public information such as annual reports, company websites and other public information such as purchasing job advertisements, in line with the 'Six Sources of Evidence' (Yin, 1994). We used cases to address RQ1 and RQ2. In Chapter 2 we will elaborate on the use of cases in this research on knowing doing-gaps.

Laboratory experiments

The use of experiments is not common in purchasing and supply management research with some notable exceptions such as in procurement auctions (Deck & Smith, 2013). Experiments are generally used for hypothesis testing by identifying causal relationships between treatment variables and behaviour (Kleppmann, 2014). Charness, Gneezy and Kuhn (2013) proposed a classification for experiments in which they distinguished the classic laboratory experiment, field experiments (cl. List, 2007 for alternative classification) and extra-laboratory experiments. The extra-laboratory experiments differ from the first in several dimensions, the most important being that they take place outside the laboratory and do not use participant pools made up only of students.

There are several reasons for opting for experiments in research including the ability to apply rigorous scientific scrutiny (Deck & Smith 2013):

- Experiments are often used successfully in research on incentives (e.g. Fehr & Schmidt, 2004).
- The use of experiments has been suggested as a way to improve purchasing and supply management research (e.g. Van Weele & Van Raaij, 2014).

We used laboratory experiments to address RQ3. From all empirical methods taken into account (e.g. surveys or field experiments), obtaining data on the influence of professional norms on the impact of financial incentives, laboratory experiments were best suited simply because we wanted to measure the 'real' behaviour of purchasers in a certain buying context with the possibility to eliminate social desirable answers (Mick, 1996). Experiments also helped us to establish a cause-and-effect relationship based on differences in responses between the treatment and the control group. Experiments are used as a unique tool to identify the influence of professional norms on behaviour of a purchasing professional in the presence of a clear trade-off between financial incentives and following a professional norm. This allowed us to identify whether or not the professional norms were able to close (at least partially) any existing gap between actual and ideal behaviour of the purchasing manager. Knowing that in the experiments – like in real life - the purchasing manager faces a 'moral hazard' problem and may have incentives differing from those of the internal customer.

Our experiments were based on a dictator game (e.g. List, 2007). Laboratory experiments are often based on games because many human decisions occur in settings in which there is a strong interdependency between one's own and others' outcomes (Liebrand, 1983). We opted for the dictator game in our experiment because this form is seen as preferable to other games for research on incentives (List, 2007) and provides the opportunity to measure altruistic (Festré & Garrouste, 2014) or moral hazard forms of behaviour (Jackson & Schneider, 2013). In the experiments we used both professionals and students. In Chapter 4 we will elaborate on the results of our laboratory experiments on purchasing knowing-doing gaps.

1.8 Overview of this dissertation

To conclude this introduction, the following chapters of the dissertation are briefly outlined.

- Chapter 2 - *Initial modelling and case based measurement of knowing-doing gaps*: this chapter provides insight into the initial modelling and case design. Case findings are given on a cross case and case-by-case basis. The findings led to the understanding that there are measurable purchasing knowing-doing gaps. In this chapter the answer on RQ1 is given. First scope refinements are made.

- Chapter 3 – *Additional literature review on incentives:* this chapter provided further detailed insights in the influence of financial and non-financial incentives. Findings led to the understanding that financial incentives are not conclusive. In this chapter the answer on RQ2 is given. These insights also led to additional scope refinements.
- Chapter 4 – *Professional norms as incentives: experiments with purchasing professionals and students:* in this chapter, we present the results of several experiments aimed at better understanding the influence of financial and non-financial incentives – in particular professional norms - on buyers' behaviour when collaborating with an internal customer. In this chapter the answer on RQ3 is given.
- Chapter 5 - *Conclusions, discussion and future research*: here we present the answers to the research questions outlined in this introduction. Following this, we draw conclusions and present a general discussion on the research, including its limitations and avenues for future research.

Since the start of the research, several papers have been presented at IPSERA and WION events and some have been or are still under review for publication. For the purposes of this thesis, we have modified the papers into chapters to create a clear story line and avoid excessive repetition. That is, rather than including the papers in-full as part of this thesis, the explicit choice has been made to have the dissertation as a book that can be read 'from cover to cover'. This implies that excerpts of the papers are used without fully cross-referencing these (as that would become too tedious without a clear benefit to the reader).

Chapter 2

Initial modelling and case based measurement of knowing-doing gaps

[6] This chapter is based on earlier presented IPSERA and WION material (on a working paper IPSERA 2012 and a competitive Paper IPSERA 2015. For the purposes of this thesis, the papers are modified to avoid excessive repetition. An adapted version of this chapter is under review for publication in the Journal of Purchasing and Supply Management. This research was conducted in collaboration with Dirk-Jan Kamann.

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2 Initial modelling and case based measurement of knowing-doing gaps

This chapter starts with an introduction (2.1), followed by the theoretical frame of reference for the occurrence of gaps (2.2). Then an overview of possible gaps is presented (2.3). After that the multiple case design is presented (2.4). This chapter ends with the case results (2.5, 2.6) and conclusions and discussion (2.7).

2.1 Introduction

Purchasing managers do not always practice what they preach (Kamann & Bakker, 2004; Bakker & Kamann, 2007). They state: "although they may know how certain analysis tools should be used and how certain strategies should be followed, they may in real life not do so". Given the growing importance attached to the purchasing function in many organizations (Handfield, 1993, Gadde & Snehota, 2000; Baier, 2008; Feisel et al., 2011) and its demonstrated contribution to firm performance (Ellram et al., 2002), it is interesting to see if this gap between 'knowing' and 'doing' exists and if so, whether it can be reduced (and how).

As mentioned in Chapter 1, knowing-doing gaps are not a problem unique for purchasing, and knowing-doing gaps have been described from various perspectives and different theories including social exchange theory, resource-based view, principle agency theory, transaction cost theory and contingency theory. Pfeffer and Sutton (1999) describe how companies in general experience difficulties in translating knowledge into practice. Van de Ven and Johnson (2006) observe that the gap between theory and practice is typically framed as a knowledge transfer problem. Lombardozzi (2012) examined the ability of managers to apply management knowledge to real work place situations and indicated that roughly one-third of managers fail to apply knowledge. (Zeleny, 2008) concluded that efficiency and effectiveness in strategic management in general are not sufficient. Similar gaps between 'the literature' and practitioner 'beliefs' have been found in human resource management (Rynes et al., 2002; Sanders et al., 2008).

Even if putting knowledge into practice is not a specific purchasing problem, purchasing suffers for three reasons. The first reason is the general problem of putting theory into practice. The second one is that the increasing importance attached to the purchasing function requires a different mind-set across the entire organization, not just of the purchasing managers. Cousins and Spekman (2003) remark in this context that "as companies attempt to shed old habits and begin to view procurement as a strategic resource from which competitive advantage can be gained, there is a great deal of corporate baggage that must be shed. More importantly, there is a new mind-set that must be instilled both in procurement and across the firm." (p.19). This also relates to the third reason: the image and role problem that many purchasing managers have - externally a hero, internally anything but. Using the terminology of Bichon (Bichon et al., 2010), the role problem would mean that the part of the 'internal arena'

where the 'status of purchasing' has to be defended requires a 'guru' with company-wide respect, while other aspects of the internal arena have to be covered by a 'material expert': a 'communicator' who ensures that the 'internal customers' and the 'purchasing function' are aligned in at least their perceptions of the 'actual situation' and preferably also when it comes to the 'ideal situation' and the 'purchasing policy' elements. Currently, many purchasing departments mainly focus on the external arena, although our case studies showed that the perceived gap between the actual and the ideal supplier relationships was larger with the internal customers than among the purchasing managers. In our opinion, putting more effort into aligning these perceptions would be useful and feasible.

The purpose of our initial modelling and case based fieldwork is to give insight into the existence and measurability of knowing-doing gaps for purchasing and supply managers in collaboration with their internal customers. With special interest of the possible influence of financial incentives on these gaps

We now continue with a description of the theoretical frame of reference used to accommodate the various perspectives on this issue, resulting in a conceptual model with a number of possible knowing-doing purchasing gaps.

2.2 Theoretical frame of reference for the occurrence of 'gaps'

2.2.1 The Worldview as a starting point

Drawing on behavioural theory, Kamann and Bakker (2004) respond to the question posed by Pfeffer and Sutton (1999) as to why, in the light of all the substantial resources devoted to improving performance, do so few management practices actually change. They found that, on the one hand, there is what the purchasing manager may want to do based on the experience and knowledge acquired while passing through successive networks of learning and conditioning. On the other hand, there is the status of the purchasing department and purchasing as a function within its wider organization – the so-called Negotiated Social Order (NSO) (Eden 1992) – that determines whether the ideas of the purchasing manager become company policy or not: the Socially Negotiated Order (SNO) or Worldview of how purchasing is carried out in the organization. The term 'Worldview' – derived from the German philosopher Kant and his 'Weltanschauung' - is used in the sense of 'the way we do things around here', including purchasing, the modus operandus or 'the fundamental cognitive, affective, and evaluative presuppositions a group of people make about the nature of things, and which they use to order their lives' (Hiebert, 2008). In marketing-driven companies, the marketing department typically dominates in determining how that Worldview looks and in R&D-driven companies, the R&D people dominate. However, in retail companies, purchasing usually has a higher status and because of that, the Worldview of how purchasing should be done will be closer to the purchaser's view of the ideal way. Nevertheless, even if the Worldview fully corresponds with what the purchasing manager wants to do, this does not mean that the company practices are in line with the frontier knowledge in the field. In other words: the way purchasing is done is the

outcome of a negotiation process between the various views, where the status of the participants within the company determines the outcome. Based on a survey, and subsequent LISREL modelling, Kamann and Bakker (2006) estimated that SNO and NSO together might well determine up to 75% of the actual purchasing practices applied in a company, and the views and knowledge of the purchasing manager only 25%. Consequently, in this research, we will focus more on the existence of knowing and doing gaps rather than on the purchasing knowledge of the purchasing manager.

2.2.2 The role of financial incentives as an intermediate factor

The literature on motivation and behaviour indicates that intrinsic (Cerasoli et al., 2012; Wiersma, 1992) and extrinsic (Corkerton & Bevan, 1998; Fryer et al., 2003; Lemieux et al., 2009) motivators are able to influence behaviour of employees. Extrinsic motivation arises from an external source, such as the prospect of a reward or a punishment for a particular action. Intrinsic motivation derives from an internal source: the person them self. The literature shows that financial incentives, and especially variable components such as performance-based pay, certainly affect the performance of people and organizations. However, this is not always the case: it is less effective in situations or jobs where creativity is required. Organizations should align their incentive system with their strategic objectives (e.g. Corkerton & Bevan, 1998; Knoppen & Saenz, 2015). Further, the general HRM policy should be aligned with the strategy (e.g. Youndt et al., 1996; Rao & Krishna, 2015). Recent literature on financial incentives argues for greater differentiation in financial incentives within functions and tasks and among specific key individuals (Huselid et al., 2005) such as purchasing professionals and their internal customers. There is considerable work to do since the role of compensation systems, or more specifically financial incentives, in steering the behaviour of purchasing professionals "may be seen by some to be somewhat outside the realm of purchasing" (Pagell et al., 1996, p. 30),

One would expect a company's Worldview to be reflected in the design and application of financial incentives. It offers to its employees to stimulate them to do what the Worldview regards as desirable and discourage them from what is considered less desirable. That is, the incentives should aim to achieve the most desirable outcomes in the most desirable ways. Studies have investigated the relationship between the organization and the incentive system (Bau & Dowling 2007), the effectiveness of reward systems (Brown 2008), the "lack of evidence (…) between the intended goals and actual effects of many HRM policies" (Bevan, 2006, p. 12, quoted by Brown), the various types of incentive systems such as the 'tournament' or relative compensation systems (Backes-Gellner & Pull, 2013) with its weakness that it cannot deal with heterogeneous population of employees. This weakness is certainly relevant for systems that have to be effective in steering both the purchasing manager and the internal customer. Backes-Gellner and Pull (2013), combine tournament theory with the motivational process theory of Vroom's expectancy theory. They argue that tournament incentives will be less effective in situations with heterogeneous contestants. We do not discuss motivation theories in detail because our focus is on: (1) the orientation and contents of the incentives vis-à-vis the purchasing manager's

actions and their outcomes and the internal customer's actions and outcomes; and (2) the gaps between the implicitly or explicitly promoted behaviour and outcomes, and the actual situation or the situation considered ideal by the respective stakeholders. Consequently, we will limit the discussion to the role and impact of incentive systems in relation to the behaviour of the purchasing manager and of the internal customer and the outcomes of their behaviours. In this study, incentive systems are considered to be distilled from the Worldview.

2.3 Overview of possible 'gaps'

2.3.1 Variety of perspectives

The *'gap'* phenomenon has been studied in a variety of scientific fields. Gaps studied include firm performance gaps, knowledge management gaps, strategy implementation gaps, buyer-seller perception gaps and customer satisfaction gaps. Similarly, principal-agency theory also describes a gap between the expectations of the principal and the behaviour of the agent. In transaction cost economics (cf. Coase, 1960; Williamson, 1979), the assumed propensity to indulge in opportunism could also be seen as a factor causing a gap between the ex-ante desired outcome and the ex-post realized outcome. Several aspects are included in our thinking about this; these aspects will be discussed in the next subsections.

Personality

Any individual – the purchasing manager (PM) or any other actor involved – is driven by a sense of identification and motivation that is part of their personality (Kamann & Karasek, 2006). These authors found a significant statistical relationship between 'personal background' and 'social embeddedness and relations'. The generally accepted cause for the way a particular PM behaves – i.e. their personality - is a mixture of genetic factors ('nature') and education, socialization and conditioning ('nurture'): a person's habitus (Bourdieu, 1972). Bakker (2005) demonstrated that what a purchasing manager professionally perceives as the proper action to take is a result of the historical trajectory of the networks in which they participated. Through this, a PM becomes part of the 'Practice of Purchasing' (e.g. Bourdieu, 1977). Ford and Richardson (1994) came to the same conclusion when they looked for variables that influenced ethical beliefs and decision-making, and they made a distinction between variables that are unique to individual and situational variables such as reference groups, rewards and sanctions, codes of conduct, organizational effects, industry and business concepts. We would suggest that even the very choice for a particular profession or to participate in a certain network is likely to be determined by the ex-ante accumulated personality. Here, we can apply Roger Leenders' (1995) model of 'Selection and Contagion': people select a network because the actors involved show favourable attributes, i.e. similar to or preferred by the selecting person. Once part of that network,

the person involved will be conditioned by the views and norms of that group's behaviour.

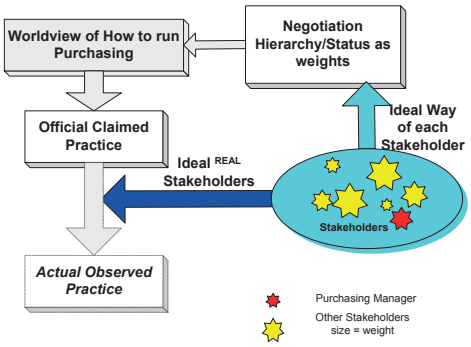
Validity gap

Given that purchasing managers will have a certain 'personality', and a specific 'view' of the purchasing and supply management field, means that they will each have a personal interpretation as to the 'ideal' way of doing things as a PM. Of course, they may be well aware that their personal ideals do not correspond with the 'official' company doctrine in purchasing. For instance, a PM might like to act in a real macho way, squeezing suppliers and using all the dirty tricks available, overlooking the official ethos. Nevertheless, such a PM will always claim to like a cooperative attitude and to hold suppliers in high esteem. Here, we come across the first type of gap: a validity gap. Do we really measure the perceived 'ideal' situation when we ask a PM about it, or do we hear their perception of what the official ideal situation should be. The same applies when asking about the actual situation: are certain tools and policies in use or not. When asked a group of 76 purchasing managers if they used the Kraljic portfolio analysis, everyone raised their hand. However, when asking for some experience-based technical details, the room was quiet. It turned out that, in fact, nobody really applied this tool - but the rhetoric was there. This has direct implications for the research methodology: general questions related to concepts ('partnering', 'cooperative attitude' etc.) seem doomed to receive socially desirable answers and will lack validity. Consequently, in this research we opted for in-depth interviews using rather detailed closed questions.

What do we mean by 'Ideal', 'Real' and 'Actual' practices?

It is likely that the actual practices of an organization will deviate from its official Worldview that resulted from the negotiation process between various stakeholders such as Finance, Marketing, Production, Logistics and Purchasing. Firstly, this is because the outcomes of a negotiation process rarely meet all the demands of all the participants in that process. Subsequently, these actors – and others who were not even involved because of a lack of status – will try to get their own way, irrespective of the 'official' way. Hence, the real practice, as observed in the behaviour of all the participants in the purchasing function, will probably deviate from the Worldview and/or official claimed practice, and will depend on the perceived freedom and power, or autonomy, to employ 'free will' according to the 'Real' Ideal of the actor involved. Figure 2-1 represents this process and outcome.

Figure 2-1: The origins of the Worldview: process and drift in outcome.

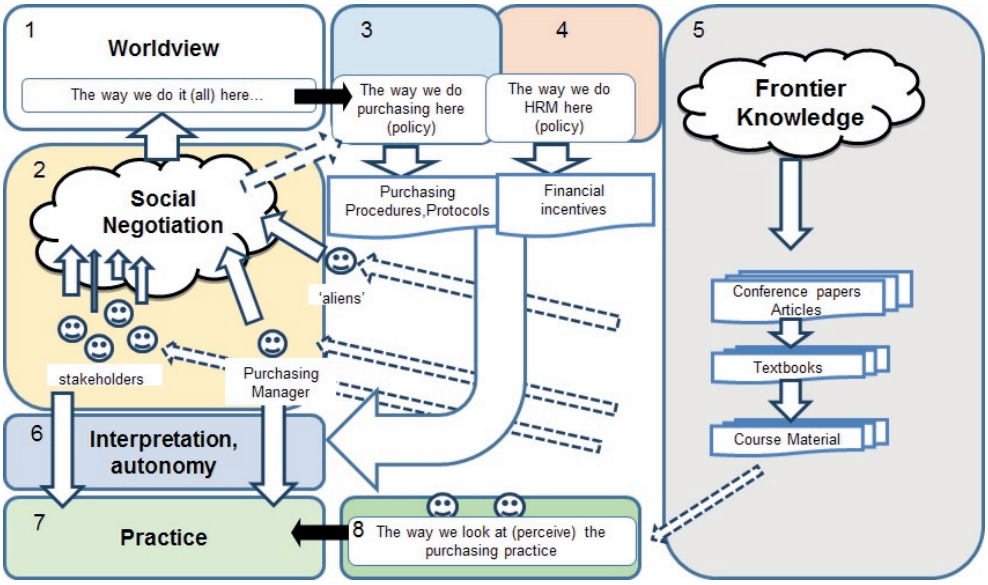


The existence of a drift from official claimed practice, representing the official ideal, towards the real practice implies that a researcher has to carefully validate the replies of respondents when asked about the ideal and real situations. Proper interview training, post-interview validity checks and familiarity with the case being researched should eliminate the problem of potentially 'inaccurate' answers. This also means that large-scale surveys would have validity issues. Given the additional checks built into our methodology, we feel confident that the ideal situation stated by a purchasing manager does reflect their own ideal, but that it does not necessarily conform with the ideal of any other stakeholder. This is one of the gaps we are going to measure.

2.3.2 Initial gap model

So far, we discussed the reason for a discrepancy between 'ideal practices', which would be fully aligned with the Worldview of the company, and the 'actual observable real outcome'. We now consider some other gaps that might occur in the overall process since we would like to cover all the possible 'gaps' from the various perspectives. Figure 2-2 represents a conceptual model of how Frontier Knowledge (Position 5) spreads from the 'Body of Knowledge' that consists of conference papers and scientific articles that find their way into textbooks and course material and through courses and lectures, becomes embodied in purchasing managers. This becomes the way that purchasing managers perceive purchasing practice should be (Position 8).

Figure 2-2: Overview of possible gaps and their origins.



However, as shown in Figure 2-2, in the process of social negotiation the actual outcome may – and likely will – deviate from the 'official Worldview' as for instance described in company procedures and protocols and ISO handbooks. As Figure 2-2 shows, there are a number of observable 'gaps', this research will focus on the following selected gaps: (1) between what the purchasing managers perceive as actual practice and what they see as ideal practice (Positions 7 & 8); (2) between what the internal customers (as stakeholders) similarly perceive as actual practice and what they see as ideal practice (Positions 7 & 8); (3) between the actual situation as perceived by the internal customers and by the purchasing managers (Position 8); and finally (4) The misalignment between what financial incentives encourage (Position 4) and the actual practices (Position 7).

In selecting these four gaps, we are focussing on three dimensions: (1) the actual and ideal situations; (2) the perspectives of the PM and the IC; and (3) the assumed impact of financial incentives for the PM and for the IC on the knowing-doing purchasing gap.

In the next section (2.4) the case design and approach is introduced.

2.4 Multiple case design and approach

It is generally accepted that the use of case studies for research purposes is challenging (Yin, 1981). A case study has limitations, for instance because it cannot provide reliable information about a broader class. For this research, it was considered a useful approach in the preliminary stages since it would provide insights, which could later be tested (Abercrombie et al., 1984) with other instruments such as the laboratory experiments (see Chapter 4). One can adopt single or multiple case studies depending on the 'replication logic', and the number of cases influences the certainty achieved. We used cases studies to collect exploratory data, a limitation in line with critics who believe that case studies are only appropriate for the exploratory phase of research (e.g. Shavelson & Townes, 2002) and not, for instance, for hypothesis testing. Case studies are best used in situations where the researcher has no control or influence over behavioural events (Yin, 1994). In our case, the behaviour of the purchasing managers and their internal customers.

Case studies amount to multi-perspective analyses (Tellis, 1997). In our research, the preparatory research into the nine case companies was based on public information such as annual reports, company websites and other public information such as purchasing job advertisements. It was not possible to collect all the 'Six Sources of Evidence' (Yin, 1994) for all cases. Partly because of the design and partly due to the nature of the research we were not able to make direct observations in the case companies. The companies were visited by students and by the principal researcher, in line with what Denzin (1984) describes as 'investor triangulation'. Through this approach, several investigators examined the same phenomenon.

The three-step multiple-case design approach (Yin, 2003, p49) was followed: (1) define and design, (2) prepare and collect and (3) analyse and conclude. These aspects will be discussed in the next subsections.

Define and design

A first extensive orientation in literature lead to an overview of possible gaps and their origins. Based on initial modelling (see Figure 2-2), case research was designed. The inclusion of nine case companies was based on the desire to include a wide range of companies from different sectors with different levels of purchasing maturity (e.g. Rozemeijer et al., 2003; Van Poucke, 2015). The intention was not to focus on a particular sector or a particular form of purchasing coordination. In line with the recommendations of Pettigrew (1990), we chose case companies with 'polar' purchasing characteristics based on comments made by the PMs in the initial contacts. A shortlist of 15 companies was developed from a much longer list of 'approachable' companies. Eleven companies expressed an interest in becoming involved. The subject of the research – knowing-doing gaps and financial incentives – had practical relevance for them and most of the companies were enthusiastic about the promise of sharing our final findings with them and their organizations. Finally, nine of them participated in the research, the other two withdrawing after realizing the commitment

required and the data we would require. The included case companies (labelled A to I), had the following profiles: a high tech company, a construction firm, a logistics service provider, a telecom systems producer, an aircraft company, a flooring manufacturer, a producer of agricultural feed products, a bank and a wholesaler of technical materials.

Two questionnaires and in-depth interviews were used in the case studies. One questionnaire was designed for and administered to the 9 purchasing managers and the other to 20 internal customers.

Prepare and collect

The three theoretical aspects we selected for this purchasing knowing-doing research are: purchasing criteria[8], buyer-supplier relationships and internal customer relationships. These three aspects were selected with the objective of including the basic issue (purchasing criteria), a well-known aspect of external behaviour (supplier relationships) and an internal behavioural aspect (internal customer relationships).

The use of valid and reliable measurements should be the starting point of all scientific endeavours (Netemeyer et al., 2003). From a methodological perspective, how one operationalizes the variables in a conceptual model is important (Lyon et al., 2000; Maurer & Paulokat, 1994). The measurement items were triangulated with literature and insights from several purchasing benchmarks (e.g. Boodie, 1997, 2002, 2008, 2010).

- For purchasing criteria, initial measurement items were derived from literature reviews on supplier selection (e.g. Boer & Wegen, 2003; Sen et al., 2008), vendor selection (e.g. Weber et al., 1991), buying decisions (e.g. Lehmann & O'Shaughnessy, 1982) and supplier evaluation (e.g. De Boer et al., 2001).
- For the supplier relationship, we derived initial measurement items from literature reviews on working relations (Yeniyurt & Hencke, 2013), relationships (Anderson, 1995), buyer-supplier relationships (Autry & Golicic, 2010), supply chain collaboration (e.g. Dyer, 1996; Liker & Wu, 2000; Holweg et al., 2005), supplier quality evaluation (e.g. Noshad & Awasthi, 2015) and supply chain management relationships (Harland, 1996; Ellram, 1991).
- For internal customer relationships, we derived initial measurement items from literature reviews on TQM (e.g. Jun & Cai, 2010), internal relationships (e.g. Wisner & Stanley, 1999), service quality (e.g. Large& König, 2009) and internal supply chain management (Stevens, 1989; Stevens & Johnson, 2016).

For our case research, we did not explicitly test the scale items on reliability and validity in a statistical way. Reliability examines whether you are getting consistent

[8] In this thesis, we view purchasing criteria as criteria that rank the best offer in response to a purchase order after the supplier is selected.

information. Validity examines whether the information you are getting measures what you think it measures (Fornell & Larker, 1981). Examples for statistical testing of reliability are Cronbach's alpha and McDonald's omega. One statistical tool that could have been used for validity is the confirmatory factor analysis (Krause et al., 2000). Although not used in this part of our qualitative research, the use of statistical testing for scale item development can be seen as a future research opportunity.

The questions addressed: (a) the ranking of purchasing criteria (item Price, item Quality, Other costs of organization, Product/Service flexibility, Timeliness, Process flexibility, Service and support, Risk, Other) both as they perceived them to currently be and as they thought they should be ranked; (b) the social status or hierarchy (as perceived by purchasing managers and internal customers) of the various departments (Sales/Marketing, Production, Finance, Warehousing/Logistics, R&D/New Product Development, Other); (c) 29 aspects of supplier strategy; (d) 12 aspects and attitudes related to internal customer strategy; and (e) the incentive or reward system and its relationship to purchasing objectives.

In terms of purchasing criteria, this scale development resulted in eight elements. For the supplier relationship, it resulted in 21 elements; and for the internal customer relationship in eight elements. Appendix A provides further details on all the elements included.

After preparatory research into the case companies based on public information such as websites and purchasing job advertisements, all the companies were visited for interviews by a team consisting of two or three students that were prepared in several workshops given by principal researcher and colleagues from the University of Groningen to ensure that each of them was knowledgeable about the research topics and were adequately trained for conducting the interviews.

Questionnaires (see Appendix B), were developed for the PMs and for the ICs and tested with the supervisors and students. Both questionnaires included structured and semi-structured questions. Structured questionnaires are a quantitative research method that requires a low level of involvement by the researcher. Semi-structured interviewing involves more commitment and according to Bernard (1988), is best used when you will only get one chance to interview someone and when you will be sending several interviewers out into the field to collect data. Semi-structured interviews preceded by observations and informal and unstructured interviewing by principal researcher in order to allow the researchers to develop a keen understanding of the topic of interest. The questionnaires were then externally tested with several PMs and finalized. In this way, the content validity of the scale items was demonstrated in line with established approaches for scale development and validation (e.g. Menor & Roth, 2007; Rosenzweig & Roth, 2007). All interviews are tape-recorded and transcribed.

PMs were asked to identify a maximum of three of their most important internal customers. To ensure that all the PMs considered products or services of similar importance, we asked them to select products or services from the strategic quadrant based on the according classification by Kraljic (1983). These products represent a considerable value to the organization in terms of having a large impact on profit and

a high supply risk. The general recommendation for managing suppliers in this quadrant is to maintain a 'strategic partnership' (Gelderman & Van Weele, 2003).

For each question, buyers and the ICs who had been identified as important were also asked to rate the extent of financial incentives that they perceived to be on offer and belonged with a specific choice or task in a top-3. Questions about supplier and internal customer relationships included multiple items to be answered on a five-point Likert scale. For all the questions, buyers and ICs were also asked to rate the level of financial incentives that they perceived to be linked to a specific choice or task. For all the questions, only buyers were also asked to rate the level of financial incentives that they perceived and belonged with a specific choice or task on a five-point Likert scale (see Appendix B).

Additional interviews by the principal researcher after the first face-to-face interviews served to validate answers and resolve possible ambiguities. In total 29 respondents, 9 purchasing managers and 20 internal clients, were involved. Interviewers visited all nine companies to interview the total of 29 people. All of the interviews were recorded and transcribed. Several telephone calls and follow-up visits after the first interviews served to validate answers and resolve possible ambiguities. The preliminary findings were presented to, and discussed with, the involved PM and/or the ICs on an individual case basis. Final presentations were given to seven of the nine case companies (not possible in cases E and G).

Analyse and conclude

The last steps of Yin's (2003) three-step approach are presented in the next sections. First with a cross-case analysis (2.5) followed by a case by case analyses (2.6) and overall conclusions (2.7). See Appendix D and E for details.

2.5 Cross case results

2.5.1 Introduction

Our use of Likert scales has some limitations and while we would have liked to be as strict as possible (Kuzon et al., 1996), we also somewhat reluctantly agree with the more 'liberal' viewpoint (Knapp, 1990) that, in some circumstances, one can treat them as interval scales. In the light of Susan Jamieson's (2004) treatment of this debate, we performed some manipulations of our outcomes in line with this discussion, including an SPSS hierarchical cluster analysis and a regression analysis in testing some of the expected relationships. We used cluster analysis results only insofar as they supported our 'common sense' and expert-based observations about the existence of a number of different 'types' of companies. For that reason, we based our decision to fix the number of clusters at three or four on expert opinion rather than relying on statistical measures that might give a misleading indication of significance. Regression analysis was used only to see whether relationships that we expected were statistically significant, and we

were aware of the limited value of this analysis given the sample size. For this reason, we made limited use of statistical tools and thus took note of the rather purist views of Kuzon et al. (1996). As such, all 'findings' based on sophisticated statistical approaches should be seen as exploration for further testing rather than as statements that are empirically proven.

Gaps were present, but differed between companies

As a general conclusion, we can state that gaps were found in all the aspects we investigated but that they differed significantly between companies. These differences are reflected in the results of a hierarchical cluster analysis of the way companies rank their purchasing criteria (see Table 2-1). Company A formed its own cluster. As we will see later, this company was the only one that seems to follow the textbooks with few gaps across the large number of aspects.

Cluster\Case	A	B	C	D	E	F	G	H	I
1	X								
2		X					X	X	
3			X	X	X	X			X

Table 2-1: Cluster result hierarchical clustering of 9 cases using purchasing criteria.

Given that there are differences between the companies – maybe reflecting their different industries – we will discuss the various gaps in more detail. First, we will deal with the difference between what the theory/textbooks see as ideal practice (as formulated in the form of 'expert opinions') and what practitioners perceive as the ideal.

Academia versus Practice

In our earlier shown model (see Figure 2-2), we assume that knowledge is diffused through textbooks, courses and other learning material and consultants – 'system aliens' - to practitioners. This also assumes that these textbooks are 'right', even while they may contain normative elements. To check on this assumption, we 'validated' some standard textbook recommendations (as formulated by expert opinions) by comparing them with what the PMs stated as being ideal practice. Here we used 12 aspects linked to their relationship with internal customers since this area is less company-specific and more strategy-independent than if, for instance, we had used purchasing criteria. Table 2-2 below shows that there are significant differences between what theory recommends and what practitioners think is the ideal situation.

Difference between Textbook Theory and Ideal Practitioner	A	B	C	D	E	F	G	H	I		0 score
0=no difference 5= max difference										average	% total
Aligning quantitative and qualitative goals	1	2	1	0	0	1	1	0	2	0.9	33%
Sharing information with internal customers	2	3	1	0	1	2	1	0	1	1.2	22%
Asking internal customers to jointly organize a single point of coordination	1	2	1	0	0	0	0	0	1	0.6	56%
Aligning relevant KPI's	1	2	0	1	0	3	0	1	1	1.0	33%
Asking internal customers to involve purchasing in their decision making	0	1	0	0	1	1	0	0	1	0.4	56%
Asking internal customers to make investments	2	2	3	0	1	3	1	1	1	1.5	11%
Asking internal customers to align (HR) incentives	2	1	0	1	0	2	0	0	1	0.8	44%
Govern relationship with internal customers SLA's	4	4	0	1	2	3	2	1	4	2.3	11%
Differentiate in services for internal customers	1	0	0	0	4	1	2	0	4	1.3	44%
Monitor purchasing performance monthly /yearly basis	0	2	0	0	1	0	1	0	4	0.9	56%
Charge internal customers for the costs of the purchasing process	4	0	0	1	4	0	1	4	2	1.8	33%
Frequently update the SLA with internal customers	4	1	0	1	0	3	1	2	4	1.8	22%

Table 2-2:Academia versus Practitioners: how well do their ideal situations match.

Table 2-2 indicates that in some aspects of their relationships with internal customers, the views of the purchasing managers as to the 'ideal situation' are radically different to what theory suggests. When 'actual' matches 'ideal' the difference in ranking is zero and there is no gap. Normally, one would argue that, in such instances, the 'real world' is always right. In this instance, we would just remark that perhaps theorists sometimes overstate their case and are more normative than actually describing the 'ideal' situation as perceived by people in practice. Given the gaps found, we have decided not to include the gap between 'Frontier Knowledge', or 'theory', and 'actual' behaviour in the further discussion, but to use the practices described by the practitioners as 'ideal' as a substitute for 'knowledge'. This decision is in line with the discussion about the 'Theory of Practice' and 'Practice theory' (Bourdieu, 1977).

2.5.2 Gaps in perceptions of 'actual' and 'ideal' practices: Purchasing Criteria

Table 2-3 below provides an overview of the perceived 'actual' and 'ideal' rankings by both the purchasing managers and the internal customers of criteria used in purchasing decisions. Rather than give the rankings by all the individuals, we indicate the average ranking and the standard deviations (SDs); the SDs are quite high, reflecting significant inter-company differences. We also calculate the Ideal/Actual ratio ranking for both the PMs and the ICs (see Column 3). In four cases, the average IC actual corresponds with the average IC ideal; whereas for the PMs, this only occurs in two instances. Based on the average scores, the differences between the PMs and the ICs are relatively small. However, for many individual companies, these differences are larger. Column 4 reports the gaps between the perceived actual rankings by the PMs and the ICs - and similarly the gaps between their ideal rankings. There are gaps indeed, but not that dramatic.

	1: Ranking PM				2: Ranking IC				3: Ideal/Actual		4: PM versus IC	
	Actual PM		Ideal PM		Actual IC		Ideal IC		IC	PM	Ideals	Actuals
	Average	St Dev	Average	St Dev	Average	St Dev	Average	St Dev	*)	*)	**)	**)
Component/services price	2.0	1.7	2.8	1.7	2.4	1.5	2.4	1.6	1.0	1.4	1.2	1.2
Component/ services quality	2.6	1.7	2.4	1.8	2.6	1.8	2.8	1.4	1.1	1.0	0.9	1.0
Timeliness	4.3	1.8	4.4	1.6	2.9	1.4	3.4	1.7	1.2	1.0	1.3	0.7
Risk	4.8	1.1	4.2	1.9	5.4	1.8	5.4	2.4	1.0	0.9	0.8	1.1
Other Costs Of Organization	5.4	2.5	4.8	2.4	5.9	2.1	6.0	2.0	1.0	0.9	0.8	1.1
Process flexibility	5.9	1.8	6.3	1.6	5.2	1.8	4.9	1.9	0.9	1.1	1.3	0.9
Product or service flexibility	6.3	1.9	5.7	2.5	4.6	2.3	4.1	2.6	0.9	0.9	1.4	0.7
Service and support	6.4	1.8	7.4	1.0	6.1	1.8	5.9	1.7	1.0	1.2	1.3	0.9
*)	score < 1.0 = would prefer higher ranking than actual						**)	score < 1.0 = PM perceives/desires ranking lower than IC does				
	score = 1.0 = actual ranking corresponds with ideal							score = 1.0 = PM perceives/desires ranking simular to IC				
	score > 1.0 = would prefer lower ranking than actual							score > 1.0 = PM perceives/desires ranking higher than IC does				

Table 2-3: As Actual perceived ranking and Ideal ranking of Purchasing Criteria.

It is surprising that 'Price' is ranked so high as a purchasing criteria since, for products in the strategic quadrant, one would expect other criteria to rank higher. Here, we observe a gap between textbook recommendations and earlier case study results on the one hand (e.g. Kannan & Tan, 2002) and what both the PMs and ICs found important in our investigation on the other, even if we allow for differences between industries. In particular, we would intuitively expect, in an ideal situation, that PMs would rank Price above Quality and ICs to reverse this order. In our research, the averaged rankings produced the opposite result. However, we would note that some of our case companies on an individual basis did rank in line with our expectations.

2.5.3 Gaps in perceived 'actual' and 'ideal': Supplier Relations

Table 2-4 below provides, for all nine case companies, the differences between what the purchasing manager sees as the 'ideal' situation and what he perceives as the 'actual' situation in terms of 29 aspects of Supplier Relations. When 'actual' matches 'ideal' the difference in ranking is zero and there is no gap. In the table, we also show the correlations between the ideal situation and the financial incentives offered in each of the case companies, and the correlation between the perceived 'actual' situation and the financial incentives.

Difference between Stated Ideal and Perceived Actual Supplier Relations	A	B	C	D	E	F	G	H	I		
0=no difference 5= max difference Correlation between Ideal-Incentives	0.3	0.5	0.6	-	0.3	-	0.2	0.8	-		% of
Correlation between Actual-Incentives	0.4	0.0	0.5	-	0.5	-	0.5	-0.1	-	*average*	*act=ideal*
Sharing information with suppliers	0	2	1	0	0	1	2	4	0	1.1	44%
Asking suppliers to share information with your plant	1	0	2	0	1	0	2	1	0	0.8	44%
Sharing knowledge with suppliers	0	2	2	1	2	1	3	2	0	1.4	22%
Asking suppliers to share knowledge	2	3	1	1	2	1	3	3	0	1.8	11%
Involving the suppliers in your plant's decision making	2	1	2	1	0	0	2	1	0	1.0	33%
Asking suppliers to involve you in their decision making	1	1	2	2	0	0	3	2	0	1.2	33%
Making investments to support a smooth product flow with suppliers	1	0	1	2	3	0	1	3	0	1.2	33%
Asking suppliers to make investments to support a smooth product flow with suppliers	0	2	0	1	1	0	2	4	0	1.1	44%
Govern relationship with suppliers by contract	1	0	1	1	1	0	0	3	0	0.8	44%
Standard purchasing contracts	0	1	0	1	0	0	1	1	0	0.4	56%
Operational targets in the contract	0	0	0	1	1	0	0	3	0	0.6	67%
Charge suppliers for the costs of deviations	0	1	1	2	1	0	1	3	0	1.0	33%
We aim to find a satisfactory solution to the disagreement	0	0	0	0	1	0	0	0	0	0.1	89%
Frequently update the contract with suppliers	0	1	1	1	1	0	0	3	0	0.8	44%
Change the contract whenever business changes	1	0	1	0	1	0	3	3	0	1.0	33%
Aim to solve disagreements with our suppliers quickly	0	2	0	1	1	0	0	2	0	0.7	56%
Work with our suppliers to prevent problems	1	1	1	1	2	0	0	3	0	1.0	33%
Committed to our suppliers to help	0	1	1	1	2	0	1	2	0	0.9	33%
Want to achieve commitment from suppliers	1	2	1	1	2	0	2	4	0	1.4	22%
Demand an annual improvement of performance	0	0	1	1	1	1	3	3	0	1.1	33%
Help our suppliers to improve their performance	0	2	1	1	1	0	3	3	0	1.2	33%
Invite suppliers to help us improve our performance	3	1	2	1	2	0	3	4	0	1.8	22%
Base our business with suppliers on mutual benefit and trust	0	1	2	1	4	0	1	3	0	1.3	33%
Faced with adversity, suppliers can rely on us	0	0	1	1	2	0	0	3	0	0.8	56%
Aim to involve suppliers	1	1	1	1	1	0	0	3	0	0.9	33%
Effort so that our suppliers are satisfied	0	1	1	0	2	0	2	4	0	1.1	44%
Aim to involve suppliers so that they make an effort	1	2	1	1	3	0	1	4	0	1.4	22%
Aim for long term relations and contract terms	0	1	1	1	3	0	1	4	0	1.2	33%
Aim for contract terms of max 2 years with our suppliers	0	0	1	0	0	0	0	4	0	0.6	78%
average deviation between Stated Ideal and Perceived Actual	0.6	1.0	1.1	0.9	1.5	0.1	1.4	2.9	0.0		
Percentage of aspects where Actual=Ideal	61%	29%	18%	21%	18%	89%	32%	4%	100%		

Table 2-4: Difference between stated Ideal and perceived Actual supplier relations.

Table 2-1 shows that three cases (A, F & I) score rather high in terms of the percentage of aspects where the 'actual' and 'ideal' situations match. The right-hand column gives the percentage of case companies where the 'actual' and 'ideal' situations matched for each aspect. Again, we observe significant differences between the companies. Perhaps surprisingly, in 7 of the 9 companies, the PM saw a match between 'actual' and 'ideal' in terms of a maximum contract length of two years. The surprising aspect is that most textbooks promote the desirability of long-term strategic partner contracts. That is, the PMs' perception of the 'ideal' situation differs from what theory recommends. Another notable result concerns the 'asking suppliers to share knowledge' aspect where only 11% (1 of the 9) PMs saw a match between the 'actual' and 'ideal' situations. The PM from Case H (a bank) indicated a very poor match between the 'actual' and 'ideal' situations, and this case also showed a negative correlation between the financial incentives and the 'actual' situation. In other words, the actual situation seems to go against both what theory suggests and what the incentives would seem to encourage. Indeed, the financial incentives are much more in line with the 'ideal' situation (r=0.8).

2.5.4 Gaps between 'actual' and 'ideal' situations – Internal Customer Relations

Table 2-5 below gives, for all nine cases, the difference between the 'ideal' situation from the viewpoint of the purchasing manager and what he perceives as the 'actual; situation for 12 aspects of Internal Customer Relations. When 'actual' matches 'ideal'

the difference in ranking is zero and there is no gap. Again, cases A, F and I show the highest number of aspects where the 'actual' matches the 'ideal'.

Difference between Ideal and Actual (absolute score)	A	B	C	D	E	F	G	H	I		
Viewpoint of PM *Correlation between Ideal-Incentives*	0.9	0.9	0.7	0.2	0.1	-	-0.2	0.7	-		0 score
0=no difference 5= max difference Correlation between Actual-Incentives	0.8	0.6	0.9	-0.2	0.3	-	0.2	0.2	-	average	% total
Aligning quantitative and qualitative goals	0	0	1	1	3	0	2	4	0	1.2	44%
Sharing information with internal customers	0	1	2	1	1	0	1	4	0	1.1	33%
Asking internal customers to jointly organize a single point of coordination	0	1	0	1	0	0	2	2	0	0.7	56%
Aligning relevant KPI's	1	0	3	2	1	0	3	3	0	1.4	33%
Asking internal customers to involve purchasing in their decision making	2	2	3	1	2	1	2	3	0	1.8	11%
Asking internal customers to make investments	0	1	0	1	1	0	2	2	0	0.8	44%
Asking internal customers to align (HR) incentives	0	1	3	2	3	0	4	4	0	1.9	33%
Govern relationship with internal customers SLA's	0	0	0	3	1	0	2	3	0	1.0	56%
Differentiate in services for internal customers	0	0	0	0	0	0	2	4	0	0.7	78%
Monitor purchasing performance monthly /yearly basis	0	0	0	0	0	0	1	4	0	0.6	78%
Charge internal customers for the costs of the purchasing process	0	0	0	1	1	0	3	0	0	0.6	67%
Frequently update the SLA with internal customers	0	0	0	3	2	0	3	2	0	1.1	56%
Average score	0.3	0.5	1.0	1.3	1.3	0.1	2.3	2.9	0.0	1.06	49%
Percentage of aspects where Actual=Ideal	83%	58%	58%	17%	25%	92%	0%	8%	100%		

Table 2-5: Differences between stated Ideal and perceived Actual situation (IC relations).

In addition, we again calculated the correlation between both the 'ideal' and the 'actual' situations and the financial incentives for each of the case companies. In Company A, where we had seen a good match between the 'actual' and the 'ideal' situations, we also found a good match with the financial incentives. Companies B and C also demonstrated reasonable correlations with the financial incentives; in the former particularly with the 'ideal', in the latter with the 'actual' situation. Some of the other companies showed very poor correlations between the financial incentives and both the 'ideal' and the 'actual' situations.

2.5.5 Summary of gaps found cross case

In the tables above, we have indicated that there are clear gaps between what the purchasing managers would like to do – their 'ideal' situation – and what they perceive the 'actual' situation to be. We have seen remarkable differences between companies in this respect. We have also found differences between some aspects where the 'ideal' and the 'actual' did match, and many aspects where they did not.

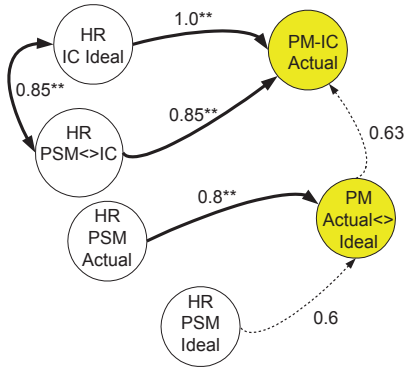
Effects of financial incentives

When looking at the correlations between the financial incentives and both the 'ideal' and the perceived 'actual' situations, we again saw significant differences. Further, we saw that companies can match the 'actual' and the 'ideal' situations, without any explicit financial incentives (in Companies F & I) while other companies have a very poor match despite their financial incentives clearly steering towards the 'ideal' situation (as in Company H). Here, our interviews found that those companies without explicit financial incentives did have general profit-sharing schemes, suggesting that these might be good intrinsic motivators that seem to work rather well. From our results, we conclude that explicit, function-specific financial incentives do not always

guarantee proper behaviour, nor seem actually required for behaviour to be appropriate: implicit, more general, motivators such as a profit-sharing scheme seem to be an effective incentive. Expressed in logical terms, specific financial incentives are neither a sufficient, nor a necessary precondition. This fits rather well with the discussion in the HRM literature on the effectiveness of differentiated incentives (Boodie & Kamann, 2015) and many other observations outside the field of purchasing (Cerasoli et al., 2014).

In light of the findings described above, it was appropriate to consider whether financial incentives actually mattered at all. To test this, we used the ranking of purchasing criteria to see whether financial incentives did drive behaviour or not. The hypothesis we tested was that the larger the gap between the financial incentives and the 'ideal' situation, the larger the gap would be between the 'actual' situation and the 'ideal' situation as perceived by the purchasing manager. Based on a Spearman correlation matrix, the model shown in Figure 2-3 was created. The model explains how the different perceptions of the PM and the IC about which purchasing criteria are actually used arises from the financial incentives (HR) that drive 'ideal' IC behaviour, plus the 'gap' between the financial incentives (HR) offered to the PM and to the IC.

Figure 2-3: Relationship between gap financial incentives and gaps between PM and IC.



[9]** significant at the 0.02 level

The model also shows how the 'gap' between what the PM perceives as 'ideal' and 'actual' is determined by the financial incentives applied to the PM. In other words, if we take the HRM contents as a reflection of the Worldview, we indeed find that this Worldview has a very strong influence through the financial incentives. Although the financial incentives clearly have a large impact here, we should be careful not to overstate the importance of this finding given our previous statements and the limited value of these results given our sample size and the fact we used Likert scales.

[9] Dotted lines: not significant in this sample

2.5.6 Conclusion and discussion cross case analysis

As explained in the introduction to this chapter, we set out *(1)* to measure the 'gap' between how a number of aspects of purchasing are executed and how this should ideally be done in the eyes of the stakeholders involved; *(2)* to establish the perception gaps, of both the purchasing manager and internal customers, between the 'actual' and 'ideal' situations; and *(3)* to statistically test to what extent financial incentives influence behaviour of PMs and ICs.

Gaps were indeed found in almost all the aspects analysed, which, at least from a measurement perspective, is positive. However, given the small sample size (9 purchasing managers and 20 internal customers in 9 companies) one has to be extremely cautious in generalizing the findings. Not only did we find gaps between the 'ideal' and the 'actual' situations in purchasing practice, but also between the perceptions of the purchasing managers and of the corresponding internal customers as to what actually happened. It was notable that many of the purchasing managers were rather surprised to hear the views of the internal customers. There was a significant relationship between financial incentives and the purchasing managers' views on the 'ideal' and 'actual' practices. If we see the financial incentives as a product distilled from the company's Worldview, we may conclude that the Worldview plays a dominant role in determining the ideals and actions of a purchasing manager. At the same time, the significant differences between the case companies, coupled with the fact that companies with somewhat general implicit financial incentives such as a profit-sharing scheme scored more highly than organizations with explicit financial incentives, indicate that 'just' using financial incentives is not enough.

The size of our sample limits the possibilities of applying many advanced statistical methods. Nevertheless, issues such as reliability and validity are qualitative addressed through allowing ample feedback with the respondents, including external expert validations.

Based on the above, we conclude that financial incentives *can* have a positive effect on reducing knowing-doing gaps for both the PM and the IC. We have also seen that the knowing-doing gaps *can* differ for the PM for the IC. The smaller the knowing-doing gap of the PM or the IC, the more the organization seems to drive the PM or the IC. The PM or IC with the smallest gap represents the Worldview of the organization. Financial incentives also seem to have a positive effect on the relationship gap. Both 'actual' and 'ideal' relationship gaps can exist, and the smaller these gaps the better the relationship between the PM and the IC is likely to be. In our findings financial incentives have more influence if those for the PM and the IC are aligned. We also conclude that, apparently, explicit financial incentives are neither a sufficient nor a necessary precondition for the 'actual' and 'ideal' situations to match or for the implementation of relevant purchasing theory.

2.6 Case by case results

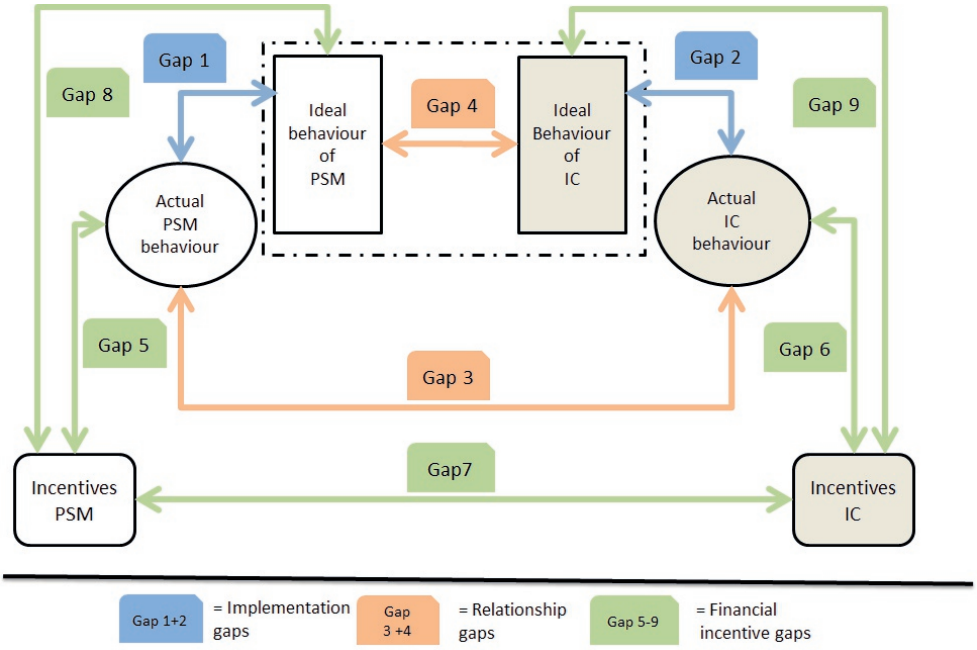
2.6.1 Introduction

Previous cross case results (see 2.5.5) show that financial incentives can have – yet do not always have - a positive effect on reducing knowing-doing gaps for both the PM and the IC on three different aspects of purchasing theory. Here we also conclude that explicit financial incentives are neither a sufficient, nor a necessary precondition for the *'actual'* and *'ideal'* situations to match or for the implementation of relevant purchasing theory.

Starting with a conceptual model (Model I, see Figure 2-2) with a large number of potential gaps, we, during the process of scope refinement, reduced the scope to focus on the role of financial incentives as major driving force reflected from the Worldview of the company. As mentioned is this Worldview a negotiated view of the various stakeholders in an organization. We decided to eliminate the Worldview and the process of the negotiation that leads to the Negotiated Order. We also decided - in line with Pfeffer and Sutton (1994) - to eliminate the knowledge gap or as they say the "ignorance-knowing gap" (p. 87). Although there is room for the improvement of knowledge (Van Weele & Van Raaij, 2014), purchasing and supply management has made considerable progress in terms of academic and theoretical contributions. Therefore, positions 1, 2 and 5 in Model I (Figure 2-2) are no longer included in the further analysis of the knowing-doing scope. The scoping refinement resulted in an adapted gap model were Positions 3, 4, 6, 7 and 8 remain, representing the actual and ideal situations of the PM and the ICs.

The second gap model, (Model II, see Figure 2-4) shows the relationships between the remaining positions (actual behaviours of the PM and the IC, the stated or perceived ideal behaviours of the PM and the IC, and incentives for the PM and the IC). The 11 individual gaps were clustered to three gap types: implementation gaps, relationship gaps and financial incentive gaps.

Figure 2-4: Model II; overview of selected gaps.



Based on Model II the objective was to gain more insight in the individual case results. Aim is to find out whether the financial incentives can explain individual case differences on one of the aspects of purchasing theory: the use of purchasing criteria. Focus is on the differences between PM and ICs perceptions of actual versus ideal situations and between actual and ideal situations in the eyes of the PM.

The essence of the gap model depicted in Figure 2-4 above is that in practice there is the actual behaviour of the PM, the actual behaviour of the IC and the stated ideal behaviours of both. Gaps between actual and ideal behaviours are labelled implementation gaps. If the PM and the IC have different perceptions of the actual or the ideal situations, this is labelled as a relationship gap. Finally, financial gaps exist if the incentives do not align with the actual behaviours of the PM and/or the IC, and if the incentives offered to the PM and the IC do not encourage behaviour leading to the same outcome.

Purchasing knowing-doing gaps are earlier defined as the difference between what professional buyers know about purchasing (what they should ideally do) and what one actually does while interacting with the internal customer. From here, three new constructs are introduced:

- Implementation gaps are defined as the difference between ideal purchasing behaviour, based on procurement theory, and actual behaviour. We distinguish this gap for PM and for the internal customers. There is an implementation gap

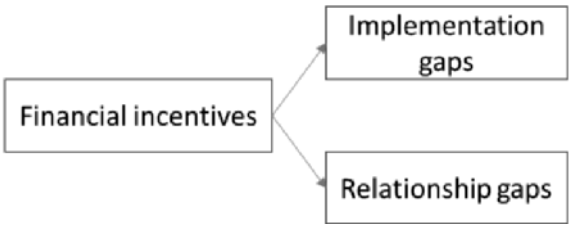
if there is a difference between actual and ideal practice by either the PM or the IC.

- Relationship gaps refer to differences in perceptions between the PM and the IC as to either the actual or the ideal buying situation. There is a buyer – IC relationship gap if buyers and internal customers perceive the actual or the ideal situation differently.

- Financial incentives, include base pay, performance-based pay and/or long-term incentives such as shares transferable into money. We distinguish three types of gaps related to financial incentives: (1) the financial incentives on offer to the PM and the IC are not targeted at a common goal, (2) the financial incentives on offer to the PM do not encourage the PM to strive for the ideal PM practices; and (3) the financial incentives on offer to the IC do not encourage the IC to strive for the ideal IC situation.

From here, our research focusses on the question whether financial incentives can influence implementation and/or relationship gaps. In an attempt to answer the question "what can we do about it?", from the perspective of the gap types. This perspective is depicted in Figure 2-5 below.

Figure 2-5: Financial incentives related to Implementation and Relationship gaps



In the next subsection, we present the summary of our case by case findings on the three gap types and draw final conclusions from our case research for the next research steps.

2.6.2 Summary of gaps found case by case

For the use of purchasing criteria we wanted to know whether there is a difference between actual and ideal practice by either the PM or the IC (implementation gaps). Furthermore, we wanted to know whether there are differences in perceptions between the PM and the IC as to either the actual or the ideal use of purchasing criteria (relationship gaps). Finally, we wanted to know whether the financial incentives of the PM and the ICs – that are distilled from the Worldview - influence implementation gaps and/or relationship gaps. See Figure 2-5.

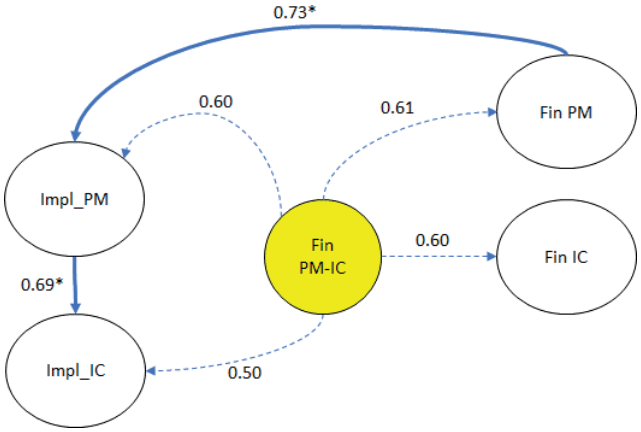
The summarized case findings on financial incentives, implementations gaps and relationship gaps are presented in table below, for details see Appendix D and E. To improve the level of intensity in the upcoming analyses, a three-point Likert scale is used to improve the discrimination power (Matell & Jacoby, 1971). First category is A (no- few gaps), second category is B (some – often gaps) and last category is C (many - all gaps).

	Financial incentives			Implementation gaps (actual - ideal)		Relationship gaps (PM- IC)	
Case	Between PM -IC (actual)	Gap for PM actual-ideal	Gap for IC actual-ideal	For PM	For IC	Actual	Ideal
A	B	A	A	A	A	B	C
B	C	C	A	C	B	C	C
C	B	A	A	B	B	C	C
D	B	A	A	A	B	C	C
E	A	A	A	A	A	C	C
F	A	A	A	B	B	C	C
G	C	A	A	B	B	C	C
H	C	C	A	C	B	C	C
I	A	A	A	A	A	C	C

Table 2-6: Summarized case findings for all gap types

We wanted to test for correlations between financial incentives, implementation gaps and relationship gaps. More specific whether financial incentives drive implementation and relationship gaps or not. A Spearman rho or Kendall Tau analysis seemed appropriate (Field, 2013). Related to the Pearson correlation coefficient, the Spearman correlation coefficient (rho) measures the relationship between two variables. Spearman's rho can be understood as a rank-based version of Pearson's correlation coefficient. Like Spearman's rho, Kendall's tau measures the degree of a monotone relationship between variables. Roughly speaking, Kendall's tau distinguishes itself from Spearman's rho by stronger penalization of non-sequential (in context of the ranked variables) dislocations. Based on a Kendall's tau correlation matrix, the model shown in Figure 2-6 was created. This model provided us insights in the effect of financial incentives on implementation gaps and on relationship gaps.

Figure 2-6: Correlation between financial incentives and Implementation en Relationship gaps.



[10]*) correlation is significant at the 0.05 level (two tailed).

There are significant correlations between the financial incentive gap for PM (Fin PM) and the implementation gap for PM (Impl_PM). Also between implementation gaps for PM (Impl_PM) and IC (Impl_IC). Although findings show that the financial incentives are correlated to the implementation gaps, we should be careful not to overstate the importance of this finding given our sample size and the use of Likert scales. The findings are sufficient to justify the focus of our research on the influence of financial incentives on purchasing knowing-doing gaps.

2.7 Overall conclusions and discussion

In this section we present findings and results. Followed by the conclusions of the multi case research, discussion and continued scoping. We end this section with the limitations of these case studies.

We set off to determine whether the purchasing knowing-doing gaps existed in the real world and if one could measure the 11 individual gaps and three gap types. We also aimed to test to what extent financial incentives play a role in reducing or at least influencing the implementation and relationship gaps. Our expectation, based on initial findings in literature (e.g. Beer & Canon, 2004, see Chapter 3 for an elaboration) was that financial incentives would have an influence and also a positive effect on reducing purchasing knowing-doing gaps.

[10] *Dotted lines: not significant in this sample.*

Findings and results

Indeed, gaps (see Model I, Figure 2-2) were found in almost every case and in almost every aspect analysed and findings made clear that it is possible to measure these gaps. In our case research, we found that financial incentives have a significant relation with gaps, although they are neither a sufficient nor a necessary precondition for closing the gaps.

Initial modelling based on insights from a broad range of academic theories and practical experience resulted in our first model (Model I). By scoping a second model, Model II, was developed. Model II presents eight positions and eight potential gaps of which initially four gaps were taken into account. Model II (see Figure 2-4) showed the relationships between the remaining positions (actual behaviours of the PM and the IC, the stated or perceived ideal behaviours of the PM and the IC, and incentives for the PM and the IC).

Individual gaps are clustered in to three types: implementation gaps, relationship gaps and financial incentive gaps. These 'gap types' (see Model II, Figure 2-4) were also found in almost every case. Findings in our case research showed that financial incentives correlate with implementation and to a lesser extent with relationship gaps. Yet, for gap types in our case research they are neither a sufficient nor a necessary precondition.

Conclusions

It seems that companies do not always implement theories or achieve the perceived ideal situation even when all the assumed preconditions in terms of financial incentives are in place. Given the ambiguous results, we need to explore deeper how financial incentives work in purchasing and especially how they are influenced by non-financial incentives.

Discussion and continued scoping

Relationship gaps refer to differences in perceptions between the PM and the IC as to either the actual or the ideal buying situation. Research on perception in purchasing and supply management focusses mainly on perception differences between a buyer and suppliers (Harland, 1996; Bakker & Kamann, 2007) or salesperson commitment (Friend et al., 2011). Anderson and Weitz (1992) introduced the concept of perception of commitment within the marketing literature. Rutherford et al. (2008, p. 384) define a buyer's perception as "the buyer's belief about the desire to develop a stable relationship, willingness to make short-term sacrifices to maintain the relationship, and confidence in the stability of the relationship". Main conclusion is that the perception of a relationship between a buyer and a stakeholder (supplier and internal customer) and the specific context are important drivers for buyer behaviour (Yeung et al., 2015). We found that PMs and ICs sometimes perceive actual situations

differently. Also do ICs perceive mutual situations differently. From our research perspective, perception differences and the different financial incentives can play a role. We skip this interesting research field of perception from our explorative research and focus only on the financial influence on our implementation gaps.

We distinguish three types of gaps financial incentives: (1) the financial incentives on offer to the PM and the IC are not targeted at a common goal, (2) the financial incentives on offer to the PM do not encourage the PM to strive for the ideal PM practices and (3) the financial incentives on offer to the IC do not encourage the IC to strive for the ideal IC situation.

The literature (e.g. Tosi et al., 1997) shows that it would also be expected that financial incentives have more influence if they are aligned between the PM and the IC. No gap between the financial incentives on offer to the PM and the IC. We focus our research on the financial incentives on offer to the PM to encourage the PM to strive for the ideal PM situation.

Limitations

We should be careful not to overstate the overall conclusions above. They should be assessed in the light of its limitations for explorative research and in particular in the following. First the limited number of cases given the different sectors and different purchasing strategies. Second, the qualitative way that scale items are tested on reliability and validity, more statistical testing could have been done. Third limitation is the fact we used Likert scales for statistical calculations, although often seen in Marketing research, this is not always appreciated in the purchasing and supply research field. The last limitation is perhaps the continuous scoping. Especially were we eliminated interesting bodies of knowledge like knowledge transfer and perception differences. In the light of the explorative character of this research, the majority of limitations mentioned will be discussed in future research opportunities (see Chapter 5).

In the next chapters, we focus on financial incentives for PM with regard to strive for the ideal PM situation, we extent financial incentives with non-financial incentives. The influence of financial incentives has proven not to be conclusive from our case based research. From incentive literature, we know that non-financial incentives can have a crowding-out effect on financial incentives (Eisenberger & Cameron, 1996; Gneezy et al., 2011). The expectation is that this effect can help to understand better why financial incentives are not always neither a sufficient nor a necessary precondition for the ‘actual’ and ‘ideal’ situations to match or for the implementation of ideal purchasing situations.

Chapter 3

Additional literature findings

[11] Parts of this chapter are based on earlier IPSERA and WION presentations (working paper IPSERA 2012 & 2015). For the purposes of this thesis, the papers are modified to avoid excessive repetition.

3 Additional literature review on incentives

This chapter starts with an introduction (3.1), followed by the classification of incentives (3.2). Then an overview is presented on job specific incentives (3.3). This chapter ends with conclusions and discussion (3.4).

3.1 Introduction

The influence of financial incentives has proven not to be conclusive from previous case based research. From this point in the research focus on financial incentives is extended with non-financial incentives. The expectation is that this can help to understand better why financial incentives are not always neither a sufficient nor a necessary precondition for the 'actual' and 'ideal' situations to match or for the implementation of ideal purchasing situations.

In preparing for our analyses of the relevant additional literature, we started by consulting several compensation and benefit consultants[12]. This led to the first suggestions for new research material. We carried out additional analysis on several related concepts such as: 'non-financial incentives', 'buying behaviour' and 'social norms'. These concepts have individually extensively been discussed in academic research, partly also in purchasing and supply management (Carter and Ellram, 2003). Note that we do not attempt to present a comprehensive review of these concepts in general.

In the next section (3.2) we will first introduce the different types of financial and non-financial incentives.

3.2 Classification of incentives

3.2.1 Introduction

The term 'incentives' is used to refer to inducements offered with the intention to increase performance (Patten, 1977). Building on the model of Rosenstiel (1975), we adopt a broad definition of incentives that includes all financial, non-financial, material and non-material incentives that an organization offers.

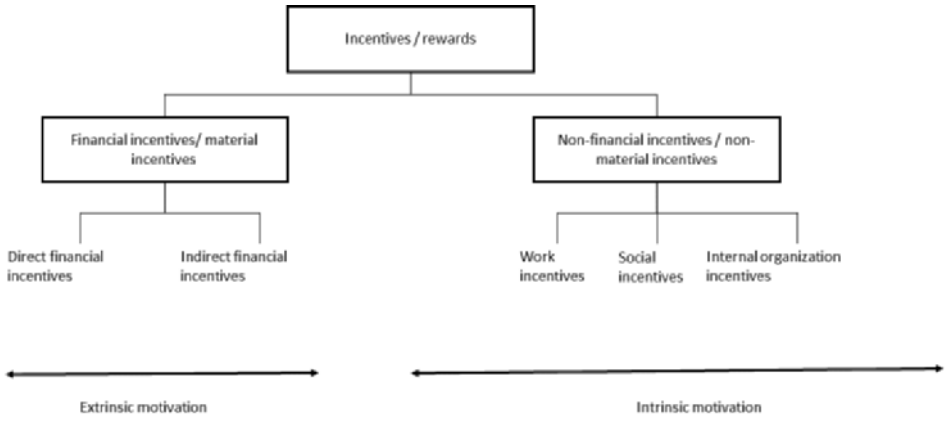
[12] Drs. Bas van den Brink, drs. Machiel Hermans, dr. Henriette van den Heuvel.

Rosenstiel (1975) distinguishes five categories of incentives:

- Work incentives: provided by the work itself (e.g. autonomy and growth through career development).
- Social incentives: provided by interaction with colleagues.
- Internal organization incentives: provided by the organization itself (e.g. organizational structure, leadership style).
- Direct financial incentives: provided by monetary incentives (e.g. pay-for-performance).
- Indirect financial incentives: provided by usage of company goods or services (e.g. phone and internet access).

Incentives produce or reinforce desired behaviour in employees and reduce the likelihood that unwanted behaviours will occur (Grant, 1999). An incentive is seen as a situational condition that can motivate employees because of their individual structure of needs with regard to a certain performance level of behaviour within the context of an organization (Rosenstiel, 1999; Bau & Dowling, 2007). Determined by one's sorts of needs and sources of satisfaction, extrinsic and intrinsic incentives can appeal to extrinsic or intrinsic motives (VonKortzfleisch, 2001). Based on Rosenstiel and VonKortzfleisch, we have classified incentives and motives as shown in Figure 3-1 below.

Figure 3-1: Classification of incentives, rewards and motives.



In this stage of our research, we extended the focus on financial incentives with non-financial incentives; in particular with social incentives. Financial incentives can encourage desired behaviour, boost performance (e.g. Baker et al., 1988; Jenkins & Gupta, 1982) but also can have a crowding out effect on the incentivized behaviour and negatively influence motivation (Eisenberger & Cameron, 1996; Gneezy et al., 2011). Social incentives influence the desire to conform to what others do (Chen et al., 2010). Social incentives relate closely to social norms. A social norm is a description of a

behaviour that is acceptable by a significant group of individuals, is mutually expected in this group, and enforced in case of deviations (e.g. Appelbaum et al., 2009). Like social incentives, social norms interact with financial incentives and can also have a crowding out effect.

The subsections below (3.2.2 and 3.2.3) provide insights from literature in financial and non-financial incentives.

3.2.2 Additional insights on financial incentives

Most of the research on incentives concludes that financial incentives – such as base pay, performance-based pay and long-term incentives – do influence people's behaviour (Beer & Cannon, 2004). By reviewing the literature, we came to additional insights that are clustered into seven topics that provide essential context on the influence of financial incentives on purchasing knowing-doing gaps.

Financial incentives and performance

The concept of financial incentives has been defined in many ways (DeMatteo et al., 1998; Jenkins et al., 1998 for overviews). Unfortunately, researchers do not always clearly state or define what they mean by financial incentives. As already noted, we see the term as covering three aspects: base pay, performance-based pay and long-term incentives (Milkovic, 1990). Researchers also refer to specific incentive systems or contracts such as tournament systems, piece-rate contracts and all kind of bonus systems (Govindarajulu & Daily, 2004; Hoffman & Rogelberg, 1998 for overviews) and to whether the schemes are individual- or group-based. The type of work (blue collar or white collar) and organization sizes (Lee, 2009) also differ in the various case studies. The literature also shows a range of views as to what constitutes performance. Performance can be seen as behaviour-based or viewed from a quality or quantity perspective (Cerasoli et al., 2014), or it terms of financial performance (Gerhardt & Milkovic, 1999). Incentives have been shown to boost performance in the laboratory, in the field and in simulations (Jenkins, 1986, p 174). The strongest relationships were found in simulations, followed by field and laboratory experiments (Jenkins et al., 1998).

We attribute the fact that, after so many years of research, there are still proponents and opponents to all these differences in definitions and approaches. Nevertheless, we accept the conclusions from two meta-studies that there is evidence for a positive relationship between financial incentives and performance (Jenkins et al., 1998) and that the joint impact of incentives and intrinsic motivation is critical to performance (Cerasoli et al., 2014).

On a practical level, Cerasoli et al. (2014, p. 998) argue that "tasks that are straightforward, highly repetitive and perhaps even less inherently enjoyable, should be more closely linked to extrinsic incentives. Tasks that require a great deal of

absorption, personal investment, complexity, and overall quality should be less linked to incentives and much more closely linked to intrinsic motivation". This shows a shift from the early 1970s when "the one issue that should be considered by all organization theories is the relationship between pay and performance" (Lawler 1971, p. 273).

Financial incentives and impact on creativity

"If you want people to perform better, you reward them, right? Bonuses, commissions, their own reality show. Incentivize them. But that's not happening here. You've got an incentive designed to sharpen thinking and accelerate creativity, and it does just the opposite. It dulls thinking and blocks creativity." (Dan Pink, The puzzle of motivation: www.ted.com/talks/dan_pink, Aug 2009).

Here, Pink is referring to work by Ariely et al. (2009) who, in their Harvard Business Review-paper "Large stakes, big mistakes", offer an opinion on the reason for this fallible belief in rewarding. They argue (p. 452) that most of the research is economic-based and focused on financial incentives, and that the psychological evidence that rewards do not always work tends to be overlooked: "unlike the relationship between pay and motivation/effort, the relationship between motivation/effort and performance has not attracted much attention from economists, perhaps because the belief that increased motivation improves performance is so deeply held". Psychologists have documented situations where increased motivation and effort can result in a decrease in performance - a phenomenon known as "choking under pressure" (Baumeister, 1984, p. 610). Achtziger et al. (2014) also opt for an approach that differs from the business-economic viewpoint that is the norm in purchasing-related schemes and conclude, based on neural evidence on reinforcement, that higher incentives can impair performance.

Our conclusion is that, for many tasks, the introduction of, or an increase in, incentives is likely to have a positive impact on performance. However, one should not assume that introducing or raising incentives will automatically improve performance. Beyond some threshold level, raising incentives may decrease motivation and have perverse effects on performance.

Higher financial incentives and higher performance

According to Ariely and Gneezy (2009), an over-motivated principal might hire an agent to perform a task at a more optimal, reduced incentive level. They advise principals to be aware of the performance-debilitating effects of high incentives. Their conclusions are reinforced with similar arguments and statements by many others (Lepper & Green, 1978) that increased motivation as a result of financial incentives does not necessarily lead to better performance. This conclusion is based on observations where sometimes very large incentives were given for tasks that required creativity, problem solving and memory but failed to enhance performance.

Ariely and Gneezy (2009) found that, across many tasks – albeit with some exceptions – that giving higher monetary incentives leads to worse performance. The finding that performance is superior for moderate incentives relates to Yerkes-Dodsons law[13], according to which, beyond an optimal level of arousal for executing tasks, further increases in arousal can lead to a decrement in performance.

Financial incentives for individuals and groups

Research on the relationship between individual financial incentives and performance has been subjected to meta-analyses on more than one occasion (Jenkins et al., 1998; Cerasoli et al., 2014). Group or team-based incentives have also been studied by researchers (Zenger & Marshall, 2000; Messersmith et al., 2011) and also featured in some meta-studies (Garbers & Konradt, 2014; Condly et al., 2003).

Research on the interaction between financial incentives and team performance has the same definition issues as mentioned earlier with individual incentives and performance. In addition, the interaction is more complex (Babcock et al., 2010). There are important differences between the impact of team-based and individual-based incentives on performance (Aime et al., 2010; Shaw et al., 2001). Team incentives are beset with issues including the free rider problem (Holstrom, 1979), moral hazard (Jackson and Schneider, 2013) and simply lying (Conrads et al., 2011). In their seminal work on team incentives, Danilov et al. (2013) speak of "the dark side of team incentives", with their experimental results revealing that, when group affiliation is strong, inferior products are recommended significantly more often under team incentives than when individual incentives are in place.

There are two dominant approaches for the use of team incentives: equitably[14] and equally distributed incentives. There is strong empirical evidence that equitably distributed incentives lead to higher performance than incentives distributed equally (Kepes et al., 2009). Sinclair (2003) found that teams with individual incentive systems (i.e. equitable schemes) were more productive than teams with team-based incentive systems (equal distributions). Garbers and Konradt (2014) found evidence that the effect of team-based rewards was higher than that of individual-based rewards. The effect further depends on various aspects such as team size and setting. Stronger relationships were found in field studies than in laboratory experiments. In our research, we adopt the conclusion of Garbers and Konradt that, to increase motivation, it is, generally speaking, better to reward employees as a team. Here, the team composition as well as the reward characteristics need to be carefully considered, especially given the indication from recent studies (e.g., Conrads et al., 2013) that team incentives may induce lying.

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13 The Yerkes–Dodson law is an empirical relationship between arousal and performance, originally developed by psychologists Robert M. Yerkes and John Dillingham Dodson in 1908.

14 The perception that each team member would attain the same rewards if they put in the same amount of effort; if not, feelings of unfairness will result (Pritchard et al., 1989; Thornburg, 1992).

Differentiation of financial incentives

The work of Huselid et al. (2005) goes a step further in differentiation: not only in people, but also in positions. They use the terms A-Players and A-Positions. In their opinion a great work-force is made up of great people. They see it as justified that so many companies spend a lot of time in identifying, developing and retaining A-players. What it perhaps remarkable is that they found that very few companies used a systematic approach to identifying – potential – A-players, with football clubs being the exception rather than the rule. They also found that even fewer companies managed their A-players in such a way that they are able to deliver A-performance. They developed a strong case for treating and paying these people better. This was not so much based on their position in the organogram, but on their potential contribution to fulfilling the company strategy. This amounted to a plea for performance-based payment. This article led to interesting reactions. One, from an HRM manager of a large US firm, used an analogy from Roman times, when the ordinary people revolted causing the 'A-players' to live alone in an empty city. The claim was that rewarding the best people would not be a sustainable solution. Huselid et al., (2005) are not the only ones to believe in differentiation when applying financial incentives. Lepak and Snell (1999) share this view some years earlier recognizing that not all employees possess knowledge and skills of equal strategic importance.

Financial incentives and strategic alignment

Subramony (2009) reviewed the literature on the relationship between human resource management (HRM) bundles and firm performance. HRM bundles are made up of complementary practices. For instance, motivation-enhancing bundles provide employees with adequate levels of direction and inducement. It is widely accepted that HRM bundles can affect the performance of firms (Boselie et al., 2005; Ferris et al., 2004; MacDuffie, 1995). It is also argued that HRM should not be viewed in isolation but should be systematically assessed with organizational goals, in which the role of an HR manager is to be a strategic partner (Ulrich, 1998). When aligned with each other and with strategical goals, HRM bundles, and thus financial incentives, will have a positive effect on overall strategy and firm performance. The deployment of human resources to enable an organization to achieve its goals and their alignment with corporate and business strategies is a crucial determinant of the success of the organization (Mathis & Jackson, 2011; Beer et al., 1984). The same has been argued for purchasing and supply management (Baier et al., 2008; Bernardes & Zsidisin, 2008, p. 216). Here, Barnardes and Zsidisin conclude: "… Purchasing and Supply Management needs to have a seat at the table and then preferably with HRM to make sure that the financial incentives are aligned with PM strategy and both are aligned with overall strategy".

Financial incentive systems and their practical implications

Pressure for higher performance has led corporations to continually search for managerial practices that will enhance competitiveness (Beer & Cannon, 2004). A large number of organizations have explored how financial incentives could be linked to desired behaviour in order to improve effectiveness (Gerhart & Rynes, 2003; Pfeffer, 1998). This has led to a growing number of pay-for-performance (PFP) plans (Schuster & Zingheim, 1992). Beer and Cannon (2004) list researchers who have been able to demonstrate that implementing PFP plans leads to impressive average returns on money. However, based on several PFP experiments in the mid-1990s, some, including Pfeffer (1998), concluded that implementation was not always successful and that there were significant problems with implementing PFP programmes. Two main barriers were identified: firstly, in linking performance to effort and secondly, in linking pay to performance (Beer & Canon, 2004). Gerhart (2001) argued that successful PFP programmes have the following characteristics: (1) culture discourages opportunism, (2) top management reinforces this culture by its example and (3) employees have long term careers or their reputation is a valuable commodity. Beer and Canon (2004) concluded that there are no universal best practices for implementing PFP. The effectiveness of PFP for an organization depends on, sometimes unique, aspects of its culture and one must be careful in generalizing from one organization to another.

3.2.3 Additional insight on non-financial incentives

Non-financial incentives are often related to intrinsic motivation (VonKortzfleisch, 2001). They can be provided by the work itself, provided by interaction with internal colleagues and by incentives provided by the organization itself (e.g. organizational structure, leadership style). By reviewing the literature, we came to additional insights that are clustered into four topics that provide essential context on the influence of non-incentives on purchasing knowing-doing gaps.

Intrinsic and extrinsic motivation

The literature on motivation has a long history going back to research on the influencing of employee behaviour. In responding to Taylorism, Maslow (1943), Herzberg et al., (1959), Vroom (1964), McGregor (1960) and others researched what actually motivated people. The early discussions saw rather sharp contrasts. Herzberg et al. (1959) described two groups of motivators: one group responded to the need to develop in one's occupation as a source of personal growth whereas the second group, which also underpinned the first, was associated with fair treatment in terms of

compensation, supervision, working conditions and administrative practices[15]. Vroom (1964, Sheridan et al., 1973) also refers to two types of behaviour in his Expectancy Theory of Motivation in explaining the behavioural process in which individuals choose one option over another. McGregor (1960) introduced his ideas in terms of Theory X and Theory Y in which different types of employees responded positively to different motivational approaches. Theory Y argued that management practices that provided objectives and rewards would motivate employees who are (1) not lazy, (2) capable of self-direction and (3) capable of improving organizational effectiveness. In contrast, Theory X viewed employees as lazy, incapable of self-direction and as having little to offer in terms of organizational problem solving. This stream of motivational research came with the growing awareness that person-as-machine approaches (Landy & Conte, 2004) had failed and that knowledge on people and their behaviours was becoming increasingly important so as to know how that behaviour could be influenced.

Crowding-in and crowding-out

Gneezy, Meier and Rey-Biel (2011, p. 206) summarized much of the ongoing discussion on incentives and concluded that "incentives do matter, but in various and sometimes unexpected ways". Main outcome of the ongoing discussion is that financial incentives have two effects on behaviour: the standard direct price effect, which makes the behaviour incentivized more attractive, and an indirect psychological effect (Gneezy et al., 2011). In some cases, the psychological effect works in the opposite direction to the price effect and can crowd out the incentivized behaviour. Lepper and Greene (2015) term this effect the 'hidden costs of reward'. For example, Frey and Jegen (2001) give circumstantial evidence that children who are paid to mow the family lawn, once they have received money for this task, will expect to receive money the next times they do this, and indeed for other household tasks. Although there are no hard examples from purchasing and supply management, in line with this example one could suggest that paying buyers for achieving a cost reduction could induce an unwillingness to seek cost reductions that were not rewarded. Most of the published examples of crowding out seem to come from welfare research. There are examples related to the use of financial incentives to change individual behaviour to achieve health-related outcomes, including smoking cessation, weight loss and blood donations (e.g., Parke et al., 2011; Promberger et al., 2011).

Locke and Latham (1990) argue that intrinsic motivation rarely operates in isolation from other types of motivation. Cerasoli et al. (2014) conclude from their 40-year meta-analysis that incentives and intrinsic motivators are not always "antagonistic". Incentives can successfully coexist with intrinsic motivation depending on the type of performance desired and the type of incentive offered. As such, external incentives can strengthen intrinsic motivation, an effect Frey and Jegen (2001) term as crowding-in.

[15] The authors actually made a distinction between two factors: motivational and hygiene factors. Hygiene factors were seen as dissatisfiers from the context or environment of the work and so named because they acted in a manner analogous to the principles of medical hygiene.

Social norms and their impact on motivation and behaviour

Literature describes a large variety in definitions and typologies of norms, ranging from intense discussions about 60 years ago in sociology (Gibbs, 1965; Morris, 1956) to modern times where we find norms that have been characterized in two different ways depending of the discipline involved: (1) prescriptive norms (unwritten rules about what one should do) and proscriptive norms (unwritten or sometimes even written rules about what one should not do), (Wilson et al., 1996); (2) descriptive norms (how apparently everyone behaves) versus injunctive norms, transmitting group approval about a particular type of behaviour; it dictates how an individual should behave (e.g. Interis, 2011; Cialdini et al., 1990; Schultz et al., 2007). A descriptive norm is followed because someone copies the behaviour he or she observes around him or her. Usually, there are no sanctions when a descriptive norm is not followed. An injunctive norm is followed because 'it is the thing to do', with the usual example of lowering one's voice in a library. Here, either external sanctions or self-imposed sanctions apply (Interis, 2010). One could conclude that professional norms, especially dealing with ethical issues, fall into the categories 'prescriptive' or 'injunctive' norms, while in exercising practicalities, more descriptive norms play a role, like using software, templates, concepts and terminologies. If you do not use portfolio analysis, nobody will actually punish you, no professional organization will take away your membership. Proscriptive norms typically apply in cases such as dealing with bribery. Here, sanctions by professional bodies, companies and law makers do apply.

Both in sociology and social psychology researchers recognize that smaller group units, such as a team or an office, may also endorse norms separate or in addition to cultural or societal expectations (Jackson, 1965) which in fact also applies to professional norms applying to a group with a distinctive profession. These norms and the related expected behaviour and application of artifacts – models, concepts and software – come next to the expectations arising from the company Worldview and the 'normal' societal expectations (cf. Rivis & Sheeran, 2003 for the role of descriptive norms in this context). Professional associations may be a good incubator for establishing norms for professionals.

Professional norms represent a special case of social norms, where the group is defined by belonging to the specific profession, and behaviour specified by the norms pertained to profession-specific behaviour (Appelbaum et al., 2009). Professional norms may arise bottom-up, as a result of shared common practices being standardized (e.g. Bourdieu, 1977). At the same time, professional norms might be established top-down; especially when the profession has an authoritarian representative. An example in point are professional associations, that may form a fruitful ground for breeding professional norms that affect values, and behaviour, of professionals. Professional associations generate a venue for meeting peers in the same profession, rather than colleagues in the same firm, but at various levels of hierarchy or chain of the production.

Isomorphism and financial incentives

Isomorphism is a concept used among scientists such as sociologists to describe the process of homogenization, a constraining process (Hawley, 1986) that forces parts or individuals of organizations to resemble other parts or individuals of organizations such that the environmental characteristics are increasingly compatible. A general definition of isomorphism is 'a similarity of the processes or structure of one organization to those of another as a result of imitation or independent development under similar constraints'. There are three main types of institutional isomorphism: coercive, mimetic and normative (DiMaggio & Powell, 1983). Coercive isomorphism is about the problem of legitimacy which encourages imitation, mimetic isomorphism results from responses to uncertainty. Normative isomorphic is about pressures brought by professions, peer professionals or education. Isomorphism is used to describe and better understand the process of bureaucratization of organizational fields. It addresses the problem of what DiMaggio and Powell (1983) called the "startling homogeneity of organizational forms and practices". This presents a danger to organizations by reducing the ability to change. DiMaggio and Powell argue that isomorphism can also be applied to professional norms since these are long-term rational constructs formed under a somewhat normative pressure.

Since buying professionals have professional norms, isomorphism and normative pressure can influence their professional norms, and this can lead to professional normative behaviour, which is understandable from a rational perspective but not always efficient. From empirical investigations by Goodrick and Salanic (1996) we learnt that professional norms influence the effect of financial incentives. Anderson (2009, p. 81) similarly noted "the claim that norms will lead professionals, regardless of their sector and incentives".

In Section 3.3 below, insights on incentives for purchasing and job-specific incentives are described.

3.3 Purchasing and job specific incentives

3.3.1 Organizational buying behaviour

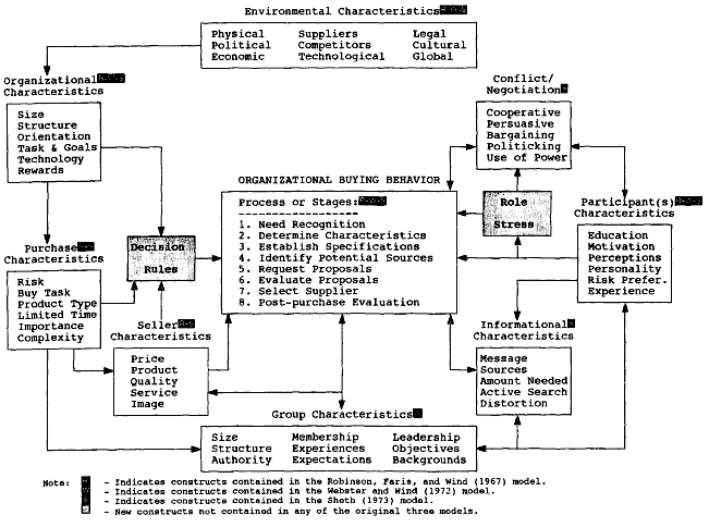
In the late 1960s - early 1970s, three models of organizational buying behaviour (OBB) were developed by Robinson, Faris and Wind (1967), Webster and Wind (1972) and Sheth (1973). OBB developed from a marketing perspective in which selling firms needed to possess an understanding of the buying behaviour of customer firms (Johnston & Lewin, 1996). The models provided several constructs that were expected to influence organizational buying behaviour. Since then hundreds of conceptual and empirical articles have been published that either extend or test these models (Johnston & Lewin, 1996). The models broadly agree that organizational buying behaviour can best be described as a process or made up of stages: from need recognition to post-purchase evaluation. The three models also recognize the importance of environmental influences as well as political and economic ones, plus

organizational influences, such as size, structure and rewards, and individual participant characteristics, including education, perception and motivation, in an organization's buying behaviour. Although it seems widely recognised that the research on organizational buying, based on the abovementioned models, has not delivered its expected potential to practice, constructs such as 'buying centre', 'decision stages' and 'conflict resolution' are now an accepted part of the lexicon of organizational buying (Anderson & Chambers, 1985). Since both buyers and their internal customers belong to the same 'buying centre', incentives should be aligned if collaboration is to be stimulated. A situation in which organizations rewards buyers for other behaviour than their internal customers (Webster & Wind, 1972) is potentially harmful.

In our research where we focussed on incentives and the way they influence the implementation of purchasing theory or purchasing ideals, and stimulate collaboration between buyers and their internal customers, we found many interfaces between rewards/incentives, individual buyer behaviour and internal collaboration.

The OBB models, which were integrated in a single OBB integrative framework by Johnston and Lewin (see Figure 3-2), provided insights, especially into the relationships between the 'organizational characteristics', 'purchasing and seller characteristics', 'conflict/negotiation' and 'participant characteristics' constructs, that we had incorporated in our own initial modelling.

Figure 3-2: Integrated framework Johnston and Lewin, 1996.



Organizational buying behaviour involves many people in the decision process with complex interactions between people and among individual and organizational goals

(Webster and Wind 1972). Rewards and incentives play an important role in our research and the OBB models all mention rewards as a motivator or influencer of buying behaviour (see Table 3-1 below).

Nr.	Model	About rewards
1.	Robinson, Faris and Wind (1967)	"..., it can be hypothesized that buyers tend to make those decisions which they perceive to have the best chances of improving their present situations."
2.	Webster and Wind (1972)	"The formal organization exerts its influence on the buying center though the subsystems of tasks, structure (.... rewards), technology and people."
3.	Sheth (1973)	"The organization typically rewards each individual for excellent performance in his specialized skills, so the purchasing agent is rewarded for economy, the engineer for quality control and the production personnel for efficient scheduling."

Table 3-1: Overview of views on rewards as a motivator in the three OBB models.

Anderson and Chambers (1985) developed two reward based models for buying behaviour: the Motivational Model with intrinsic and extrinsic rewards for the individual buyer and the Group Consensus Model that adopts collaboration perspective with group rewards. The authors argue that the reward/incentive aspects of buying behaviour have not been developed to their full potential despite the fundamental proposition that an individual's behaviour in organizations is largely determined by the way in which their activities are rewarded and measured.

3.3.2 Incentives and job characteristics

MacLeod and Parent (1999) recognized that there were various compensation systems used to motivate employees. They looked into the different forms of compensation based upon the interplay between job characteristics and the incidence of a particular form of compensation. They argued, given the complexity and variation in compensation systems, that no single theory could explain the differences in empirical data, and therefore combined a number of theoretical concepts derived from agency theory and the incomplete contract model. Their main conclusions were: 1) jobs with high power incentives – piece-rate or commission rate contracts – were associated with greater job autonomy; 2) some job characteristics affect the likelihood of piece-rate contracts differently from bonus pay or commission contracts; 3) more complex jobs are associated with incomplete compensation contracts and less use of piece-rate approaches.

3.3.3 The creation of incentives

The role of employees in generating firm performance has received increasing attention (Steigenberger, 2013). There are many definitions of performance. We combine two aspects: performance is: "synonymous with behaviour… is something that people actually do and can be observed" Campbell (1993) and "is achievement-related with some evaluative component" (Motowildo et al., 1997).

Employees came increasingly to the fore as the feeling grew that resources on which competitive advantage had traditionally been built, such as technology or economies of scale, were becoming easier to imitate. As such, achieving a completive advantage through human capital became more relevant in creating a sustainable competitive advantage (Guthrie et al., 2009). Given this broad acceptance of the importance of employees for firm performance, research has investigated ways to develop the means to improve the skills of employees and their knowledge base. This research stream, which was rooted in the earlier work of, for example, Vroom (1995) on motivating individuals, led to research on high-performance working systems (HPWS) (Hustled, 1995; Guthrie, 2001). The HPWS research stream argues that strategic HRM could inspire the workforce to work harder and better and thereby increase the competitive standing of the firm (Steigenberger, 2013).

HRM is not only the department in many organizations that is responsible for human resources, it has become a research domain in its own right. What HRM is responsible for, and where it is not, remains a point of discussion in many organizations and among scholars. Its roles and tasks are seen as difficult to sort into some kind of order (Bowleg, 2012). The Michigan Model (Devanna et al., 1981) and the Harvard Model (Beer et al., 1984) have become popular in academia and practice for supporting these sometimes fundamental discussions. Here, one should mention one of the most cited HRM authors, Dave Ulrich, whose 'New mandate for HRM' (Ulrich, 1998) created clarity concerning HRM roles and tasks (Sells, 2003). These insights and models make it quite clear that 'compensation' and 'benefits' constitute an important HRM topic, and one of the instruments that organizations can use to influence the behaviour of employees. In this growing HRM field, external and internal motivations continue to be seen as relevant, and there remain proponents and opponents of the proposition that financial incentives can improve performance quality and quantity. HRM-motivation bundles (Subramony, 2010) and financial incentive systems have to be tuned to the specific situation of any organization and especially to its strategy.

3.4 Conclusions and discussion

Conclusions

When trying to accommodate all the views and arguments it seems that the differences in whether financial incentives influence performance or not, seem mainly to depend on differences in research methods, definitions of performance and scope (organization, group or individual). We see differences in, for instance, the definition

of performance, in the approach with experiments and other methods used, with both group and individual methods, and between different incentive contracts, etc. Performance can be defined as the impact on organizational performance, on individual or group performance and it can sometimes be seen as financial performance, sales performance or individual performance. Experiments seem to produce different results to non-experimental research. Outcomes of individual incentives differ from those when group incentives are employed, and research suggests that tournament systems have different outcomes than performance-based pay. When we compare research findings, it seems that these differences are not always taken into consideration, which in itself focusses the discussion back on when 'it' – whatever 'incentive' it is – works and when it does not. Sometimes financial incentives influence behaviour and sometimes they do not. Nevertheless, there does seems to be a general consensus, including between economists, sociologists and psychologists, that straightforward, highly repetitive and perhaps less inherently enjoyable tasks should be linked to financial incentives, whereas more complex or more creative processes should not.

With regard to our model (see Figure 2-4), financial incentives can have a positive effect on purchasing knowing–doing gaps for both PM and for the ICs. Aware that PM and IC knowing-doing gaps can differ, we would expect whichever of the two functions has the smaller gap to be the one most strongly driving the organization. This is because the one with the smallest gap better represents the Worldview of the organization. Financial incentives can also have a positive effect on the buyer-internal customer relationship gap. Actual and ideal relationship gaps can also differ, and the smaller the actual and ideal relationship gaps, the better the relationship. We would expect financial incentives to have a greater influence on the relationship gaps if the incentives are aligned between the PM and the IC.

We have not found evidence that incentives for buyers and their internal customers should work in an essentially different way than what researchers have found in the last four or five decades. What we did see was that the research stream on the role of rewards and incentives in an organization's buying behaviour has tailed off since the end of the 1990s, although the stream of reported experiments involving incentives has kept on growing.

Overall, we have found further theoretical and practical support for our earlier presented findings. Additional findings in literature confirm that financial incentives can influence behaviour in our specific buying context, knowing that non-financial incentives in particular professional norms of buyers can have a crowding-out effect on the incentivized behaviour.

Discussion

Literature is growing on what actually determines the choices and the set of recipes applied in daily practice by purchasing managers (Spender, 1989; Bakker & Kamann, 2007) and to what extent their actual behaviour deviates from the textbooks or even

their own 'ideals' (Boodie & Kamann, 2015). One of the concepts that plays an important role in this context is the concept of 'Worldview' or Socially Negotiated Order (Eden, 1992). 'The way everything is being done, including purchasing' is a broad description of this concept. It is supposed to be reflected in the recipes applied, tools employed, protocols and procedures followed and even the attitudes adopted. This Worldview is a negotiated view of the various stakeholders in an organization, where power and/or status determine how much impact each particular stakeholder – or coalition of stakeholders - may have in shaping the Worldview. Sectoral differences in the role, power, views and status of functional areas and personality issues will all lead to company specific Worldviews. The final resulting Worldview also is reflected in the financial incentives and it may well compete with particular professional views a manager learned – or was conditioned to use – as a result of professional courses followed and other educational socializing contacts leading to 'isomorphism' in attitudes and behaviour (DiMaggio and Powell, 1988) among a particular population of professionals. This may even lead towards a locked-in mental map[16] (Huff, 1990). Kamann and Bakker (2006) estimated in a Structural Equation Model the impact by the Worldview to be more significant than the collective result of all the conditioning networks the manager went through.

This is in line with what le Grand (2003) suggests, in that different types of motives coexist and affect behaviour and social norms interact with economics incentives (Lindbeck, 1997). It may even be the case, as we learned from empirical investigations by Goodrick and Salancik (1996) that the effect of economic incentives depends on the professional norms. "A profession can be defined as an occupation with specialized, theoretical knowledge and intra-occupational norms (…), and the claim is that the norms will lead professionals from the same occupation to behave and perform similarly, regardless of their sector and incentives." (Andersen, 2009, p. 81). We assume, that the stronger a professional peer organization exists, the more this applies. In countries where since decades strong professional purchasing organizations exist - like the U.K., the US and the Netherlands - we may assume a maximum degree of isomorphism in tools and views applied, through courses, textbooks and conferences. All reflected in particular professional norms.

After this additional literature review, the focus of our research has again been refined. Focus is now on the specific role of financial incentives for professional buyers when it comes to implementing purchasing theory given a very recognizable collaborative task situation (in balancing price and quality) with their internal customers. Professional norms refer to the type of behaviour that professionals are expected to adhere and are expected by their profession to follow. This not only applies to an ethical code of conduct, but also to the application of certain analytical tools and a certain conduct vis-à-vis suppliers, internal customers and other stakeholders. Theses norms are specific to each profession, delineate acceptable conduct within a profession, and may be considered as professional ethics in general. Provided this is the case, they involve a value statement. They stipulate what behaviour within a profession is 'good' and will be appreciated and/or what behaviour within a profession is 'bad' and should be

[16] A mental map is a representation of a first-person's perspective of an area and how they interact with it.

avoided. The question is then to what extent PMs are influenced by their professional norms and how does this interact with financial incentives? To what extent are purchasing managers influenced by the portfolio theory of Peter Kraljic (Kraljic, 1983) in their practical consideration of whether to focus on price or on quality (knowing that their internal customer perhaps favours higher quality) and how does this interact with monetary incentives? Given this discussion, we became curious to what extent these professional norms actually do play a role.

In the next chapter (Chapter 4) the influence of professional norms on incentivized behaviour will be discussed and an introduction is made of our laboratory experiments in which we test this potential influence.

Chapter 4

Professional norms as incentives: experiment with professionals and students

[17] This chapter is based on earlier material presented IPSERA and WION material (working paper IPSERA 2016 & WION 2016). For the purposes of this thesis, the paper is modified to avoid excessive repetition. An adapted version of this chapter is under review for publication. This research was conducted in collaboration with Jana Vyrastekova and Dirk-Jan Kamann. Jana Vyrastekova is assistant professor in Experimental Economics, Behavioural Economics and Game Theory at the Radboud University, Department of Economics, Nijmegen, The Netherlands. Dirk-Jan Kamann is research Professor in Supply Management at the University of Pannonia, Faculty of Business and Economics, Veszprém, Hungary. The principal researcher of this thesis was responsible for the research questions, literature search, data collection, first analyses and the final version of this manuscript. Co-authors provided input and detailed feedback for the improvements of this manuscript.

4 Professional norms as incentives: experiment with professionals and students

This chapter starts with an introduction (4.1), followed by insights of the use experiments in purchasing and supply research (4.2). Then the theoretical observations (4.3), our experimental sessions and hypotheses (4.4) are presented. This chapter ends with the decisions of the participants (4.5) and the conclusions of our experiment with purchasing professionals and students (4.6).

4.1 Introduction

As mentioned in Chapter 3, different types of motives coexist and affect behaviour. Next to financial incentives, various types of social norms also effect behaviour and social norms can interact with financial incentives (Lindbeck, 1997; Le Grand, 2003). We focus on professional norms as they are a type of social norms and therefore also can influence the effect of financial incentives on behaviour (Goodrick & Salancik, 1996). "A profession can be defined as an occupation with specialized, theoretical knowledge and intra-occupational norms (…), and the claim is that the norms will lead professionals from the same occupation to behave and perform similarly, regardless of their sector and incentives." (Andersen, 2009, p. 81).

Nevertheless, it is still unclear to what extent professional norms affect behaviour as the empirical evidence is scarce. We wanted to know to what extent these professional norms actually do play a role in influencing the behaviour of purchasing professionals. One might label this impact of professionals from the purchasing occupation – when found - as the 'purchasing peer influence'. Given Andersen's (2009) plea to combine the various motives since they are all potentially important, and the effects of one motive on behaviour and performance might very well depend on the other motives, we understood that in particular the interactions between financial incentives and professional norms should be investigated.

In this chapter, we present experimental evidence on professional norms as incentives, as potential drivers of behaviour. Laboratory experiments allow researchers to study the human behaviour aspect (Bendolly et al., 2006) in a controlled incentivized setting. Experiments offer an opportunity to invest causal relationships and theories (Croson & Donohue, 2002), for example interpersonal interaction of buyers and suppliers (Bendolly et al., 2010).

In the next section (4.2) an introduction is given on the use of (laboratory) experiments in supply chain research.

4.2 The use of experiments in purchasing and supply research

4.2.1 Introduction

In logistics and supply chain research, laboratory experiments can provide a methodology that passes rigorous scientific scrutiny (Deck & Smith, 2013). Although there are some specific logistics and supply chain topics, such as procurement auctions, where experiments have been used extensively, their use in addressing other purchasing and supply management problems is not common (Carter and Ellram, 2003; Wynstra, 2010). We found some examples for purchasing and supply management research where experiments are used. For example, in field experiments with suppliers (Anderson & Wynstra, 2010; Tazelaar & Snijders, 2004). Snijders et al., (2003) used an experiment to analyse how well purchasing managers were able to judge the likelihood of problems for a given purchasing transaction compared to the performance of an algorithm. Kamann et al., (2006), used an experiment based on the prisoner's dilemma with a group of purchasing managers. Beside these few examples, the use of experiments seems to be relatively scarce despite the fact that several senior purchasing and supply management scholars (e.g. Hul, 2012; Weele & Van Raaij 2014) urge for the use of new and sometimes more appropriate, methods in place of the traditional survey. Deck and Smith (2013) offer two possible explanations for this underutilization. First, they see that articles concerning experiments are published in journals that are rather specialized and therefore not familiar to many researchers. Second, they claim that researchers have "nagging" questions about the ability to extrapolate from laboratory to the natural economy. Deck and Smith[18], as proponents of using experiments, address four commonly used critics in the use of laboratory experiments and Table 4-1 presents their arguments in favour alongside the arguments against experiments.

Argument against	Argument in favour
Laboratory experiments lack realism or complexity	".. this is actually a major virtue; theoretical models need to abstract and focus on observable critical elements"
The subjects lack sophistication (student pools)	"...students are not required for an experiment.... And it has been common to examine robustness with different subject pools. "
The stakes are too low	"If the level of stakes is thought to be important, ... run experiments with high stakes..."
Field experiments are more informative	"Information from field experiments provide information complementary to lab information... '

Table 4-1: Overview of arguments against and in favour of using experiments in research.

18 Vernon Smith and Daniel Kahneman were awarded the 2002 Nobel Prize for economics "for having established laboratory experiments as a tool in empirical analysis, especially in the study of alternative market mechanisms."

Deck and Smith (2013) and social scientists such as Falk and Heckman (2009) have rebutted arguments concerning the ability to extrapolate from experiments to the natural economy. Deck and Smith (2013, p. 13) conclude that: "Laboratory experiments have the potential to inform a myriad of research questions in logistic and supply chain management".

With an increasing focus on the more behavioural aspects of purchasing and supply management, there is a growing notion that other ways of collecting data than the 'standard survey' are needed. Van Weele and Van Raaij (2014, p. 66) state that in "the future of purchasing and supply management research ... real life observations, databases or expert opinions may even be better sources for some research questions".

Next to such observational data, experimental data has the advantage of addressing the significance of causal mechanisms suspected based on the observational data (Winship & Morgan, 1999). An experiment is appropriate given the objective of our research in terms of both behavioural and incentive aspects. Through an experiment on purchasing incentives we also want to contribute to the knowledge and understanding of the use of experiments in the purchasing and supply management field.

4.2.2 The dictator game

The dictator game is a suitable vehicle to test how individuals in an experiment react on financial stimuli (Kahneman et al., 1986; cf. for a discussion about laboratory and extra-laboratory experiments Charness et al., 2013). In a dictator game, the first player, 'the dictator', determines how to split an endowment or any other amount of financial benefit – for instance an allowance or a lottery price - between oneself and the other, the second player. The second player is called 'the recipient' and simply receives the remainder of what the dictator left over of the endowment. Hence, the recipient's role is completely passive. He or she has no input whatsoever into the outcome of the game and just has to accept the amount left over (e.g. Engel, 2011).

While formally not considered to be a proper game in the sense of game theory, this game rather is one of decision theory. One of the big advantages with this type of game is that we can slowly develop the set-up of the experiment, starting with a recipient who cannot participate at all in the decision making or in any type of communication, to stages with various types of feed-back and communication between recipient and the 'dictator' (Festré & Garrouste, 2014). The focus is on the decisions of the dictator that affect recipients without introducing a myriad of sometimes strategic interactions between the dictator and the recipients. This does not mean that the other (strategic) interactions are unimportant. More complex designs can be used to extend the understanding obtained from experiments using a dictator game.

In the medical literature, Kesternich et al., (2015) used similar experiments to study the effect of professional norms derived from the Hippocratic oath in shifting weight to the patient in physicians' decisions while decreasing their self-interest and efficiency concerns, while Hennig-Schmidt et.al (2014) compare medical and non-medical students on their willingness to sacrifice own profit for their patients' benefit.

In the next section (4.3) some additional theoretical observations on 'norms' and 'professional norms' will be discussed. In Section 4.4, the experimental sessions we used are described.

4.3 Theoretical observations and hypotheses

In this section we start with an elaboration on social norms. Followed by a description of professional norms. From there an outline is given on norms and incentives. This section ends with our hypotheses on the influence of professional norms on the impact of financial incentives.

Social norms

A social norm is a description of a behaviour that is acceptable by a significant group of individuals, is mutually expected in this group, and enforced in case of deviations (e.g. Appelbaum et al., 2009; Bicchieri, 2005). According to some classical authors (Parsons, 1967) norms dictate the interactions of people in all social encounters. Social norms arise by the bottom-up habituation and subsequent internalization of behaviours common in a group. But even externally imposed rules may become norms when there is a possibility for top-down indoctrination, or when frequent interactions between group members – some of them favouring the rule - allow for lateral peer pressure to establish the behaviour as a norm. Here, we also find the Selection/Contagion model of Leenders (1995; cf. Burt, 1987) to be useful and relevant. Contagion occurs when a social actor adapts his or her behavior, attitude, or beliefs to the other actors in the social system. Social actors are selected into a social system or network that show the 'proper' attributes in the eyes of the existing members of that network. Once being part of a network, the existing organization members will start showing isomorphism in mental maps (see Section 3.5) and recipes applied as part of the process of contagion of the 'proper' recipes, norms and attitudes. But also, people with a certain personality opt to enter a particular profession, where that personality trait is of value. For instance, physicians and medical students show a higher propensity towards altruism than non-physicians and non-medical students (Kesternich et al., 2015; Hennig-Schmidt et al., 2014). Once inside the network of physicians, this attribute will only be reinforced through the process of contagion. It would be interesting to repeat this personality – profession match for purchasing professionals. However, we will focus our research here on the second component: the possible outcome of contagion through participating in the network of purchasing professionals: professional purchasing norms. We assume, that the longer one is exposed to this contagion, the stronger the impact of the norms will be on actual purchasing behaviour.

Professional norms

Professional norms are social norms in a professional context; a type of behaviour that professionals should adhere to, and they are expected by their profession to follow. Including informal sanctions associated with non-compliance like ostracism. In medicines, the Hippocratic Oath is a well-known professional norm "that governs physician practice since ancient times" (Kesternich et al., 2015, p. 1). Authors like Roberts and Dietrich (1999) and Freidson (2001) argue that "the relevant values (professional norms) are developed and sanctioned within the occupation. Professionals from the same occupation are expected to share motivation regardless of sector" (Anderson, 2007, p. 1). The sectoral influence is assumed to be channelled through the drives of the 'Worldview' (see Section 2.2.1). The Worldview as used in this research corresponds very much to the well-known description of culture by Hofstede (2003): the way things are done in organizations. Professional norms are the regulatory mechanisms to ensure a certain modus operandi takes place, transferred by conditioning and represented by the Worldview. Professional norms not only apply to an ethical code of conduct – as prescriptive and proscriptive norms (see Chapter 3) - but also – as descriptive norms - to the application of certain analytical tools and theories, and a certain conduct vis-à-vis suppliers, internal customers and other stakeholders. Theses norms are specific to the profession, delineate acceptable conduct within a profession, and some of them may be considered to be the professional ethics in general. When this is the case, they involve a value statement. They stipulate what behaviour within a profession is 'good' and will be appreciated (prescripted), and/or what behaviour within a profession is 'bad' and should be avoided (proscripted).

Often, professional norms are stipulated explicitly by associations of professionals, and spread around among members of the profession by means of professional training, setting standards, issuing professional certificates and publishing or supporting purchasing magazines and academic journals. CIPS (UK), APS and SMI (US), NEVI (The Netherlands), DILF (Denmark), BME (Germany), HALPIM (Hungary) or any other Practitioners Organization and member organization of the International Federation of Purchasing and Supply Management (IFPSM) umbrella organization; all are active in running educational programs, setting standards and spreading modern "thinking": tools, conduct and recipes. They spread the official 'Gospel' leading to increased global isomorphism in purchasing terminology and analytical tools. They develop what Bourdieu way back in 1977 called the Theory of Practice, reflected in a growing number of textbooks (e.g. Baily et al., 2010; Leenders et al., 2010; Van Weele, 2005; Cousins et al., 2008; or Lysons and Farrington, 2012). Academic organizations like IPSERA further codify and clarify the Body of Knowledge with frequent overviews, meta-analyses and reviews of the evolving thinking of the field in general (Van Weele & Van Raaij, 2014) and in specific topics, like for instance performance measurement and management (Caniato et al., 2014). Of course, all these "network contacts drive the participants towards isomorphism" (Kamann & Bakker, 2004, p. 60). This isomorphism in managerial behaviour (DiMaggio & Powell, 1988), a shared perception of certain topics (Harland, 1996) or the shared perception and selection of certain indicators to be relevant, like for instance risk (Zsidisin, 2003), enables easier communication between academics and managers with congruent mental maps. It may also create locked-in mind sets or institutionalizing blind spots for alternative paradigms. The result of all those institutional efforts also is a certain 'sharpness' in what the norms and the resulting conduct include, which is supposed to prevent norm

violations, for these can occur "when professional norms are valued but it is difficult to ascertain the appropriate course of professional conduct." (Haas & Park, 2009, p. 873).

In literature, so far, the Worldview played a dominant role on the actual selection of what a purchasing manager does (Kamann & Bakker, 2006; Bakker & Kamann, 2007). To make the picture more complete however, we wanted to focus on the specific role of the professional norms as we see them as the regulatory mechanisms. In line with the statement by Deck and Smith (2013) that lab-experiments represent an underutilized methodology in the purchasing and supply management field, offering rigorous scientific scrutiny, we decided to make use of an experiment to explicitly test the impact of the professional norms on the behaviour of professional purchasing managers.

Norms and incentives

Professional norms might interact with other financial incentives in place. Incentives defined in general terms as something that incites or encourages a person to do something - or the opposite: stop doing something. The direction or contents of this change in conduct is determined by norms, rules, protocols, procedures or regulations (e.g. Newman & Milkovich, 1990; Huselid, 1995; Beer & Cannon, 2004; Gneezy et al., 2011) and should reflect the relevant company Worldview. Professional norms might in particular be intertwined with intrinsic incentives, as already noticed by Kreps (1997). Intrinsic incentives do not arise due to direct material rewards. Instead, they come with internalized rewards associated with the job performance. For, professionals signalling their compliance with the professional norm might receive status and reputation rewards, and professionals in conflict with the norms could be exposed to naming and shaming. The annual CPO-of-the-year awards are a good example of such a reputational reward. These non-pecuniary consequences of norm adherence might nevertheless indirectly feed into the pecuniary incentives of the professionals, for example by opening an access to networks of highly valued co-professionals and their resources, or by enjoying high status and consequently to a high value on the labor market. Due to this indirect impact on pecuniary rewards, professional norms should be taken into account when designing incentives for professionals, next to pecuniary and other rewards. Professional norms do not arise spontaneously within an individual, they are due to exposure to a conditioning action of the profession or its representatives (e.g. Bourdieu, 1977). Professional norms are thus extrinsic to an individual, but may – and likely will - become internalized, especially when norm-driven behaviour is sufficiently reinforced in the profession. This leads to the next hypotheses:

H0: professional purchasing norms are no countervailing force offsetting the impact of financial incentives

H1: professional purchasing norms are a countervailing force offsetting the impact of financial incentives

In the next subsection (4.3.1) we present the experimental set up.

4.3.1 Experimental set up

To test our hypotheses, we developed an experiment where buyers and their internal customers were able to show their behaviour in a situation where the price-quality tension was present. The goal was to find evidence for the influence of professional norms of buyers on the impact of financial incentives on the buyer's decisions. We hypothesized that besides monetary incentives, buyers will also be influenced by the context of providing quality to the buyer, even if such context is in contrast with maximizing own payoffs. This was based on the empirical investigations by Goodrick and Salanic (1996) and supported by Anderson (2009) that the effect of economic incentives depends on professional norms.

We run the experiment with both purchasing professionals and students as populations in order to minimalize external validity problems (Bracht & Glass, 1968; Roe & Just, 2009). More specific, it allowed us to identify the impact of professional purchasing norms on 'purchasers' - as only for purchasers - norms are expected to have impact on the behaviour of purchasing professionals and not on the behaviour of students.

Experiments are often with student-participants. The use of students in experiments has been favoured by researchers (e.g. Belot et al., 2015) because students are accessible, easy to recruit and behave as any other human. Especially in social dilemma games such as the Dictator Game, Trust Game and Public Good Game, students are often used. The use of students in experiments has also been criticized by researchers and this has led to encouragement to use dual samples of students and non-students (e.g. Druckman & Kam, 2009). In our experiments, with students and purchasing professionals, we will run incentivized economic experiments. In two different treatments, we use either (1) a neutral framing of the decision problem how to divide an amount of money between the decision maker and the passive other participant, or (2) a formulation designed to trigger the professional norms of the profession when making that decision. Hence, the decision-making participants in our study make a one-shot decision that affects their own income from the experiment and the income of one other experiment participant, who remains passive in the decision process.

We compare behaviour of a sample of purchasing professionals in the treatment with a framing designed to trigger professional norms of the purchase professionals to behaviour of another sample of the purchasing professionals deciding without this framing. We show that the framing significantly affects decisions of the professionals only. We interpret this as evidence that professional norms are triggered in the process of decision-making and affect decisions. As a robustness check, we confirm that the imposition of the same professional-norm framing on student subject pool has no impact on behaviour. Finally, we find a link between the length of exposure to the profession and the impact of the professional norm, consistent with norm internalization as a long-term process.

The background of the set-up in fact deals with a moral hazard problem (Rauh, 2014; Keser & Willinger, 2007; Fehr & Schmidt, 2004), since these typically arise when monitoring or measurement costs preclude provision of monetary incentives directly linked to the effort exerted on a particular task. We propose that professional norms can serve as incentives, alleviate moral hazard problems, and give rise to behaviour

that cannot be incentivized by monetary incentives. We expect that when decisions are properly framed, the frames crowd in intrinsic incentives associated with should be done when following certain professional norms and standards. Strengthening the association between tasks performed and professional standards might provide an inexpensive and effective way for firm managers attempting to provide incentives in situations when moral hazard problems are pervasive.

Describing the situation in moral hazard terms, we observe that purchasing professionals procure goods and services for firms (for-profit or public) and maintain complex relations with external actors – potential and existing suppliers – and internal actors – internal customers and other internal stakeholders. The CEO or general firm manager has to align incentives of the purchasing professionals with the incentives of profit maximization, resulting from the specific Worldview of that company. Here, monitoring costs may prevent proper evaluations. While internal customers of the purchasing departments within firms produce output, which is directly observable by these general firm managers, the inputs into this production - as co-determined by the purchasing departments - are not observed by these firm managers; only the price, usually not even the total costs. Accordingly, the firm managers attempt to set incentives for the purchasing departments in terms of targets that are easy to measure – costs reductions – while the internal customers are affected by a wide range of aspects of inputs provided by the purchasing departments, which we in a summary term refer to as 'quality'. This quality is difficult to assess by the outsiders - e.g. firm managers - and difficult to quantify. It is a multidimensional aspect of the inputs provided, including a complex set of interdependent aspects such as the timely delivery of the correct type, number and specified goods/services, the best choice of the external supplier in the current conditions, the length of the contract and hence the commitment of the external supplier and so on.

The traditional focus of purchasing and supply management, on cost reduction, still holds sway with many researchers and practitioners (Van Weele & Van Raaij, 2014). Research on purchasing performance measurement (PPM) shows that KPIs for purchasing departments are dominated by, on the one hand, price and cost and on the other, by more quality-driven measures such as on time delivery, accuracy and professionalism (Chao et al., 1993). The PPM research domain also focusses on the relationship between PM and internal customers (Kumar et al., 2005) and the struggle to establish the correct priority. Buyers tend to focus more on price, and internal customers more on quality.

Imagine a purchasing manager is subject to Worldview demands for cost cutting. There may be even financial incentives linked to that goal, with targets and a bonus. A professional norm which requests from the professional purchasers to put a sufficient weight on the quality of services offered to the internal customer by the purchasing department - rather than paying only attention to the pecuniary incentives of cost minimization - might represent a countervailing force on that cost minimization. Therefore, we will test whether professional norms of purchasers have an impact on their behaviour by using an incentivized economic experiment.

The particular professional norm referred to in our experiment corresponds with the number one ethical issue ranked out of 44 ethical issues among CIPS members and associate members: "failure to provide products and services of the highest quality in the eyes of the internal customer" (Cooper et al., 1997, p. 191).

Dictator game

We have implemented a dictator game in our experimental design, with four treatments (with and without framing and a subject pool with purchasing professionals and students). A dictator game is a 'game' often used in experiments involving moral hazard and 'other-regarding' preferences with an allocation task (e.g. Engel, 2011; Berg et al., 1995; Kahneman, 1986). We adopt the stream that - in dictator games - giving reflects altruistic preferences or a taste for fairness by pointing altruistic behavior. Some scholars challenge these interpretations (e.g. Bardsley, 2008; Oosterbeek et al., 2004).

A participant of the experiment chooses a division of resources between oneself and the other anonymous participant in the experiment. In one of the treatments, the allocation decision is simply a division of money between two individuals, which we referred to as 'group'. In the other treatment, the same allocation decision takes place, with an added framing. This framing comes in the form of 'names' we give to the participants – 'Purchaser' and 'Internal Customer' – and in describing the consequences of each decision not only in terms of money but each decision is referred to as an (abstract) quality level provided to the recipient. By using this framing, we attempt to trigger the professional norm that (possibly) exists.

In the framed treatment, the decision-maker is referred to as Purchaser and the recipient is referred to as Internal Customer. Each allocation feasible for the Purchaser is now represented not only as monetary consequence but is also associated with a quality level, labeled as A1, A2, B1… up to E2. The quality level is described as highest in decision A1 and decreasing up to the lowest quality level in decision E2. At the same time, the highest quality A1 corresponds to a division of the money that gives the lowest payoff for the decision-maker and the highest possible payoff for the recipient. As the quality decreases, the payoff to the decision-maker increases. When the decision-maker wants to pursue own material self-interest only, he or she has to sacrifice the (abstract) notion of quality, since this results in the best bonus or other financial reward. Choosing higher amount of money for oneself now implies not only low amount of money for the recipient – just as is the case in the control treatment – but also implies low quality for the recipient, the Internal Customer. The recipient is thus harmed in material terms, while the decision-maker benefits in material terms. At the same time, if providing low quality is constrained by avoiding the breaking of the professional norm, then we expect that professionals will be more generous in the professional treatment with framing, due to the activation of their professional norms in this treatment.

In the next section (4.4) the description of the experimental sessions with purchasing professionals and students will be given.

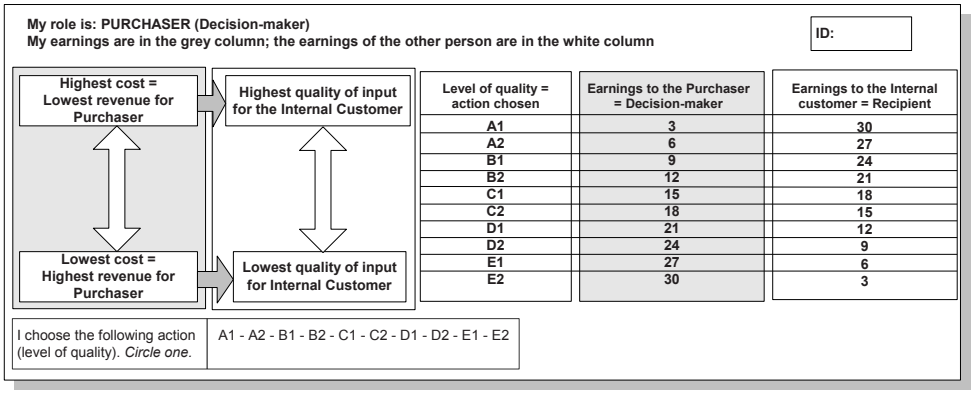
4.4 Experimental sessions for professionals and students

In total there were sessions on three different dates and places with 95 participants. The first session with purchasing professionals took place in September 2015 during a conference of the Netherlands Association of Purchasing Managers (NEVI) at the Nyenrode Business School in Breukelen, the Netherlands. Participants were informed about the experiments by e-mail and could join a session before or after a plenary meeting of the conference. In this way, we could exclude a spill-over of information about the experiments between the sessions. We ran two framed treatment sessions before the plenary, organized back to back, and one neutral session after the plenary. Here 38 professionals participated, 29 in the framed sessions, and 9 in the neutral session. We chose to over-sample the participants into the framed sessions to obtain a richer dataset on participants of various backgrounds. The second experiments with purchasing professionals took place on a similar occasion of NEVI in November 2015. 18 professionals participated, 8 in the framed session and 10 in the neutral session.

The experiments with students took place in October 2015 in the NSMDecisionLab at the Radboud University Nijmegen, the Netherlands. Students were recruited through the online recruitment system ORSEE and assigned to one of the treatments. All sessions were planned back-to-back to avoid spill-overs. Out of 40 students, 20 participated in the framed session and 20 in the neutral session. In all sessions, subjects were seated in isolation, preventing any interaction with other participants. Instructions were read aloud by the experimenter, and subjects were allowed to ask questions privately, if they needed clarification. Subjects were informed that they would be able to collect their earnings immediately after the experiment, in a sealed envelope. In that way, the experimenter distributing the earnings would not be aware of the other earnings of the specific participant collecting his/her earnings based on own participant number. The only difference was that the exchange rate gave three times as much payoff to the professionals (maximum of 30 euro) as to the students (maximum of 10 euro) for each alternative, in order to account for the higher opportunity costs of time of the professionals compared to the students (e.g. Beyer et al., 2014; Achtziger et al., 2014).

The decision screen is represented in Table 4-2 and presents the decision table we used in the experiment in the Framed treatment. It visualizes the link between the level of quality associated with the individual alternatives, and the monetary consequences (in Euro) of each alternative for both decision maker and recipient. Hence, it gives the earnings for the Purchaser and the Internal Customer for each decision the 'dictator' makes.

Table 4-2 The Decision Screen for the 'Dictator'



My role is: PURCHASER (Decision-maker)
My earnings are in the grey column; the earnings of the other person are in the white column

ID:

Highest cost = Lowest revenue for Purchaser

Highest quality of input for the Internal Customer

Lowest cost = Highest revenue for Purchaser

Lowest quality of input for Internal Customer

Level of quality = action chosen	Earnings to the Purchaser = Decision-maker	Earnings to the Internal customer = Recipient
A1	3	30
A2	6	27
B1	9	24
B2	12	21
C1	15	18
C2	18	15
D1	21	12
D2	24	9
E1	27	6
E2	30	3

I choose the following action (level of quality). *Circle one.*

A1 - A2 - B1 - B2 - C1 - C2 - D1 - D2 - E1 - E2

After making a decision, the experimenter collected the decision-sheets and implemented the random assignment of roles to the decision-maker and in front of the participants. Subjects filled in a short questionnaire and the experiment was finished. The total number of participants in the experiments exceed or match the numbers used by other comparable laboratory experiments (e.g, Hennig-Schmidt & Wiesen, 2014; Ribbink & Grimm, 2014; Eckel & Grossman, 1998). The session table can be found in Table 4-3 below.

Table 4-3: Session table (experiments in chronical order)

Session	Treatment	Participants	N
S1	Framed	Professionals	12
S2	Framed	Professionals	16
S3	Neutral	Professionals	9
S4	Framed	Students	20
S5	Neutral	Students	20
S6	Framed	Professionals	8
S7	Neutral	Professionals	10
			95

Elaboration on samples

The professional sample consisted of 55 participants. Of these, 67.3% were male and 32.7% female, 60% had an education on bachelor level and 40% on master level. Of the purchasing professionals 61% graduated also on a specific NEVI purchasing program. 62% of the professionals responded to be active in the field of purchasing for more than

10 years and also 62% was mainly active in the private sector. 38% of the professionals responded to be active in the public sector.

The student sample consisted of 40 participants. Of these, 55% were male and 45% female, 87% were bachelor students and 13% were master students. Their average age was 20.8 years and 8% had some practical experience with purchasing.

4.5 Decisions of the participants and results

4.5.1 The professionals

Let us first focus on the decisions of the 55 purchasing professionals. The main explanatory variable is the treatment variable 'Framed' that equals to 1 in the Framed treatment and equals to 0 in the Control treatment without framing, labelled 'Neutral' in Table 4-4. Other explanatory variables that we use to control for our results are Gender, Experience (category of years of experience in the profession), PriorityHighQ (answer to the question about priority for high quality above low price in the purchasing profession, in Likert scale format), and Type of education as another important vehicle for professional indoctrination (NEVI 1, 2, 3, other; introduced as indicator variables). Table 4-4 summarizes decisions of the professionals taken in both treatments. The allocations made by the professionals in the framed sessions differ clearly from those made in the neutral sessions. We observe that the distribution is shifted towards keeping more for oneself in the Neutral treatment. Indeed, while nobody chooses to make the three most extreme self-favouring decisions in the Framed treatment (D2, E1 & E2), these are the choices of 21% of the participants in the Neutral treatment.

Table 4-4: Decisions in Neutral and Framed treatment by professionals.

	Earnings PM (€)	Earnings IC (€)	Professionals Framed	Professionals Neutral
A1	3	30	14%	11%
A2	6	27	8%	5%
B1	9	24	11%	5%
B2	12	21	14%	0%
C1	15	18	14%	21%
C2	18	15	28%	26%
D1	21	12	11%	11%
D2	24	9	0%	0%
E1	27	6	0%	5%
E2	30	3	0%	16%
N			36	19

Note: 'Earnings' for the IC should be viewed as 'Costs' for the PM

Overall, these observations suggest that the participants as decision-makers act more selfishly, without regard for the other participant, in the Neutral treatment, and the introduction of the framing into the decision problem shifts their attention to other decisions and increases their 'altruism' resulting in increased willingness to benefit the recipient. In the framed sessions the majority of the decisions had a higher (abstract) quality for the recipient, framed as Internal Customer. Importantly, the majority of all decisions in the framed sessions favours the passive receiver, in the framed text the Internal Customer. That means the Decision-Makers choose actions that are associated with high quality, an aspect of a professional standard that Purchasers in the profession are expected to uphold according to the most prominent theories of the profession. This, despite the fact that such 'high quality' decisions are costly for the Decision-maker. From the perspective of monetary allocations, the Decision-makers thus behave more 'altruistically' since they benefit the passive receiver.

Observation 1: Professional Purchasers make decisions that favour the internal customers significantly more-disadvantaging oneself in the decision - when the decision problem is framed as providing high quality to the internal customer rather than as a pure distributional decision.

Our observation is supported by the one-sided Mann-Whitney U test that we run on the decisions in the two treatments, with and without framing, among professionals The behaviour of the professionals in the neutral and framed treatment are distinguishable from each other ($p=0.024$). The treatment activating the professional norms by framing of the task as the provision of high quality to the internal customers results in higher payoffs to the internal customers, than when the framing is absent.

Additional Professionalism background variables

Apart from professional norms, we also looked at a number of respondent attributes and checked if they had an impact on the decision-making process. In our theoretical observations, we already stated that we expected that 'length of exposure' should make a difference. Since literature explicitly states that sector does not make a difference, we included a division between public sector and private sector but did not expect significant results, which proved correct. The same in fact applies to a variable like gender. As for the level of formal purchasing education, we expect that prescriptive, proscriptive and injunctive norms are transferred at each level of education, but that the contents of transferred descriptive norms would differ between educational levels. That would mean that when testing a prescriptive norm – which in fact is what we did – 'length of exposure' should matter but level of education should not. 'Any type of formal education' should however matter, as a reinforcer of professional norms.

Next to these attributes we can measure in a rather objective way – 'number of years in the profession', 'level of education expressed in official diplomas' or its aggregate 'any type of formal purchasing education' – we included a number of more subjective variables. These dealt with familiarity with and understanding of the concepts and theories referred to in the framing set-up. These variables are subject to risky validity because of self-enhancement effects, experiment effects and social desirability effects.

Appendix H gives a further description of the attributes measured and a Pearson correlation between them. The subjective answers or attributes dealing with the familiarity with the theory, understanding of the theory relevant to price/quality trade-offs, and application of the theory in professional life were highly inter-correlated, indicating rather internally consistent answers. However, relating these answers to a variable TruePQ which serves as an objective measure of the participant's revealed knowledge of the theory that would apply in the particular context, we became aware that (1) the participants overestimated their familiarly with the theory and its implications, but (2) those that asses that they use the theory in life are more likely to actually be aware of the implications of the theory.

We will now test our earlier mentioned expectation that both the 'length of exposure' – operationalized as years of experience – and 'any type of formal purchasing education' – operationalized here as any level of professional NEVI certificate obtained - do have an impact on the strength of norms as expressed in the actual decision made. Table 4-5 describes the results of the Tobit regression.

	Model 1		**Model 2**	
Variable	*Coeff*	*Std.Err.*	*Coeff*	*Std.Err.*
Experience	-.214	.175	-.354*	.170
Treatment Framed	-1.735	.763*	n.a.	n.a.
Constant	6.887	1.013	5.786	.835
N	55		36	
PseudoR2	0.0260		0.0278	

Table 4-5: Tobit regression explaining Decision-maker's action.

* = significant at 0.05

By controlling for the exposure to the norms, and demographic variables like gender, we explain the decided level of quality, associated with a particular chosen payoff distribution between the decision-maker and the passive recipient. We use a Tobit regression, allowing for censoring of the value at the lower and upper range of the available alternatives, somewhat neglecting that the variable of interest is not continuous.

Model 1 contains data from both treatments. Model 2 is restricted to decisions in the Framed treatment. In Table 4-5, we drop the additional demographic variables –

including gender[19] and level of education - because they do not contribute at a satisfactory level of significance to the model. The negative beta values refer to the reduction in the share the decision maker keeps, going from E1 in the direction of A1.

We find that the treatment dummy Framed – representing the influence of professional norms - explains the decision made by the decision maker. Subjects give more to the recipient in the Framed treatment compared to the Neutral treatment. This amounts to an increase of about 20% of the endowment to be allocated to the recipients (internal customers) in the treatment Framed in terms of choosing alternatives implying not only material payoff but also quality for the recipient.

The only other variable that mattered: Experience

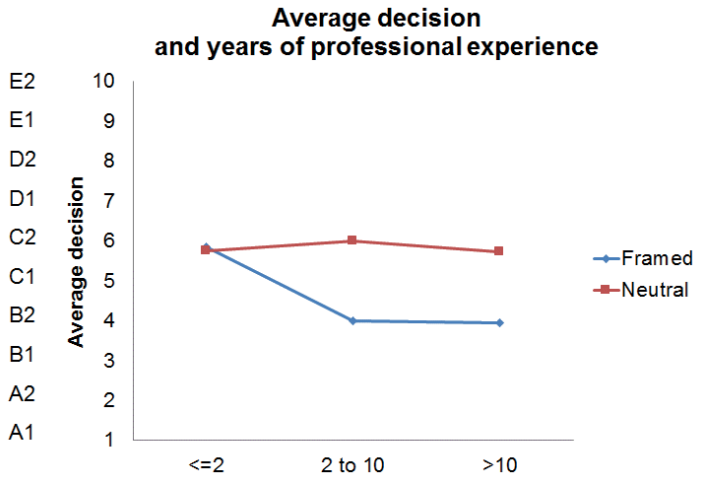
Table 4-5 shows that the only other variable among the variables we used to test that contributes – albeit only marginally - to explaining decisions in the experiment is the variable Experience, measuring the time spent in the profession. This is in line with our expectations. What surprised us to some extent was that the variable 'Any type of formal NEVI education' did not show any relation at all with the other variables, nor with the type of decision made.

When considering the full sample, with both treatments, the experience variable is not significant and only the treatment variable is significant. This would indicate that in case no explicit reference is made to the professional norms, purchasing managers behave more selfish. However, in case reference is made to the norm, managers with experience respond more 'altruistic' than purchasing managers with less or no experience.

The impact becomes more pronounced when we allow for a difference between 'beginners' in the profession, and 'professionals with a long experience'. For this purpose, we define a new categorical variable: 'beginners with less than 2 years of experience', 'professionals with 2 to 10 years of experience', and 'established professionals with more than 10 years of experience'. In Figure 4-1 we summarize the link between the decisions in the experiment and the years of professional experience according to this categorical variable.

[19] This is in line with the findings of Bolton and Katok (1995) who find no differences between men and women in dictator games. This differs from findings from Eckel and Grossman (1998) who found that women are less selfish in dictator games. According to Eckel and Grossman (1998) the contradictory results may be caused by specific dictator game design aspects such as level of the stakes, information density and social distance.

Figure 4-1: Average decision and years of professional experience.



In Figure 4-1, the average decision is given, depending on professional experience in years, between beginners (less than 2 years of experience), professionals (between 2 and 10 years of experience) and established professionals (more than 10 years of experience). The score of the Neutral treatment suggests that experience has no influence on whether purchasing professionals are more or less 'altruistic' – or 'selfish'. Once the situation explicitly is framed as something where a professional norm applies, all managers with 2 years of experience or more respond in a more 'altruistic' way, allowing for more quality, as is the norm. Managers with no experience or less than 2 years, do not seem to respond to the appeal of the norm. This is in line with the 1997 CIPS publication, that shows a difference in ranking of ethical issues between 'Members' and 'Associated Members'. While the issue we tested is number one among the Members, it ranks number 5 among the Associate Members (Cooper et al., 1997, Table 2, p. 192).

Observation 2: Purchasers that are for a longer period in the profession are more likely to be affected by the framing appealing to the professional norms of the Purchasers. They choose allocations that favour more the Internal customer (by higher quality), despite the monetary costs to oneself.

Observations 1 and 2 summarize that the decisions of Professionals are affected indeed by their professional norms to the extent that they forego material incentives in order to satisfy the norm and pay attention to the quality framing in the treatment. In the experiment, providing higher quality amounts to sacrificing more monetary payment for oneself and to provide higher monetary amount to the participant representing the

Internal Customer. In order to assess the robustness of this observation, we run additional sessions with students.

4.5.2 The students

In the sessions with in total 40 students, we use the same instructions as with the professionals. We expect, given that the students are not likely to be exposed to the purchasing professional norms to the extent that the professionals were, that there will be no impact of the professional framing on the behaviour of the students. Indeed, this is exactly what we find, see Table 4-6 for a summary of all decisions made by students in both treatments. The behaviour of the students in the neutral and framed treatment are indistinguishable from each other (Mann-Whitney U test, p=0.989). In both decision situations, nobody gives away everything and 15-20% keeps everything. The most altruistic decision-making students still keep 45% and give away 55%:

	Earnings	Earnings	Students	Students
	PM (€)	IC (€)	Framed	Neutral
A1	1	10	0%	0%
A2	2	9	0%	0%
B1	3	8	0%	0%
B2	4	7	0%	0%
C1	5	6	20%	10%
C2	6	5	30%	55%
D1	7	4	35%	10%
D2	8	3	0%	0%
E1	9	2	0%	5%
E2	10	1	15%	20%
N			20	20

Table 4-6: Decisions in Neutral and Framed treatment by students.

Observation 3: Students are not likely to be affected by the framing appealing to the professional norms of the Purchasers. In both treatments, they choose allocations in line with earlier experiments based on a dictator game (Engel, 2011).

4.6 Findings, conclusions and discussion

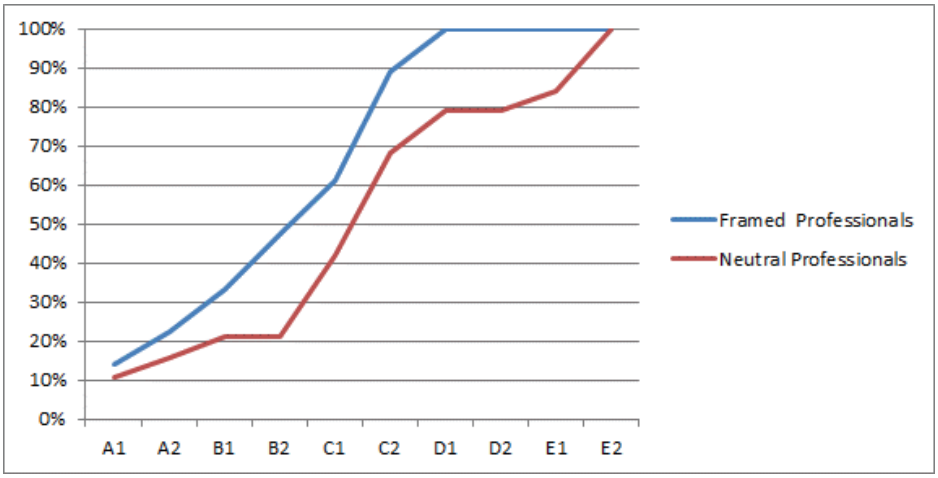
4.6.1 Findings

In our multi-treatment experiment with in total 95 participants with 55 purchasing professionals and 40 students allocated resources between oneself and another

participant of the experiment. In one treatment, this allocation was formulated as providing quality for the receiver. This context is well known, relevant for the purchasing professionals who participated in the experiments and appeals to an established norm. In their profession, providing quality to the internal clients is costly and purchasing professionals face a moral hazard problem. Their professional norms, however, stress the importance of quality considerations, as oppose to pursuing pure money-maximization (or cost minimization) goals. In the experiment, high quality was associated with lower payoffs for the deciding participant, the purchasing manager. Participants decided anonymously and received their earnings without the scrutiny of the experimenters. In this way, we eliminated the demand effects for upholding professional norms, and allowed that the participants would allocate freely the money in any way they desired.

We find that purchasing professionals allocate more money to the receiver when such allocation is associated with providing quality (see Figure 4-2).

Figure 4-2: Cumulative allocation of money professionals Framed and Neutral

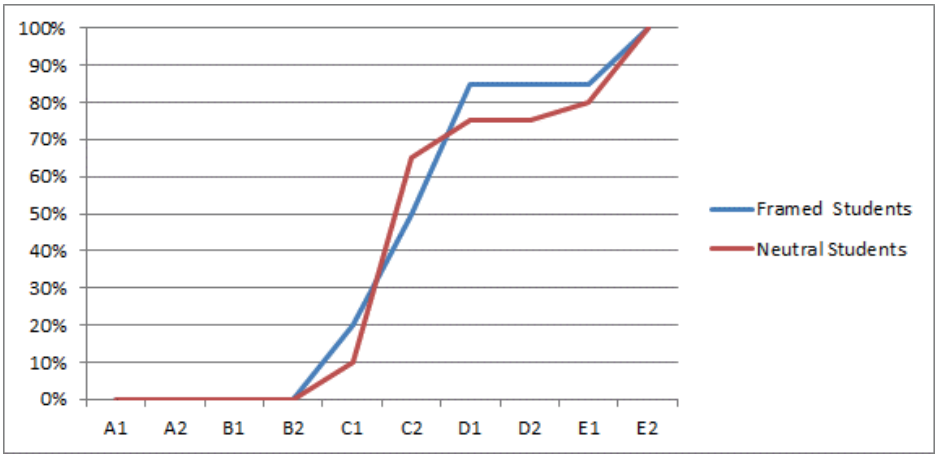


A1, A2, B1 … represent allocations of monetary associated with a quality level. A1 corresponds to a division of the money that gives the lowest payoff for the decision-maker and the highest possible payoff for the recipient which in dictator games is referred to as 'altruistic' (e.g. Engel, 2011) or 'giving'. E2 corresponds to a division of the money that gives the highest payoff for the decision-maker and the lowest possible payoff for the recipient which in dictator games is referred to as 'selfish' (e.g. Engel. 2011).

As we described, decisions associated with high quality, however, are more costly to the decision-makers, and professionals earn less when their decisions are framed around providing quality. This in contrast to the same decisions, made without reference to quality. We verify that this treatment effect is not due to the quality wording rather than due to the professional norms.

Students exposed to the same framing - while obviously lacking the professional norms of the purchasing profession - are not affected (see Figure 4-3).

Figure 4-3: Cumulative allocation of money for students Framed and Neutral



Decision A1 is in dictator games (Engel, 2011) referred to as 'most altruistic' or 'most giving'. Decision E2 is referred to as 'most selfish'. Students make about the same decisions with and without the reference to quality.

Our observations have important implications for managers of firms aiming to resolve moral hazard problems. While in literature, incentives systems based on strengthening the monetary incentives, or naming and shaming have been discussed in this context, we propose that professional norms could play an important role in incentivizing professionals, and possibly replace pecuniary incentives in tasks burdened by monitoring and enforcement costs. Professional associations could play an important role in achieving such social welfare objective, by formulating and disseminating professional norms that would decrease costs associated with other forms of incentives.

Our observations also contribute to the ongoing discussion whether experiments must be done with students or with practitioners. In our experiments, the student results in the framed sessions show different results, the adding of purchasing context seems relevant for the professionals and not for the students. As we described, previous research has asserted that social norms interact with economics incentives, or that moral norms effectively constrain behaviour. Norm-driven behaviour grounded in professional norms seems in our case to override the pecuniary incentives in place. We demonstrated the strength of professional norms in incentivizing behaviour and in suppressing self-interest in the interests of the goals promoted by the norm.

4.6.2 Conclusions

Purchasing professionals are influenced by professional norms and comply with them even if it is costing them personally money. When a framing is used that might trigger their professional norms, this indeed affects their behavior and purchasing professionals become more concerned with providing (abstract) quality to the recipient – the internal customer - even if this is costly to them. When professional purchasers recognize a situation as one where certain professional norms apply, they become more 'altruistic'. We provide evidence from incentivized experiments that professional norms can act as a countervailing force offsetting the impact of monetary incentives.

We therefore add professional norms to the list of norms able to combat narrow self-interest, or to power down – at least partially – the extrinsic pecuniary incentives. More research is required to identify the exact scope and degree of interactions of professional norms with other incentives. We also observe that professional norms may take some time to become ingrained, and questions arise on the most effective ways of supporting the process of their internalization.

Our hypotheses have a number of theoretical implications that build on prior research professional norms and incentives. We linked that to the field of purchasing and supply management. H0 is rejected, we find support for H1 that professional purchasing norms are a countervailing force offsetting the impact of financial incentives – given a specific purchasing context (see Appendix F; Instruction Sheet Framed).

4.6.3 Discussion

The relatively new method (e.g. Wacker, 1998; Deck & Smith, 2013) in purchasing of using economic experiments proved to be useful. The results were significant and valuable. We are aware of the relatively small size of our population, even when this is comparable to other publications. Especially the impact of 'experience' would require more experiments and different set-ups to really know its influence or importance. Because of this, we would like to see a larger number of participants in the experiment and expand the experiment with more situations related to feed-back and communication issues. Also, it would be interesting to check on other variables that may play a role (e.g. Achtziger et al., 2015) and test the difference between the prescriptive norms as we use here, and descriptive norms, where we expect level of education to play a role.

The non-significant score of 'any type of education' and 'gender' is worth checking in future experiments. We make a note here that we would suggest to make a difference between more descriptive norms – dealing with more practical issues that one learns from observation how things are carried out and done - and prescriptive norms like more ethical type of norms. In theory, the level of education should have a relation with the diffusion of descriptive norms, while variables like 'any type of education', 'participation in the network of purchasing professionals' and 'work experience' might have an impact on the diffusion and internalization of professional prescriptive norms.

As we described, we only focused on the 'contagion' part of the selection/contagion model (Leenders, 1995). It might be interesting to include the 'selection' part and test the relevant attributes of students in a purchasing management master, comparing them with for instance students in medicines or biology, to see whether we find significant differences in 'altruism' or other attributes. Similarly, we might run experiments where we compare purchasing managers who typically deal with 'leverage' quadrant suppliers, with 'strategic quadrant' suppliers; since differences in personality and attitudes are described in literature for the various 'types' of purchasing managers, depending of the 'arena' they operate in (Bichon et al., 2010).

This way we also could look into whether there are strong differences between the impact of descriptive norms related to analytical tools and procedures on the one hand, and ethical codes coming from prescriptive and proscriptive norms on the other hand. The significant impact of professional norms is a valuable argument for setting up policies codifying ethical and professional behaviour. Knowing which policies should be focused on which types of norms would be a welcome and necessary next step. Therefore, this is a just a first step. We hope more will follow.

We would recommend repeating this experiment with other set-ups in terms of feedback and communication, other items and set-ups to check the impact of professional purchasing norms on different issues and topics, both as prescriptive norms and descriptive norms. We also would be interested to see whether there are company or sector specific or even international differences, reflecting on the one hand cultural differences, but maybe also the strength of company or sector specific professionalism or the impact on professionalism of the local national purchasing professional organization.

For managers, we would recommend to include the results of this study when recruiting purchasing professionals or setting up or revising incentives schemes. Knowing with which kind of professional norms a new employee enters the organization or finding the right balance between extrinsic monetary related incentives and resulting rewards and rewards that come from adhering to professional norms should be all part of an overall package.

Chapter 5

Conclusions, limitations and future research

The majority of work in this chapter has been done by the author of this dissertation. Feedback from promotors and co-promotor was implemented during several revision rounds.

5 Conclusions, discussion and future research

This chapter starts with an introduction (5.1), followed by conclusions (5.2) and managerial recommendations (5.4). Then our academic contribution (5.3). This chapter ends with limitations, discussion and future research (5.5).

5.1 Introduction

This research started with curiosity about the question 'why' buyers do not always apply what they (should) know from theory, experts or even textbooks? Based on the assumptions that it is not the lack of awareness of the theory and theory is assumed to be applicable (see Chapter 1), this not applying of what seems to be the right way constitutes a potential risk that purchasing will underutilize its ability to contribute positively to firm performance.

Based on the initial gap model presented in Section 2.3, a multi-case research programme was designed. Questionnaires were developed for buyers and for their internal customers and a total of nine cases were investigated (see Chapter 2). From these case studies several gaps were found between theory and actual behaviour and between actual and ideal behaviours. We also found gaps in terms of financial incentives on offer to PM and to their internal customers. From this case research it was concluded that purchasing knowing-doing gaps existed and by analysing them individual and cross case wise, we found out that financial incentives seemed to play a major role in steering purchasing behaviour, yet no immediate conclusions on their precise impact on purchasing knowing-doing gaps could be made.

After we went back to the literature (see Chapter 3), in an attempt to explain the ambiguous case results we wanted to know to what extent professional norms play a role in influencing behaviour of purchasing professionals; in particular, how financial incentives and professional norms interact. Literature showed that in general non-financial incentives such professional norms could influence the impact of financial incentives.

In a multi treatment laboratory experiment with students and purchasing professionals (reported in Chapter 4) we tested to what extent purchasing professionals and students are influenced by financial incentives and social incentives in the form of professional norms. The experiment helped us to better understand why the use of financial incentives is not always conclusive.

In the next section (5.2)the conclusions are summarized.

5.2 Conclusions

As discussed in Chapter 1, the objective of this research was to obtain knowledge and insights concerning the influence of financial and non-financial incentives on the

difference between what professional buyers know about purchasing (what they should ideally do) and what they actually do.

The first research question (RQ1) was: "Do purchasing knowing-doing gaps exist?". Our research (see Chapter 2) confirmed that gaps between actual and ideal purchasing behaviours did indeed exist. The second research question (RQ2) was: "To what extent do financial incentives have an impact on purchasing knowing-doing gaps?". We concluded that financial incentives have impact yet are neither a sufficient nor a necessary precondition for reducing purchasing knowing-doing gaps (see Chapter 3). The third research question (RQ3) was: "What is the influence of professional norms on the impact of financial incentives?". We found that professional norms have a crowding-out effect on the impact of financial incentives (see Chapter 4).

Overall, we found that purchasing professionals, are influenced by financial incentives. This is in line with other research, which is mainly non-job specific. Professional purchasing norms are a countervailing force offsetting the impact of financial incentives framed in a specific purchasing context. We therefore add professional norms of purchasing professionals to the list of factors that are able to combat narrow self-interest, or to play down – at least partially – financial incentives (see Chapter 4).

In the section below, we discuss the contribution of our research to science (5.3) and we offer managerial recommendations (5.4). Finally, we assess the limitations of our findings and offer suggestions for further research (5.5).

5.3 Academic contribution

In this research multiple bodies of knowledge i.e. firm performance, financial and non-financial incentives, internal and external arenas, knowing-doing gaps and norms are used to obtain knowledge and insights concerning the influence of financial and non-financial incentives on purchasing knowing-doing gaps. This research also applies different research methods (e.g. case study and experiments) grounded in two major theories (grounded theory and agency theory) and linked to several academic streams like psychology, sociology and (behavioural) economics. The research combines HRM and purchasing and it is more from general management perspective than purchasing management. We see the contribution of this research on four aspects: (1) purchasing literature, (2) incentives research, (3) use of laboratory experiments and (4) agency theory. Each of these is shortly highlighted below.

Purchasing literature

There is growing attention for behavioural research within the field of purchasing and supply management. Research specific on incentivized behaviour or compensation systems for buying professionals is scarce, most of it dates from the late 1990s. Moreover, in the purchasing literature relatively limited attention is given to buyer – internal customer relations; buyer – supplier relations appear to be far more 'popular'

topic amongst researchers. In this thesis, we argue that the influence of financial and non-financial incentives on buyer behaviour while interacting with the internal customer should be an interesting and important field in purchasing and supply management research.

Incentives research

Research on incentives is often focussed on whether incentives work or not. In this dissertation, we wanted to step away from this 'will it work or not' discussion and focus more on *how* incentives work. We know they can influence behaviour and performance, but how (and why) do they work, how do they influence motivation (Gneezy et al., 2011) and how to optimize these effects.

Use of laboratory experiments

The growing attention to the more behavioural aspects in research in the field of purchasing and supply management demands the use of another set of scientific instruments (e.g. Wacker, 1998; Van Weele & Van Raaij, 2014). By using an experimental approach in this purchasing and supply management-based research we have also contributed to the knowledge on this underutilized methodology in this field (Deck & Smith, 2013).

Agency theory

As we discussed in Chapter 1, agency theory has been subjected to a number of criticisms. Our attention to professional norms has provided new input into the ongoing development of agency theory and provided another stimulus for extending the behavioural aspects. We introduced the sociological concept of isomorphism that, unlike most economic theories, does not place its emphasis on humans as rational actors. The concept of isomorphism is useful in understanding the existence and role of professional norms and we would encourage its greater application in behaviour-oriented research within the field of purchasing and supply management.

5.4 Managerial recommendations

We formulated the management problem as: "What can managers do with financial and non-financial incentives to reduce purchasing knowing-doing gaps?". Related to this problem, below some managerial recommendations from this research are summarized.

It is important for managers to realize that financial incentives do influence the behaviour of buying professionals: individually, in their relationship with internal customers, and also when in buying or commodity teams. Managers should probably be more aware of exactly how the PMs financial incentives are set. As was to be expected, in our research we found evidence that financial incentives do influence PMs behaviour. This implies that when the financial incentives are not sufficiently aligned (e.g. with IC incentives, with business objectives, etc.), the resulting PM behaviour will be accordingly. And actually, that PMs might do things differently from what they are expected to do from a purchasing theory point of view.

Further, the intuitive influence of financial incentives based on the basic laws of economic behaviour – that if one wants people to perform better, they should be rewarded – does not always hold true. There is no general rule that can be applied, one has to incentivize certain behaviours with financial and non-financial incentives and how to do this is context-dependent.

Managers should be aware that the general understanding that financial incentives can influence the relationship between buyer and IC in a way that profits the entire organization is in itself too vague to act upon. It is like having a safe full of gold – one has to find the right combination to open it and benefit from its valuable contents. To 'access the gold' and use to full potential of purchasing, managers need to establish the right 'combination'. This 'combination' consists of at least (1) a detailed description of the purchasing and supply management processes, with (2) clear understanding of buyer – internal customer interactions (this needs not only to establish the rationalities of the processes but also risks and other behavioural preferences) and (3) a job- or task-specific incentives system.

We believe that the findings from our experiment in Chapter 4 can offer useful additional insights and have important implications for managers. We found that purchasing professionals are influenced by the norms of their profession and tend to comply with them even if this costs them personally in monetary terms. Knowing the company specific professional norms and understand what these professional norms really mean in daily practice is the first step in using them to steer buying behaviour and to reduce the purchasing knowing-doing gaps at hand.

Our suggestion is that managers investigate the professional norms of their own purchasers in order to better understand the impact of those norms on already incentivized behaviour. Also, when new buyers are recruited, their actual professional norms should be assessed upfront (for instance with company specific experiments), in order to match these to company- or sector- specific professional norms. In Chapter 4 we argue that professional norms could play an important role in incentivizing professionals and possibly replace financial incentives. This is even more important when the direction in which the financial incentives at hand should steer is off target for the buyer, the internal customer or the organization itself. Replacing would also mean that less money is spend and that is on its own a nice cost saving.

Professional associations (such as NEVI) and educational programmes play an important role in establishing norms for buying professionals (see Chapter 3). And

although these norms are not company specific, they can play an important role in formulating company specific professional purchasing norms.

5.5 Limitations, discussion and future research

This section starts with limitations (5.5.1), followed by discussion and future research (5.5.2).

5.5.1 Limitations

Knowing-doing gaps, as defined by Pfeffer and Sutton (1999), are not unique to purchasing and supply management nor are incentives research and behavioural research. Our research has combined multiple research fields (e.g. HRM, psychology and sociology) several bodies of knowledge and two main theories: agency theory and grounded theory (see Chapter 1). Some of them are addressed individually in dissertations. As a consequence, this dissertation has not fully utilized the knowledge and insights available from each.

First limitations concern the explicit assumptions we made (see Chapter 1). We could have challenged some of the assumptions more than we did in the interviews and in the experiment. We also had to make choices as to which parts of the knowledge were essential for investigating purchasing knowing-doing gaps, and the influence of incentives, from a buyer – internal customer perspective in order to tell our story. By refining our research focus, several potentially interesting field of research were eliminated. For instance, the perception differences between buyers and their internal customers and the choice to first focus on individual incentives and not on team incentives or difference between the various types of financial incentive systems/contract (e.g. Backes-Gellner & Pull, 2013). There are also choices we did not make; for instance, when we decided to focus on financial incentives in our case studies, we did not go for in depth analyses of the compensation contracts for all PMs and ICs of the case companies.

Several limitations are inherent to this exploratory case based research (see Chapter 2). The qualitative way that scale items are tested on reliability and validity, more statistical testing could have been done. In terms of generalizing the findings, one must accept the number of cases is small and thus extreme caution must be employed in generalizing.

We should also recognize that we did not have (or created) the opportunity to gain insights into all aspects of the incentive systems available to the buyers and internal customers we interviewed, and that we built on their existing perceptions of the financial incentives.

Nevertheless, this is not necessarily a major handicap as perception is an important driver of individual behaviour. Future studies could usefully focus more on

documented incentive systems and carrying this out in Europe would have an extra value since most of the research on incentives is based on data from US-based organizations, and cultural differences can have impact.

In our experiment (see Chapter 4), we used the network of the Dutch association for buying professionals (NEVI) to provide a sample of 55 purchasing professional participants that we would later compare with a group of 40 students. NEVI represents and licences a large proportion of the buyers in the Netherlands, many of whom have undergone NEVI's training programmes. Given that this training can build professional norms, one should be cautious in generalizing the conclusions to all buyers in the Netherlands. However, the total sample size (N = 95) is at least equal to many other laboratory experiments on incentives. Furthermore, extending the sample with non-NEVI buyers could be valuable in being able to generalize the findings to all buyers in the Netherlands.

5.5.2 Discussion and future research

Notwithstanding the limitations mentioned in the previous subsection, we feel that this study has demonstrated the relevance of the topic, and that this will inspire further research on the influence of incentives (both financial and non-financial, and individual as well as group-based) on the behaviour of buyers within a buyer – internal customer perspective. Actually we like to propose that within the field of purchasing and supply management, more attention is given to internal customer orientation. For that purpose we suggest that the definition of Gadde and Hakånsson (1993) for purchasing (and supply management) should be reformulated as: "a company's behaviour towards *its internal customers and* suppliers".

Although we have provided a theoretical and empirically tested basis, we would emphasize that more research is required to identify the exact scope and degree of interaction between purchasing knowing-doing gaps and financial and non- financial incentives. We have observed that professional norms may take time to become ingrained, and questions arise as to the most effective ways of supporting the internalization process.

We see a need for more research on behavioural aspects in purchasing and supply management, and behavioural experiments seem to be a promising methodology to use. More specifically, experimental research on the influence of incentives (both financial and non-financial, and individual as well as group-based) on the behaviour of buyers when viewed from a buyer – internal customer perspective. We could argue that the professional norms of the participants in our experiments are a result of their membership of NEVI and participation in their professional training opportunities (see limitations). Therefore, experiments on the use professional norms in a single company, or in a particular sector, where not all the professionals are NEVI members could provide useful insights and interesting evidence on the way that purchasing professionals acquire and are affected by professional norms, and whether they still comply with them when this has personal financial consequences.

Future research should also investigate how managers can make better use of the incentives that a specific company provides. Purchasing managers are often able to choose from a variety of incentives with which to try to influence the behaviour of buyers in different settings. Future research should investigate the effectiveness of the incentives in different company specific settings.

Future research on team incentives instead of individual incentives is also interesting from our perspective. This is especially interesting because in most companies, purchasing activities appear to be organized in buying teams. There is relevant general (i.e. not purchasing-specific) research available on team incentives (e.g. Danilov et al., 2013; Conrads et al., 2013). From literature we know that strategic purchasing requires creativity (Kiratli et al., 2016). It would be great if future research could help in understanding if and how organizations should incentivize for creativity.

Overall, we see considerable space for researchers and managers to investigate the behaviour of buyers and buying teams and in particular, to question the assumption that buyers are rational economic actors who always respond to the economic-based 'law of behaviour' that financial incentives steer behaviour and higher incentives lead to higher performance.

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Summary

This thesis follows the chronological process of our research on purchasing knowing-doing gaps; involving emerging research questions, repeated refinement of the research scope and data analysis inductively building from particulars to a more general theme. The multidisciplinary research approach combines bodies of knowledge from HRM and purchasing and is based on theories stemming from different fields such as psychology, sociology and (behavioural) economics. Multiple methods such as case study, literature review and a laboratory experiment are used.

Research started with practical insights and evidence from academic literature (Chapter 1) that purchasing managers do not always do what they ideally should do (based on 'theory' and written down in papers and textbooks). Based on this, the assumption was that purchasing professionals are perfectly well aware of the theory and know how to apply it. This lead to the baseline question: "why do purchasing managers not always apply textbooks?".

Knowing-doing gaps, as defined by Pfeffer and Sutton (1999), are not unique to purchasing and supply management. In this thesis, purchasing knowing–doing gaps, are defined as the differences between what professional buyers know about purchasing (what they should ideally do) and what one actually does. Purchasing knowing-doing gaps are a potential risk for underutilization of purchasing from the widely accepted belief that purchasing contributes positively to firm performance. Knowing-doing gaps are frequently addressed by scholars and viewed from various perspectives.

We set out to know whether knowing-doing gaps existed in purchasing (Chapter 2) and if so, to what extent financial incentives - like base pay or performance-based pay - have an impact. Gaps existed and could be measured. We found that financial incentives have a significant relation with gaps, although they are neither a sufficient nor a necessary precondition for the gaps. In other words; financial incentives were not conclusive for the existence (and reduction) of purchasing knowing-doing gaps. So, we wanted to know what else could have an impact. From additional insights from literature (Chapter 3) we learned that non-financial incentives can have a crowding-out effect on the incentivized behaviour. Within the non-financial incentives, we focussed on social incentives and social norms. A social norm is a description of a behaviour that is acceptable, expected and enforced given a group of individuals. And like social incentives, we know that social norms interact with financial incentives and *can* have a crowding effect. We extended our research focus with non-financial incentives, in particular, with the professional norms of buyers, which are in fact a social norm.

We set out to know what the influence of professional purchasing norms is on the found yet not conclusive impact of financial incentives. In a multi treatment experiment with 95 students and purchasing professionals we tested (Chapter 4) to what extent purchasing professionals and students are influenced by social incentives in the form of professional norms. We found that professional purchasing norms are a countervailing force offsetting the impact of financial incentives framed in a specific

purchasing context. We therefore add professional norms of purchasing professionals to the list of factors that are able to combat or to play down – at least partially – financial incentives.

For managers it is important to realize that financial incentives do influence the behaviour of buying professionals, yet not always in the 'rational and economic' expected way. They should be aware that the general understanding that financial incentives influence their buyers in a way that it profits the entire organization is in itself too vague to act upon. Our suggestion (Chapter 5) is that managers investigate the professional norms of their own buyers in order to better understand the impact of those norms on already incentivized behaviour.

The academic contribution (Chapter 5) is made by combining insights and literature from several scientific disciplines and by use of quantitative and qualitative research methods e.g. case research and laboratory experiments. The use of experiments is not new to science as such, but 'underutilized' in the field of purchasing and supply management. More research is required to identify the exact scope and degree of interaction between purchasing knowing-doing gaps and the influence of professional norms on the impact of financial incentives. With the need for more research on behavioural aspects in purchasing and supply management, laboratory experiments seem to be an appropriate methodology to use.

Samenvatting (summary in Dutch)

Dit proefschrift volgt het chronologische proces van ons onderzoek naar purchasing knowing-doing gaps; met zich ontwikkelende onderzoeksvragen, herhaaldelijke verfijning van de scope en verschillende inductieve data-analyses. Purchasing knowing-doing gaps worden in dit proefschrift gedefinieerd als het verschil tussen wat professionele inkopers weten over inkoop (ergo wat zij idealiter zouden moeten doen) en dat wat men daadwerkelijk doet. De multidisciplinaire benadering combineert kenniscomponenten uit human resource management en inkoop en is gebaseerd op theorieën die voortkomen uit verschillende wetenschapsvelden zoals bedrijfskunde, psychologie, sociologie en (gedrags-) economie. In dit onderzoek worden meerdere onderzoeksmethoden gebruikt, zoals het literatuuronderzoek, het case-onderzoek en het in de bedrijfskunde minder bekende (laboratorium)experiment.

Ons onderzoek bouwt voort op concrete ervaringen uit de inkooppraktijk, aangevuld met wetenschappelijk onderzoek dat inkopers niet altijd doen wat zij ideaal gezien zouden moeten doen: dat wat in vaktijdschriften en inkoophandboeken als 'de inkooptheorie' staat beschreven. Dit gebundelde inzicht (Hoofdstuk 1) leidde tot de volgende initiële onderzoeksvraag: "waarom doen inkopers niet altijd datgene wat als ideaal staat beschreven in vaktijdschriften en inkoophandboeken?".

Knowing-doing gaps, zoals gedefinieerd door Pfeffer and Sutton (1999), zijn niet uniek voor inkoop. De algemene vraag hoe kennis (knowing) omgezet wordt in actie (doing) wordt door veel wetenschappers vanuit verschillende perspectieven onderzocht; in dit proefschrift doen we dat voor inkoop (purchasing). Het bestaan van purchasing knowing-doing gaps zien we als een potentieel risico voor de onderbenutting van inkoop vanuit het algemeen aanvaarde besef dat goed georganiseerde inkoop positief bijdraagt aan het organisatie-resultaat.

De eerste formele stap bestond uit het onderzoeken of er daadwerkelijk knowing-doing gaps bestaan in inkoop en zo ja, in hoeverre financiële incentives – zoals het vaste salaris of variabel in de vorm van een resultaatsbeloning of bonus - invloed hebben op het bestaan van de gaps. Door case-onderzoek bij in totaal negen verschillende organisaties vonden we dat purchasing knowing-doing gaps bestaan. Ook bleken deze gaps kwantificeerbaar (Hoofstuk 2). Hoewel de financiële incentives een significante relatie hebben met purchasing knowing-doing gaps, bleek die relatie niet voldoende voor een verklaring voor het bestaan of een noodzakelijke voorwaarde zijn voor het reduceren van deze gaps. Aanvullende inzichten uit de literatuur (Hoofdstuk 3) toonden aan dat niet-financiële incentives een verdringend effect kunnen hebben op het met financiële incentives gestimuleerde gedrag. In ons onderzoek rees daardoor de vraag of de professionele norm van inkopers verantwoordelijk zou kunnen zijn voor de deels afwijkende uitkomsten uit ons case-onderzoek.

Een professionele norm is een soort sociale norm: een beschrijving van gedrag dat aanvaardbaar, verwacht en gehandhaafd wordt voor een bepaalde groep individuen. En net als andere niet-financiële incentives, weten we dat sociale normen kunnen interacteren met financiële incentives en een dempend (crowding-out) of versterkend (crowding-in) effect kunnen hebben. Dit wetende hebben we onze scope uitgebreid met

sociale normen, in het bijzonder met de professionele normen van kopers. We wilden de invloed weten van professionele inkoopnormen op de eerder gevonden relatie tussen purchasing knowing-doing gaps en financiële incentives.

In een experiment met 95 deelnemers (studenten en inkoopprofessionals) hebben we getest in hoeverre het geïncentiviseerde gedrag van inkoopprofessionals en studenten wordt beïnvloed door professionele normen. Uit het experiment (Hoofdstuk 4) bleek dat professionele inkoopnormen een dempende factor zijn voor de impact van financiële incentives op gedrag van inkopers in een specifieke inkoopcontext.

Met deze uitkomst willen we professionele normen van inkoopprofessionals toevoegen aan de lijst met factoren die in staat zijn om - althans gedeeltelijk – de impact van financiële incentives te beïnvloeden. Voor managers is het belangrijk om te beseffen dat financiële incentives weliswaar van invloed zijn op het gedrag van inkoopprofessionals, maar niet altijd op een rationele of economisch gedreven manier. Managers moeten zich ervan bewust zijn dat de professionele norm van inkopers het gedrag ook beïnvloedt en dat deze professionele norm niet overeen hoeft te komen met de sturing die vanuit de financiële incentives wordt verwacht. Onze suggestie (Hoofdstuk 5) is dat managers de professionele normen van hun inkopers meer en diepgaander gaan onderzoeken om de impact van die normen op het financieel gestimuleerd gedrag beter te begrijpen.

De academische bijdrage (Hoofdstuk 5) wordt geleverd door inzichten uit verschillende wetenschappelijke disciplines te combineren met behulp van kwantitatieve en kwalitatieve onderzoeksmethoden zoals het laboratoriumexperiment. Het gebruik van experimenten is niet nieuw voor de wetenschap als zodanig, maar nog relatief onbekend binnen inkoop. Voor de toekomst stellen we dat er meer onderzoek nodig is om de precieze reikwijdte en mate van interactie vast te stellen tussen purchasing knowing-doing gaps en de invloed van professionele normen op de impact van financiële incentives. Met de toenemende behoefte aan meer inzicht in de gedragsaspecten van inkopers lijkt het aanbevelenswaardig om meer gebruik te maken van onderzoeksinstrumenten die door gedragsonderzoekers gebruikt worden zoals het (laboratorium)experiment.

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References

Abercrombie, N., Hill, S., & Turner, B. S. (1984). Dictionary of sociology Penguin Books.

Achtziger, A., Alós-Ferrer, C., Hügelschäfer, S., & Steinhauser, M. (2014). Higher incentives can impair performance: neural evidence on reinforcement and rationali

Adler, N. J. (1986). International Dimensions of Organizational Behavior. International Executive, 28(1), 31-32.

Aime, F., Meyer, C. J., & Humphrey, S. E. (2010). Legitimacy of team rewards: Analyzing legitimacy as a condition for the effectiveness of team incentive designs. Journal of Business Research, 63(1), 60-66.

Ajzen, I. (1991). The theory of planned behavior. Organizational Behavior and Human Decision Processes, 50, 179-211. –

Ajzen, I., & Fishbein, M. (1970). The prediction of behaviour from attitudinal and normative variables. Journal of experimental social psychology, 6, 466-487. –

Ajzen, I., & Fishbein, M. (1977). Attitude-behavior relations: A theoretical analysis and review of empirical research. Psychological bulletin, 84, 888-918. –

Ajzen, I., & Madden, T. J. (1986). Prediction of goal-directed behavior: attitudes, intentions, and perceived behavioral control. Journal of experimental social psychology, 22, 453-474.

Aken, J. E. V. (2004). Management research based on the paradigm of the design sciences: the quest for field-tested and grounded technological rules. Journal of management studies, 41(2), 219-246.

Amundson, S. D. (1998). Relationships between theory-driven empirical research in operations management and other disciplines. Journal of Operations Management, 16(4), 341-359.

Andersen, L.B. (2009). What determines the behaviour and performance of health professionals? Public service motivation, professional norms and/or economic incentives. International Review of Administrative Sciences 75, 79-97.

Anderson, E. T., & Simester, D. (2011). A step-by-step guide to smart business experiments. Harvard Business Review, 89(3), 98-105.

Anderson, E. W., Fornell, C., & Lehmann, D. R. (1994). Customer satisfaction, market share, and profitability: Findings from Sweden. The Journal of Marketing, 53-66.

Anderson, J. C. (1995). Relationships in business markets: Exchange episodes, value creation, and their empirical assessment. Journal of the Academy of Marketing Science, 23(4), 346-350.

Anderson, J. C., & Wynstra, F. (2010). Purchasing Higher-Value, Higher-Price Offerings in Business Markets. Journal of Business-to-Business Marketing, 17(1), 29-61.

Anderson, P. F., & Chambers, T. M. (1985). A Reward/Measurement Model of Organizational Buying Behavior. Journal of Marketing, 49(2), 7-23.

Andriessen, D. (2004). Reconciling the rigor-relevance dilemma in intellectual capital research. Learning Organization, 11(4), 393-401.

Antonakis, J. (2017). On doing better science: From thrill of discovery to policy implications. The Leadership Quarterly, 28(1), 5-21.

Appelbaum, R. P., Carr, D., Duneir, M., and Giddens, A. (2009). Conformity, Deviance, and Crime. Introduction to Sociology, New York, NY: W. W. Norton & Company, Inc., p. 173.

Arbuthnot, J. J., Slama, M., & Sissler, G. (1993). Selection Criteria and Information Sources in the Purchase Decisions of Apparel Buyers of Small Retailing Firms. Journal of Small Business Management, 31(2), 12-23.

Ariely, D., Gneezy, U., Loewenstein, G., & Mazar, N. (2009). Large Stakes and Big Mistakes. Review of Economic Studies, 76(2), 451-469.

Arrington, C. E., & Francis, J. R. (1989). Letting the chat out of the bag: deconstruction, privilege and accounting research. Accounting, Organizations and Society, 14(1-2), 1-28.

Ashenbaum, B., Maltz, A., Ellram, L., & Barratt, M. A. (2009). Organizational alignment and supply chain governance structure: Introduction and construct validation. International Journal of Logistics Management, 20(2), 169-186.

Ateş, M. (2014). Purchasing and Supply Management at the Purchase Category Level: strategy, structure and performance (No. EPS-2014-300-LIS).

Autry, C. W., & Golicic, S. L. (2010). Evaluating buyer–supplier relationship–performance spirals: A longitudinal study. Journal of Operations Management, 28(2), 87-100.

Azadnia, A. H., Saman, M. Z. M., & Wong, K. Y. (2015). Sustainable supplier selection and order lot-sizing: an integrated multi-objective decision-making process

Backes-Gellner, U., & Pull, K. (2013). Tournament Compensation Systems, Employee Heterogeneity, and Firm Performance. Human Resource Management, 52(3), 375-398.

Baier, C., Hartmann, E., & Moser, R. (2008). Strategic Alignment and Purchasing Efficacy: an Exploratory Analysis of their Impact on Financial Performance. Journal of Supply Chain Management, 44(4), 36-52.

Baily, P., Farmer, D., Crocker, B., Jessop, D. and Jones, D. (2010), Procurement Principles and Management, 10th Ed., Prentice Hall.

Baiman, S. (1990). Agency research in managerial accounting: A second look. Accounting, Organizations and Society, 15(4), 341-371.

Bakker, E. F. (2005). Leveranciersrelaties en perceptie. PhD Dissertation, University of Groningen, faculty of Economics

Bakker, E. F., & Kamann, D. F. (2007). Perception and social factors as influencing supply management: A research agenda. Journal of Purchasing and Supply Management, 13(4), 304-316.

Balkin, D. B., & Gomez-Mejia, L. (1987). Toward a Contingency Theory of Compensation Strategy. Strategic Management Journal, 8(2), 169-182.

Bandiera, O., Barankay, I., & Rasul, I. (2010). Social Incentives in the Workplace. Review of Economic Studies, 77(2), 417-458.

Bardsley, N. (2008). Dictator game giving: altruism or artefact? Experimental Economics, 11:122–133.

Bartlett, C. A., & Ghoshal, S. (2002). Building competitive advantage through people. MIT Sloan management review, 43(2), 34.

Bau, F., & Dowling, M. (2007). An Empirical Study of Reward and Incentive Systems in German Entrepreneurial Firms. Schmalenbach Business Review (SBR), 59(2), 160-175.

Baumeister, R. F. (1985). The Championship Choke. Psychology Today, 19(4), 48-52.

Beer, M. (1984). Managing human assets. Simon and Schuster.

Beer, M., & Cannon, M. D. (2004). Promise and Peril in Implementing Pay-For-Performance. Human Resource Management, 43(1), 3-20.

Belot, M., Duch, R., & Miller, L. (2015). A comprehensive comparison of students and non-students in classic experimental games. Journal of Economic Behavior & Organization, 113, 26-33.

Beltrán-Martín, I., & Roca-Puig, V. (2013). Promoting Employee Flexibility Through HR Practices. Human Resource Management, 52(5), 645-674.

Bemelmans, J., Voordijk, H., Vos, B., & Buter, J. (2011). Assessing buyer-supplier relationship management: Multiple case-study in the Dutch construction industry. Journal of construction engineering and management,138(1), 163-176.

Bendoly, E., Donohue, K., & Schultz, K. L. (2006). Behavior in operations management: Assessing recent findings and revisiting old assumptions. Journal of Operations Management, 24(6), 737-752.

Berg J, Dickhaut J, McCabe K. (1995). Trust, reciprocity, and social history. Games and Economic Behavior, 10:122–145.

Berger, P., & Luckmann, T. (1967). The social construction of reality: A treatise on the sociology of education.

Berl, R. L., Williamson, N. C., & Powell, T. (1984). Industrial Salesforce Motivation: A Critique and Test of Maslow's Hierarchy of Need. Journal of Personal Selling & Sales Management, 4(1), 33-39.

Bernard, H. R. (1988). Research methods in cultural anthropology (p. 117). Newbury Park, CA: Sage.

Bernardes, E. S., & Zsidisin, G. A. (2008). An examination of strategic supply management benefits and performance implications. Journal of Purchasing & Supply Management, 14(4), 209-219.

Beyer, A., Guttman, I., & Marinovic, I. (2014). Optimal Contracts with Performance Manipulation. Journal of Accounting Research, 52(4), 817-847.

Bichon, A., Merminod, N., & Kamann, D. (2010). Nouveaux rôles et profils de compétences des acheteurs: De la gestion des fournisseurs au management des clients internes. (French). Revue Française De Gestion, (205), 139-155.

Bicchieri, C. (2005). The grammar of society: The nature and dynamics of social norms. Cambridge University Press.

Birkinshaw, J., Healey, M. P., Suddaby, R., & Weber, K. (2014). Debating the future of management research. Journal of Management Studies, 51(1), 38-55.

Black, I. (2006). The presentation of interpretivist research. Qualitative Market Research: An International Journal, 9(4), 319-324.

Blaxter, L. (2010). How to research McGraw-Hill Education (UK).

Bloom, M. C., & Milkovich, G. T. (1995). The relationship between Risk, Performance Based Pay and Organizational Performance. CAHRS Working Paper Series, , 1-34.

Bolweg, J. F. (2012). HRM en advisering: effectiever HRM door problematisering. Paper presented at the De kijk van een adviseur, manager en hoogleraar met 40+ jaar HRM-fascinatie, Afscheidsrede Prof. dr. J.F. Bolweg; VU amsterdam. pp. 1-40.

Bonfadelli, H. (2002). The Internet and Knowledge Gaps: A Theoretical and Empirical Investigation. European Journal of Communication, 17(1), 65.

Boodie, M. (1997). World-Class Purchasing in Nederland is fictie en helaas nog geen werkelijkheid (Berenschot Inkoopenquête 1997 ed.). The Netherlands, Utrecht: Berenschot.

Boodie, M. (2008). Schotten & Schuttingen (Resultaten van het eerste onderzoek naar ontschotting en alignment van de interne supply chain). The Netherlands, Amsterdam: DPA.

Boodie, M. (2010). Muren & Buren (Resultaten van het Tweede onderzoek naar ontschotting en alignment van de interne supply chain in Nederland 2010.). The Netherlands, Amsterdam: DPA.

Boodie, M. and Kamann, D.J.F. (2015), Measuring Knowing-Doing Gaps in Purchasing Management, Competitive Paper, presented at the 24th IPSERA Conference, Amsterdam.

Boodie, M., Faas, A., & Leeflang, B. (2002). World-Class Purchasing: Noblesse Oblige (Berenschot Inkoopenquête 2001-2002 ed.). The Netherlands, Utrecht: Berenschot.

Boodie, M., Leeflang, B., Verwee, S., & Viane, D. (2002). World-Class Purchasing in Belgium & Luxembourg (Berenschot Purchasing Survey 2002, in collaboration with SAS ed.). The Netherlands, Utrecht: Berenschot.

Borch, K. (1967). Economics and Game Theory. Swedish Journal of Economics, 69(4), 215.

Boselie, P., Dietz, G., & Boon, C. (2005). Commonalities and contradictions in HRM and performance research. Human resource management journal, 15(3), 67-94.

Bourdieu, P. (1977), Outline of a theory of Practice, Cambridge: Cambridge University Press.

Bowen, D. E., & Ostroff, C. (2004). Understanding Hrm-Firm Performance Linkages: the Role of the "Strength" of the Hrm System. Academy of Management Review, 29(2), 203-221.

Bracht, G. H., & Glass, G. V. (1968). The external validity of experiments.American educational research journal, 437-474.

Brint, S. (1993). Eliot Freidson's Contribution to the Sociology of Professions. Work & Occupations, 20(3), 259.

Brown, D. (2008). Measuring The Effectiveness Of Pay And Rewards: The Achilles' Heel Of Contemporary Reward Professionals. Compensation & Benefits Review, 40(5), 23-41.

Brown, S. C., Steven Jr, R. A., Troiano, P. F., & Schneider, M. K. (2002). Exploring complex phenomena: Grounded theory in student affairs reseach. Journal of college student development, 43(2), 173.

Brüggen, A., & Moers, F. (2007). The Role of Financial Incentives and Social Incentives in Multi-Task Settings. Journal of Management Accounting Research, 19, 25-50.

Burke, R. J. (1966). Are Herzberg's Motivators and Hygienes Unidimensional. Journal of Applied Psychology, 50(4), 317-321.

Burks, S.V. and Krupka, E.L. (2012). A Multimethod Approach to Identifying Norms and Normative Expectations Within a Corporate Hierarchy: Evidence from the Financial Services Industry, Management Science 58(1), 203-217

Burt, D. N. (1989). Managing product quality through strategic purchasing. MIT Sloan Management Review, 30(3), 39.

Burt, R.S. (1987). Social Contagion and Innovation: Cohesive Versus Structural Equivalence, American Journal of Sociology, 92(6), 1287–1335.

Camerer, C. F., & Hogarth, R. M. (1999). The effects of financial incentives in experiments: A review and capital-labor-production framework. Journal of Risk and Uncertainty, 19(1-3), 7-42.

Camerer, C. F., Hogarth, R. M., Budescu, D. V., & Eckel, C. (1999). The effects of financial incentives in experiments: A review and capital-labor-production framework. In Elicitation of Preferences (pp. 7-48). Springer Netherlands.

Campbell, J. P., McCloy, R. A., Oppler, S. H., & Sager, C. E. (1993). A theory of performance. Personnel selection in organizations, 3570, 35-70.

Caniato, F., Luzzini, D., & Ronchi, S. (2014). Purchasing performance management systems: an empirical investigation. Production Planning & Control, 25(7), 616-635.

Caniëls, M. C. J., & Gelderman, C. J. (2007). Power and interdependence in buyer supplier relationships: A purchasing portfolio approach. Industrial Marketing Management, 36(2), 219-229.

Carr, A. S., & Pearson, J. N. (2002). The impact of purchasing and supplier involvement on strategic purchasing and its impact on firm's performance. International Journal of Operations & Production Management, 22(9), 1032-1053.

Carr, A. S., & Smeltzer, L. R. (1997). An empirically based operational definition of strategic purchasing. European Journal of Purchasing & Supply Management, 3(4), 199-207.

Carson, D., Gilmore, A., Perry, C., & Gronhaug, K. (2001). Qualitative marketing research Sage.

Carter, C. R. (2005). Purchasing social responsibility and firm performance: The key mediating roles of organizational learning and supplier performance. International Journal of Physical Distribution & Logistics Management, 35(3), 177-194.

Carter, C. R., & Dresner, M. (2001). Purchasing's role in environmental management: Cross-functional development of grounded theory. Journal of Supply Chain Management, 37(3), 12-27.

Carter, C. R., & Ellram, L. M. (2003). Thirty-Five Years of The Journal of Supply Chain Management: Where Have We Been and Where are We Going? Journal of Supply Chain Management, 39(2), 27-39.

Carter, J. R., & Narasimhan, R. (1994). The role of purchasing and materials management in total quality management and customer satisfaction. Journal of Supply Chain Management, 30(3), 3.

Carter, J. R., Smeltzer, L. R., & Narasimhan, R. (2000). Human resource management within purchasing management: Its relationship to total quality management success. Journal of Supply Chain Management, 36(2), 52-62.

Carter, J.R., Smeltzer, L.R. and Narasimhan, R. (2000) 'Human Resource Management within purchasing management: its relationship to total quality management succes', Journal of Supply Chain Management, Vol. 36, Issue 2, pp. 52-62.

Cerasoli, C. P., Nicklin, J. M., & Ford, M. T. (2012). "Incentives, Intrinsic Motivation, and Performance: A Meta-Analysis and Theoretical Reconciliation" Academy of Management.

Cerasoli, C. P., Nicklin, J. M., & Ford, M. T. (2014). Intrinsic Motivation and Extrinsic Incentives Jointly Predict Performance: A 40-Year Meta-Analysis. Psychological Bulletin, 140(4), 980-1008.

Chambers, T. M., Anderson, P. F., & Dunlap, B. J. (1986). Preferences, Intentions, and Behavior of Organizational Buyers Under Different Reward Conditions. Journal of Business Research, 14(6), 533-547.

Chao, C. N., Scheuing, E. E., & Ruch, W. A. (1993). Purchasing Perf ormance Evaluation: An Investigation of Diff erent Perspectives. Journal of Supply Chain Management, 29(2), 32-39.

Charness, G., Gneezy, U., & Kuhn, M. A. (2013). Experimental methods: Extra-laboratory experiments-extending the reach of experimental economics. Journal of Economic Behavior & Organization, 91, 93-100.

Charness, G., Gneezy, U., & Kuhn, M. A. (2013). Experimental methods: Extra-laboratory experiments-extending the reach of experimental economics. Journal of Economic Behavior & Organization, 91, 93-100.

Chen, I. J., Paulraj, A., & Lado, A. A. (2004). Strategic purchasing, supply management, and firm performance. Journal of Operations Management, 22(5), 505-523.

Chen, Y., Harper, F.M., Konstan, J., and Li, S.X. 2010. "Social Comparisons and Contributions to Online Communities: A Field Experiment on Movielens," The American Economic Review (100:4), Sep, pp. 1358-1398.

Chicksand, D., Watson, G., Walker, H., Radnor, Z., & Johnston, R. (2012). Theoretical perspectives in purchasing and supply chain management: an analysis of the literature. Supply Chain Management: An International Journal, 17(4), 454-472.

Choi, B., & Jae-Nam Lee. (2012). Complementarities and Substitutabilities Among Knowledge Sourcing Strategies and Their Impact on Firm Performance. Journal of the Association for Information Systems, 13(7), 498-545.

Choi, T. Y., & Liker, J. K. (1995). Bringing Japanese continuous improvement approaches to US manufacturing: the roles of process orientation and communications. Decision sciences, 26(5), 589-620.

Chung, K. H. (1969). Toward a General Theory of Motivation and Performance. California Management Review, 11(3), 81-88.

Cialdini, R.B., Reno, R.R., and Kallgren, C.A. (1990). A focus theory of normative conduct: Recycling the concept of norms to reduce littering in public places. Journal of Personality and Social

Claycomb, C., & Frankwick, G. L. (2010). Buyers' perspectives of buyer–seller relationship development. Industrial Marketing Management, 39(2), 252-263.

Coase, Ronald H. (1960), "The Problem of Social Cost," Journal of Law and Economics, 3 (1), 1–44

Colletti, J. A. (1973). Managing Group and Intergroup Relations (Book). Personnel Psychology, 26(4), 644-647.

Compensation--additional resources. (2007). Benefits & Compensation Digest, 44(5), 11-17.

Conaway, M. R. (1989). Analysis of repeated categorical measurements with conditional likelihood methods. Journal of the American Statistical Association, 84(405), 53-62.

Condly, S. J., Clark, R. E., & Stolovitch, H. D. (2003). The Effects of Incentives on Workplace Performance: A Meta-analytic Review of Research Studies 1. Performance Improvement Quarterly, 16(3), 46-63.

Conduit, J., & Mavondo, F. T. (2001). How critical is internal customer orientation to market orientation? Journal of Business Research, 51(1), 11-24.

Conlon, E. J., & Parks, J. M. (1990). Effects of monitoring and tradition on compensation arrangements: An experiment with principal-agent dyads. Academy of Management Journal, 33(3), 603-622.

Conrads, J., Irlenbusch, B., Rilke, R. M., & Walkowitz, G. (2013). Lying and team incentives. Journal of Economic Psychology, 34(0), 1-7.

Cooper, R.W., G.L. Frank and R.A. Kemp (1997), Ethical issues, helps and challenges. Perceptions of members of The Chartered Institute of Purchasing and Supply, European Journal for Purchasing and Supply Management, 3, (4), 189-198.

Corkerton, S., & Bevan, S. (1998). Paying hard to get. People Management, 4(16), 40.

Cousins, P. D., & Spekman, R. (2003). Strategic supply and the management of inter- and intra-organisational relationships. Journal of Purchasing & Supply Management, 9(1), 19.

Cousins, P. Lamming, R, Lawson, B and Squire, B. (2008), Strategic Supply Management, Principles, theories and practice, Pearson Education.

Creswell, J. W. (2014). A concise introduction to mixed methods research. Sage Publications.

Croorn, S., & Johnston, R. (2003). E-service: enhancing internal customer service through e - procurement. International Journal of Service Industry Management, 14(5), 539-555.

Croson, R., & Donohue, K. (2002). Experimental economics and supply-chain management. Interfaces, 32(5), 74-82.

Cuevas-Rodríguez, G., Gomez-Mejia, L., & Wiseman, R. M. (2012). Has Agency Theory Run its Course?: Making the Theory more Flexible to Inform the Management of Reward Systems. Corporate Governance: An International Review, 20(6), 526-546.

Danilov, A., Biemann, T., Kring, T., & Sliwka, D. (2013). The dark side of team incentives: Experimental evidence on advice quality from financial service professionals. Journal of Economic Behavior & Organization, 93, 266-272.

Das, A., & Handfield, R. B. (1997). A meta-analysis of doctoral dissertation in purchasing. Journal of Operations Management, 15(2), 101-121.

David Hemsworth, Cristóbal Sánchez-Rodríguez, & Bruce Bidgood. (2005). Determining the impact of quality management practices and purchasing-related information systems on purchasing performance: A structural model. Journal of Enterprise Information Management, 18(2), 169-194.

Davies, P., Walker, A. E., & Grimshaw, J. M. (2010). A systematic review of the use of theory in the design of guideline dissemination and implementation strategies and interpretation of the results of rigorous evaluations. Implementation Science, 5(1), 1.

Dawes, R. M. (1980). Social dilemmas. Annual Review of Psychology, 31(1), 169-193.

de Boer, L., & Van der Wegen, L. L. M. (2003). Practice and promise of formal supplier selection: a study of four empirical cases. Journal of Purchasing and Supply Management, 9(3), 109-118.

de Boer, L., & van, d. W. (2003). Practice and promise of formal supplier selection: a study of four empirical cases. Journal of Purchasing & Supply Management, 9(3), 109.

de Boer, L., Labro, E., & Morlacchi, P. (2001). A review of methods supporting supplier selection. European Journal of Purchasing & Supply Management, 7(2), 75-89.

de Vries, J., & Huijsman, R. (2011). Supply chain management in health services: an overview. Supply Chain Management: An International Journal,16(3), 159-165.

Dean, J. W., & Bowen, D. E. (1994). Management theory and total quality: improving research and practice through theory development. Academy of management review, 19(3), 392-418.

Deck, C., & Smith, V. (2013). Using Laboratory Experiments in Logistics and Supply Chain Research. Journal of Business Logistics, 34(1), 6-14.

Delery, J. E., & Doty, D. H. (1996). Modes of Theorizing in Strategic Human Resource Management: Tests of Universalistic, Contingency, and Configurations. Performance Predictions. Academy of Management Journal, 39(4), 802-835.

DeMatteo, J. S., Eby, L. T., & Sundstrom, E. (1998). Team-based rewards: Current empirical evidence. Research in organizational behavior, 20, 141-183.

Denis, J. L., & Langley, A. (2002). Forum. Health Care Management Review, 27(3), 32-34.

Denzin, N. K. (2012). Triangulation 2.0. Journal of Mixed Methods Research, 6(2), 80-88.

Devanna, M. A., Fombrun, C., & Tichy, N. (1981). Human Resources Management: A Strategic Perspective. Organizational Dynamics, 9(3), 51-67.

DiMaggio, P. J., & Powell, W. W. (1983). The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields. American Sociological Review, 48(2), 147-160.

Dodds, W. B., Monroe, K. B., & Grewal, D. (1991). Effects of Price, Brand, and Store Information on Buyers' Product Evaluations. Journal of Marketing Research (JMR), 28(3), 307-319.

Druckman, J. N., & Kam, C. D. (2009). Students as experimental participants: A defense of the'narrow data base'.

Dubois, A., & Araujo, L. (2007). Case research in purchasing and supply management: Opportunities and challenges. Journal of Purchasing & Supply Management, 13(3), 170-181.

Dul, J. (2016). Necessary Condition Analysis (NCA) Logic and Methodology of "Necessary but Not Sufficient" Causality. Organizational Research Methods, 19(1), 10-52.

Dul, J., & Hak, T. (2007). To quantify or to qualify: That's not the question. Journal of Purchasing & Supply Management, 13(3), 207-209.

Dul, J., Hak, T., Goertz, G., & Voss, C. (2010). Necessary condition hypotheses in operations management. International Journal of Operations & Production Management, 30(11), 1170-1190.

Dunnette, M. D., Lawler III, E. E., Weick, K. E., & Opsahl, R. L. (1967). The Role of Financial Compensation in Managerial Motivation. Organizational Behavior & Human Performance, 2(2), 175-175.

Dyer, J. H. (1996). Specialized supplier networks as a source of competitive advantage: Evidence from the auto industry. Strategic Management Journal, , 271-291.

Eckel, C. C., & Grossman, P. J. (1998). Are women less selfish than men?: Evidence from dictator experiments. The economic journal, 108(448), 726-735.

Eden, C. (1992). Strategy Development as a Social Process. Journal of Management Studies, 29(6), 799-811.

Eisenberger, R., & Cameron, J. (1996). Detrimental effects of reward: Reality or myth?. American psychologist, 51(11), 1153.

Eisenhardt, K. M. (1989). Agency Theory: An Assessment and Review. Academy of Management Review, 14(1), 57-74.

Ellegaard, C. (2006). Small company purchasing: A research agenda. Journal of Purchasing & Supply Management, 12(5), 272-283.

Ellram, L. M. (1991). Supply-chain management: The industrial organisation perspective. International Journal of Physical Distribution & Logistics Management, 21(1), 13-22.

Ellram, L. M., & Carr, A. (1994). Strategic Purchasing: A History and Review of the Literature. International Journal of Purchasing & Materials Management, 30(2), 9-18.

Ellram, L. M., Zsidisin, G. A., Siferd, S. P., & Stanly, M. J. (2002). The Impact of Purchasing and Supply Management Activities on Corporate Success. Journal of Supply Chain Management, 38(1), 4-17.

Encyclopedia of Bioethics (2003), Stephen Garrard Post (ed), Macmillan Reference USA

Engel, C. (2011), Dictator Games: A Meta Study. Experimental Economics 14 (4): 583–610; available since 2010 as Preprints of the Max Planck Institute for Research on Collective Goods. Bonn.

Englyst, L. Jorgensen, F. Johansen, J. and Mikkelsen, O.S. (2008) 'Commodity team motivation and performance', Journal of Purchasing & Supply Management, Issue 14, pp. 15-27.

Ertürk, A. (2014). Influences of HR Practices, Social Exchange, and Trust on Turnover Intentions of Public IT Professionals. Public Personnel Management, 43(1), 140-175.

Fabian, F. H. (2000). Keeping the Tension: Pressures to Keep the Controversy in the Management Discipline. Academy of Management Review, 25(2), 350-371.

Falk, A., & Heckman, J. J. (2009). Lab experiments are a major source of knowledge in the social sciences. science, 326(5952), 535-538.

Falk, A., Meier, S., & Zehnder, C. (2013). Do Lab Experiments Misrepresent Social Preferences? the Case of Self-Selected Student Samples. Journal of the European Economic Association, 11(4), 839-852.

Fama, E. F., & Jensen, M. C. (1983). Agency problems and residual claims. The Journal of Law and Economics, 26(2), 327-349.

Fehr, E., & Schmidt, K. M. (2004). Fairness and Incentives in a Multi-task Principal–Agent Model. Scandinavian Journal of Economics, 106(3), 453-474.

Feisel, E., Hartmann, E., & Giunipero, L. (2011). The importance of the human aspect in the supply function: Strategies for developing PSM proficiency. Journal of Purchasing & Supply Management, 17(1), 54-67.

Ferris, G. R., Hall, A. T., Royle, M. T., & Martocchio, J. J. (2004). Theoretical development in the field of human resources management: Issues and challenges for the future. International Journal of Organizational Analysis, 12(3), 231.

Festré, A., & Garrouste, P. (2014). Somebody may scold you! A dictator experiment. Journal of Economic Psychology, 45, 141-153.

Fiedler, F. E. (1971). Note on the Methodology Cf the Graen, Orris, An[] Alvares Studies Testing the Contingency Model. Journal of Applied Psychology, 55(3), 202-204.

Field, A. (2013). Discovering statistics using IBM SPSS statistics. sage.

Finn, D. W., Baker, J., Marshall, G. W., & Anderson, R. (1996). Total quality management and internal customers: measuring internal service quality. Journal of Marketing Theory and Practice, 4(3), 36-51.

Flood, M. M. (1958). Some Experimental Games. Management Science, 5(1), 5-26.

Foerstl, K., Hartmann, E., Wynstra, F., & Moser, R. (2013). Cross-functional integration and functional coordination in purchasing and supply managementAntecedents and effects on purchasing and firm performance. International Journal of Operations & Production Management, 33(6), 689-721.

Ford, R. C., & Richardson, W. D. (1994). Ethical Decision Making: A Review of the Empirical Literature. Journal of Business Ethics, 13(3), 205-221.

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. Journal of marketing research, 39-50.

Fornell, Claes, and David F. Larcker. "Structural equation models with unobservable variables and measurement error: Algebra and statistics." Journal of marketing research (1981): 382-388.

Fox, R. P. (1984). Agency theory: A new perspective. Management Accounting, 62(2), 36-38.

Franco-Santos, M. (2007). The performance impact of using measurement diversity in executives' annual incentive systems.

Frank E Rowbotham, & David Barnes. (2004). A questionnaire operationalising Hayes and Wheelwright's four-stage concept. Journal of Manufacturing Technology Management, 15(7), 651-661.

Freedman, S. M., & Montanari, J. R. (1980). An Integrative Model of Managerial Reward Allocation. Academy of Management Review, 5(3), 381-390.

Freidson, E. (2001), Professionalism. The Third Logic, Cambridge: Polity Press.

Frey, B. S., & Jegen, R. (2001). Motivation Crowding Theory. Journal of Economic Surveys, 15(5), 589.

Friend, S. B., Hamwi, G. A., & Rutherford, B. N. (2011). Buyer–Seller Relationships Within a Multisource Context: Understanding Customer Defection and Available Alternatives. Journal of Personal Selling & Sales Management, 31(4), 383-395.

Frohlich, M. T., & Westbrook, R. (2001). Arcs of integration: an international study of supply chain strategies. Journal of Operations Management, 19(2), 185-200.

Fryer, B., Milkovich, G. T., Thinnes, J. A., Yaffe, J., & Kokott, D. (2003). In a World of Pay Harvard Business School Publication Corp.

Fuster, A. and Meier, S. (2010) Another Hidden Cost of Incentives: The Detrimental Effect on Norm Enforcement. Management Science 56(1), 57-70.

Gadde, L. E., & Håkansson, H. (1993). Professional purchasing. London: Routledge.

Gadde, L., & Snehota, I. (2000). Making the Most of Supplier Relationships. Industrial Marketing Management, 29(4), 305.

Garbers, Y., & Konradt, U. (2014). The effect of financial incentives on performance: A quantitative review of individual and team-based financial incentives. Journal of Occupational & Organizational Psychology, 87(1), 102-137.

Gelderman, C. J., & van Weele, A. J. (2003). Handling measurement issues and strategic directions in Kraljic's purchasing portfolio model. Journal of purchasing and supply management, 9(5), 207-216.

Gennard, J., & Kelly, J. (1997). The unimportance of labels: The diffusion of the personnel/HRM function. Industrial Relations Journal, 28(1), 27.

Gerhart, B., & Milkovich, G. T. (1990). Organizational Differences in Managerial Compensation and Financial Performance. Academy of Management Journal, 33(4), 663-691.

Gibbs, J. P. (1965). "Norms: The Problem of Definition and Classification."American Journal of Sociology 70(5): 586–594.

Giunipero, L. C., & Vogt, J. F. (1997). Empowering the purchasing function: moving to team decisions. Journal of Supply Chain Management, 33(4), 8-15.

Giunipero, L. C., Denslow, D., & Eltantawy, R. (2005). Purchasing/supply chain management flexibility: Moving to an entrepreneurial skill set. Industrial Marketing Management, 34(6), 602-613.

Giunipero, L.C., Handfield, R.B. and Eltantaw, R. (2006) 'Supply Management's evolution: key skill sets for the supply manager of the future', International Journal of Operations & Production Management, Vol. 26, Issue 7, pp. 822-844.

Glanz, K., & Bishop, D. B. (2010). The role of behavioral science theory in development and implementation of public health interventions. Annual Review of Public Health, 31, 399-418.

Glaser, B. G. (1999). The future of grounded theory. Qualitative health research, 9(6), 836-845.

Glaser, B. S., & Strauss, A. (1971). A.(1967). the discovery of grounded theory. New York,

Gneezy, U., & Rustichini, A. (2000). Pay enough or don't pay at all. Quarterly Journal of Economics, 115(3), 791-810. doi:10.1162/003355300554917

Gneezy, U., Meier, S., & Rey-Biel, P. (2011). When and why incentives (don't) work to modify behavior. The Journal of Economic Perspectives, 25(4), 191-209.

Gneezy, U., Meier, S., & Rey-Biel, P. (2011). When and Why Incentives (Don't) Work to Modify Behavior. Journal of Economic Perspectives, 25(4), 191-210.

Goodrick, E., and Salancik, G.R. (1996). Organizational discretion in responding to institutional practices: Hospitals and caesarean births. Administrative Science Quarterly, 41(1), 1– 28.

Gordon, M. E. (1985). Managing Human Assets: The Groundbreaking Harvard Business School Program. (Book). Personnel Psychology, 38(3), 620-624.

Goulding, C. (1998). Grounded theory: The missing methodology on the interpretivist agenda. Qualitative Market Research: An International Journal, 1(1), 50-57.

Govindarajulu, N., & Daily, B. F. (2004). Motivating employees for environmental improvement. Industrial Management & Data Systems, 104(4), 364-372.

Guba, E. G., & Lincoln, Y. S. (1994). Competing paradigms in qualitative research. Handbook of Qualitative Research, 2(163-194), 105.

Guerra, C., Capitelli, M., & Longo, S. (2012). The role of paradigms in science: A historical perspective. Paradigms in theory construction (pp. 19-30) Springer.

Gülyaz, E., & van der Veen, J. A. (2015). How Logistics & Supply Chain can Create and Appropriate Customer Value.

Guthrie, J. P., Flood, P. C., Liu, W., & MacCurtain, S. (2009). High performance work systems in Ireland: human resource and organizational outcomes. The International Journal of Human Resource Management,, 20(1), 112-125.

Haas, M. R., & Park, S. (2010). To Share or Not to Share? Professional Norms, Reference Groups, and Information Withholding Among Life Scientists. Organization Science, 21(4), 873-891.

Hak, T., & Dul, J. (2009). Theory testing with cases. Ers-2009-037-Org, Erasmus Research Institute of Management

Hallowell, R., Schlesinger, L. A., & Zornitsky, J. (1996). Internal service quality, customer and job satisfaction: Linkages and implications for management. People and Strategy, 19(2), 20.

Han, J. H., Bartol, K. M., & Kim, S. (2015). Tightening up the performance–pay linkage: Roles of contingent reward leadership and profit-sharing in the cross-level influence of individual pay-for-performance. Journal of Applied Psychology, 100(2), 417.

Handfield, R. B. (1993). A resource dependence perspective of Just-in-Time purchasing. Journal of Operations Management, 11(3), 289-311.

Harland, C. M. (1996). Supply Chain Management: Relationships, Chains and Networks. British Journal of Management, 7(1)

Harrigan, P., Ramsey, E., & Ibbotson, P. (2011). Critical factors underpinning the e-CRM activities of SMEs. Journal of Marketing Management, 27(5), 503-529.

Harris, J. D., Johnson, S. G., & Souder, D. (2013). Model-Theoretic Knowledge Accumulation: the Case of Agency Theory and Incentive Alignment. Academy of Management Review, 38(3), 442-454.

Harrison, E. F., & Rosenzweig, J. E. (1972). Professional Norms and Organizational Goals: An Illusory Dichotomy. California Management Review, 14(3), 38-48.

Hart, O. (2011). Thinking about the Firm: A Review of Daniel Spulber's The Theory of the Firm. Journal of Economic Literature, 49(1), 101-113.

Hart, O., & Holmstrom, B. (1987). Advances in Economic Theory. In World Congress..

Haslinda, A. (2009). Evolving terms of human resource management and development. The Journal of International Social Research, 2/9, 180-186.

Hauser, J. R., Simester, D. I., & Wernerfelt, B. (1996). Internal Customers and Internal Suppliers. Journal of Marketing Research (JMR), 33(3), 268-280.

Hausman, D., & Le Grand, J. (1999). Incentives and health policy: primary and secondary care in the British National Health Service. Social Science & Medicine, 49(10), 1299-1307.

Hawley, A. H. (1986). Human ecology: A theoretical essay. University of Chicago Press.

Hayes, R. H., & Wheelwright, S. C. (1984). Restoring our competitive edge: competing through manufacturing.

Helfat, C. E. (2011). Dynamic Capabilities and Strategic Management: Organizing for Innovation and Growth. By David J. Teece. R&D Management, 41(2), 217-218.

Hennig-Schmidt, H. and D. Wiesen (2014), Other-regarding behavior and motivation in health care provision: an experiment with medical and non-medical students, Social Science and Medicine, 108, May, 156–165.

Herbst, F., & Coldwell, D. (2004). Business research Juta and Company Ltd.

Herzberg, F., Mausner, B., & Snyderman, B. B. (1959). Motivation versus Hygiene. (p. 113-119)

Heugens, P. P. M. A. R., & Lander, M. W. (2009). Structure! Agency! (And Other Quarrels): a Meta-Analysis of Institutional Theories of Organization. Academy of Management Journal, 52(1), 61-85.

Hiebert, P. G. (2008). Transforming worldviews: An anthropological understanding of how people change. Baker Academic.

Hirschman, E. C. (1985). Scientific style and the conduct of consumer research. Journal of Consumer Research, 12(2), 225-239.

Hochrein, S., & Glock, C. (2012). Systematic literature reviews in purchasing and supply management research: a tertiary study. Journal of Integrated Supply Management, Vol. 7(4), 215-245.

Hoffman, J. R., & Rogelberg, S. G. (1998). A guide to team incentive systems. Team Performance Management: An International Journal, 4(1), 23-32.

Hofstede, G. (2003). Culture's consequences: Comparing values, behaviors, institutions and organizations across nations. Sage publications.

Hollander, A., & Lacroix, R. (1986). Unionism, Information Disclosure and Profit-Sharing. Southern Economic Journal, 52(3), 706.

Hölmstrom, B. (1979). Moral hazard and observability. The Bell Journal of Economics, , 74-91.

Holston, C., & Kleiner, B. (2015). Excellence in reward systems. Franklin Business & Law Journal, 2015(3), 29-40.

Holweg, M., Disney, S., Holmström, J., & Småros, J. (2005). Supply chain collaboration:: Making sense of the strategy continuum. European Management Journal, 23(2), 170-181.

Hong, Y. (2009). One size does not fit all: the relations between service capabilities and human resource management. (Doctor,

House, R. J., & Wigdor, L. A. (1967). Hersberg's Dual-Factor Theory of Job Satisfaction and Motivation: a Review of the Evidence and a Criticism. Personnel Psychology, 20(4), 369-389.

Hudson, L. A., & Ozanne, J. L. (1988). Alternative ways of seeking knowledge in consumer research. Journal of Consumer Research, 14(4), 508-521.

Huff, A.S. (1990), Mapping strategic thought, Illinois: John Wiley and Sons.

Hult, M., & Lennung, S. (1980). Towards a Definition of Action Research: a Note and Bibliography. Journal of Management Studies, 17(2), 241-250.

Human Resource Champions: The Next Agenda for Adding Value and Delivering Results.(19961001). Harvard Business School Press Books, , 1.

Humphreys, M. A., Williams, M. R., & Goebel, D. J. (2008). Toward an Enhanced Definition and Measurement of Purchasing's Strategic Role in Buyer--Supplier Relationships. Journal of Business-to-Business Marketing, 15(3), 323-350.

Hunter, J. E. (2001). The desperate need for replications. Journal of Consumer Research, 28(1), 149-158.

Huselid, M. A. (1995). The Impact of Human Resource Management Practices on Turnover, Productivity, and Corporate Financial Performance. Academy of Management Journal, 38(3), 635-672.

Huselid, M. A., Beatty, R. W., & Becker, B. E. (2005). A Players or A Positions? Harvard Business Review, 83(12), 110-117.

Interis, M. (2011), On Norms: A Typology with Discussion, American Journal of Economics and Sociology, April, 70 (2): 424-434.

Jackson, C. K., & Schneider, H. S. (2013). Reducing Moral Hazard in Employment Relationships: Experimental Evidence on Managerial Control and Performance Pay,

Jackson, J. (1965). "Structural characteristics of norms". In I.D. Steiner & M. Fishbein (Eds.), Current studies in social psychology, New York: Holt, Rinehart and Winston, 301-309.

Jamieson, S. (2004). Likert scales: how to (ab) use them. Medical education, 38(12), 1217-1218.

Jansen, E. P., Merchant, K. A., & Van, d. S. (2009). National differences in incentive compensation practices: The differing roles of financial performance measurement in the United States and the Netherlands. Accounting, Organizations & Society, 34(1), 58-84.

Jenkins Jr, G. D. (1986). Financial incentives. Generalizing from laboratory to field settings, 167-180.

Jenkins Jr., G. D., Gupta, N., Gupta, A., & Shaw, J. D. (1998). Are Financial Incentives Related to Performance? A Meta-Analytic Review of Empirical Research. Journal Of Applied Psychology, 83(5), 777-787.

Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. Journal of Financial Economics, 3(4), 305-360.

Jensen, M. C., & Ruback, R. S. (1983). The market for corporate control: The scientific evidence. Journal of Financial economics, 11(1-4), 5-50.

Johnson, J. P., Lenartowicz, T., & Apud, S. (2006). Cross-cultural competence in international business: toward a definition and a model. Journal of International Business Studies, 37(4), 525-543.

Johnson, P. F., Leenders, M. R., & Flynn, A. E. (2011). Purchasing and supply management P. fraser johnson, michiel R. leenders, anna E. flynn (14th ed.). New York: McGraw-Hill/Irwin.

Johnston, W. J., & Lewin, J. E. (1996). Organizational Buying Behavior: Toward an Integrative Framework. Journal of Business Research, 35(1), 1-15.

Jones, M. P. (2009). Entrepreneurial Science: The Rules of the Game. Social Studies of Science (Sage Publications, Ltd.), 39(6), 821-851.

Joo, H. H., Bartol, K. M., & Kim, S. (2015). Tightening up the performance-pay linkage: Roles of contingent reward leadership and profit-sharing in the cross-level influence of individual pay-for-performance. Journal of Applied Psychology, 100(2), 417-430. doi:10.1037/a0038282

Jun, M., & Cai, S. (2010). Examining the relationships between internal service quality and its dimensions, and internal customer satisfaction. Total Quality Management & Business Excellence, 21(2), 205-223.

Kahneman, D., Knetsch, J.L. and Thaler, R.H. (1986) Fairness And The Assumptions Of Economics." The Journal of Business 59, S285-S300.

Kamann, D. F. (2007). Organizational design in public procurement: A stakeholder approach. Journal of Purchasing & Supply Management, 13(2), 127-136.

Kamann, D. F., & Bakker, E. F. (2004). Changing supplier selection and relationship practices: a contagion process. Journal of Purchasing & Supply Management, 10(2), 55.

Kamann, D.J.F. and Bakker, E.M. (2006), Do purchasing managers behave in a idiosyncratic way? The role of social groups in shaping supplier management, Competitive Paper presented at the 15th IPSERA Conference at San Diego.

Kamann, D. J. F., Snijders, C., Tazelaar, F., & Welling, D. T. (2006). The ties that bind: Buyer-supplier relations in the construction industry. Journal of Purchasing & Supply Management, 12(1), 28-38.

Kannan, V. R., & Tan, K. C. (2002). Supplier selection and assessment: Their impact on business performance. Journal of Supply Chain Management, 38(3), 11-21.

Kaplan, R. S., & Norton, D. P. (1995). Putting the balanced scorecard to work. Performance measurement, management, and appraisal sourcebook, 66, 17511.

Keaveney, S.M. (1995) 'Working smarter: the effects of motivational orientations on purchasing task selection and retail buyer performance', Journal of business and psychology, Vol. 9, Issue 3, pp. 253-271.

Kempeners, M. A., & van, d. H. (1999). Designing account management organizations. Journal of Business & Industrial Marketing, 14(4), 310.

Kepes, S., Delery, J., & Gupta, N. (2009). Contingencies in the effects of pay range on organizational effectiveness. Personnel Psychology, 62(3), 497-531.

Kern, D., Moser, R., Sundaresan, N., & Hartmann, E. (2011). Purchasing Competence: A Stakeholder-Based Framework for Chief Purchasing Officers. Journal of Business Logistics, 32(2), 122-138.

Keser, C., & Willinger, M. (2007). Theories of behavior in principal–agent relationships with hidden action. European Economic Review, 51(6), 1514-1533.

Kessler, J.B. and Leider, S. (2012). Norms and Contracting. Management Science 58(1), 62-77.

Kesternich, I., Schumacher, H., & Winter, J. (2015). Professional norms and physician behavior: Homo oeconomicus or homo hippocraticus?. Journal Of Public Economics, 1311-11.

Ketchen Jr., D. J., & Giunipero, L. C. (2004). The intersection of strategic management and supply chain management. Industrial Marketing Management, 33(1), 51.

Ketchen, D. J., & Hult, G. T. (2007). Bridging organization theory and supply chain management: The case of best value supply chains. Journal of Operations Management, 25(2), 573-580.

Kiratli, N., Rozemeijer, F., Hilken, T., de Ruyter, K. de Jong, A. (2016). Climate setting in sourcing teams: Developing a measurement scale for team creativity climate. *Journal of Purchasing and Supply Management*, 22(3), pp. 196-204.

Kleppmann, W. (2014). Design of Experiments (DoE): Optimizing Products and Processes Efficiently. Chemical Engineering, 121(11), 50-57.

Knapp, T. R. (1990). Treating ordinal scales as interval scales: an attempt to resolve the controversy. Nursing research, 39(2), 121-123.

Knoppen, D., & Sáenz, M. J. (2015). Purchasing: Can we bridge the gap between strategy and daily reality? Business Horizons, 58(1), 123-133.

Kopelman, R. E. (1979). A Causal-Correlational Test of the Porter and Lawler Framework. Human Relations, 32(7), 545.

Kopelman, R. E., Prottas, D. J., & Davis, A. L. (2008). Douglas McGregor's Theory X and Y: Toward a Construct-valid Measure. Journal of Managerial Issues, 20(2), 255-271.

Korzilius, H.P.L.M. (2000). De kern van survey-onderzoek. Assen: van Gorcum

Kraljic, P. (1983). Purchasing must become supply management. Harvard Business Review, 61(5), 109-117.

Krause, D. R., Scannell, T. V., & Calantone, R. J. (2000). A structural analysis of the effectiveness of buying firms' strategies to improve supplier performance. Decision Sciences, 31(1), 33-55.

Krause, Daniel R., Thomas V. Scannell, and Roger J. Calantone. "A structural analysis of the effectiveness of buying firms' strategies to improve supplier performance." Decision Sciences 31.1 (2000): 33-55.

Kreps, D.M. (1997), Intrinsic Motivation and Extrinsic Incentives, American Economic Review, 87 (2), 359-364.

Kronenber, C., Heintze, I and Mehlbok, G. (2010). The interplay of moral norms and instrumental incentives in crime causation. Criminology 48(1), 259–294.

Kroumova, M. K., & Lazarova, M. B. (2009). Broad-based incentive plans, HR practices and company performance. Human Resource Management Journal, 19(4), 355-374.

Kroumova, M. K., & Lazarova, M. B. (2009). Broad-based incentive plans, HR practices and company performance. Human Resource Management Journal, 19(4), 355-374.

Kuhn, T. S. (1970). Revolutionary View of the History of Science: The Structure of Scientific Revolutions. The Physics Teacher, 8(2), 96-98.

Kumar, A., Ozdamar, L., & Peng Ng, C. (2005). Procurement performance measurement system in the health care industry. International journal of health care quality assurance, 18(2), 152-166.

Kuzon Jr, W. M., Urbanchek, M. G., & McCabe, S. (1996). The seven deadly sins of statistical analysis. Annals of plastic surgery, 37(3), 265-272.

Landy, F. J., & Conte, J. M. (2004). Work in the 21st century. An introduction to.

Large, R. O., & König, T. (2009). A gap model of purchasing's internal service quality: Concept, case study and internal survey. Journal of Purchasing & Supply Management, 15(1), 24-32.

Larson, P.D and Morris, M. (2008) 'Sex and salary: a survey of purchasing and supply professionals', Journal of Purchasing and Supply Management, Issue 14, pp. 112-124.

Lascelles, D. M., & Dale, B. G. (1989). The Buyer-Supplier Relationship in Total Quality Management. Journal of Purchasing & Materials Management, 25(2), 10-19.

Lau, A. K. W. (2010). Training needs of purchasing and supply management personnel in Hong Kong. Journal of European Industrial Training, 34(5), 400-415.

Lawler III, E. E. (2009). The Knowing-Doing Gap. Conference Board Review, 46(3), 29-29.

Lawler III, E. E., & Suttle, J. L. (1973). Expectancy Theory and Job Behavior. Organizational Behavior & Human Performance, 9(3), 482-503.

Lawler III., E. E., & Hackman, J. R. (1969). Impact of Employee Participation in the Development of Pay Incentive Plans: a Field Experiment. Journal of Applied Psychology, 53(6), 467-471.

Lawler, E. L. (1971). Pay and organization effectiveness: A psychological view. NY: McGraw Hill.

Le Grand, J. (2003) Motivation, agency, and public policy: of knights and knaves, pawns and queens Oxford University Press, Oxford, UK.

Lee, A. S., & Baskerville, R. L. (2003). Generalizing generalizability in information systems research. Information Systems Research, 14(3), 221-243.

Lee, J. (2009). Does Size Matter in Firm Performance? Evidence from US Public Firms. International Journal of the Economics of Business, 16(2), 189-203.

Leenders, Anna Flynn, and P. Fraser Johnson. Purchasing & Supply Mgmt. Tata McGraw-Hill Education, 2010.

Leenders, R (1995), Structure and Influence. Statistical Models for the Dynamics of Actor Attributes, Network Structure, and their Interdependence. PhD thesis University of Groningen, NL.

Leeuw, A. d. (1990). Een boekje over bedrijfskundige methodologie: Management van onderzoek. Assen/Maastricht: Van Gorcum,

Lehmann, D. R., & O'Shaughnessy, J. (1982). Decision Criteria Used in Buying Different Categories of Products. Journal of Purchasing & Materials Management, 18(1), 9-14.

Lemieux, T., Macleod, W. B., & Parent, D. (2009). Performance Pay and Wage Inequality. Quarterly Journal of Economics, 124(1), 1-49.

Lepak, D. P., & Snell, S. A. (1999). The Human Resource Architecture: Toward a Theory of Human Capital Allocation and Development. Academy of Management Review, 24(1), 31-48.

Lepper, M. R., & Greene, D. (Eds.). (2015). The hidden costs of reward: New perspectives on the psychology of human motivation. Psychology Press.

Lewin, J. E., & Donthu, N. (2005). The influence of purchase situation on buying center structure and involvement: a select meta-analysis of organizational buying behavior research. Journal of Business Research, 58(10), 1381-1390.

Lewis, P., Saunders, M. N. K., & Thornhill, A. (2004). Family breakdown Developing an explanatory theory of reward system change. Personnel Review, 33(2), 174-186.

Lin, C., & Tseng, S. (2005). The implementation gaps for the knowledge management system. Industrial Management & Data Systems, 105(2), 208-222.

Lindbeck, A. (1997). Incentives and Social Norms in Household Behavior. The American Economic Review 87(2), 370–377.

List, J. A. (2007). On the Interpretation of Giving in Dictator Games. Journal of Political Economy, 115(3), 482-493.

Locke, E. A. (2004). "Promise and Peril in Implementing Pay-For-Performance" by Michael Beer and Mark D. Cannon. Human Resource Management, 43(1), 41-43.

Locke, E. A., & Latham, G. P. (1990). A theory of goal setting & task performance. Prentice-Hall, Inc.

Logan, M. S. (2000). Using agency theory to design successful outsourcing relationships. The International Journal of Logistics Management, 11(2), 21-32.

Lombardozzi, C. (2012). Shocking Evidence of Managers' Knowing-Doing Gap. T+d, 66(7), 26-26.

Lyon, D. W., Lumpkin, G. T., & Dess, G. G. (2000). Enhancing entrepreneurial orientation research: Operationalizing and measuring a key strategic decision making process. Journal of Management, 26(5), 1055-1085.

Lysons, K. and Farrington, B. (2012), Purchasing and Supply Chain Management (8th Ed.), Harlow: Pearson Education.

MacDuffie, J. P. (1995). Human resource bundles and manufacturing performance: Organizational logic and flexible production systems in the world auto industry. ILR Review, 48(2), 197-221.

Macleod, W. B., & Parent, D. (1999). Job Characteristics and the Form of Compensation. Olin Working Paper Series, , 1-42.

Maister, D. (2008). Strategy and the Fat Smoker. Training Journal, , 69-69.

Malhotra, D., & Lumineau, F. (2011). Trust and collaboration in the aftermath of conflict: The effects of contract structure. Academy of Management Journal, 54(5), 981-998.

Martell, K., & Carroll, S. J. (1995). How Strategic Is HRM? Human Resource Management, 34(2), 253-267.

Masi, D., Micheli, G. J. L., & Cagno, E. (2013). A meta-model for choosing a supplier selection technique within an EPC company. Journal of Purchasing & Supply Management, 19(1), 5-15.

Maslow, A. H. (1943). A theory of human motivation. . Psychological Review, Vol 50(4), Jul 1943, 370-396., Vol 50(4), 370.

Mastenbroek, W. (2007). Grenzen aan beter organiseren.

Matell, M. S., & Jacoby, J. (1971). Is there an optimal number of alternatives for Likert scale items? Study I: Reliability and validity. Educational and psychological measurement, 31(3), 657-674.

Mathis, R. L., & Jackson, J. H. (2011). Human resource management: Essential perspectives. Cengage Learning.

Maurer, F., & Paulokat, J. (1994). Operationalizing Conceptual Models Based on a Model of Dependencies. Kaiserslautern: Technische Universität Kaiserslautern, Fachbereich Informatik.

Maute, M. F., & Forrester Jr., W. R. (1993). The Structure and determinants of consumer complaint intentions and behavior. Journal of Economic Psychology, 14(2), 219.

Mays, N., Roberts, E., & Popay, J. (2001). Synthesising research evidence. Studying the organisation and delivery of health services: Research methods, 188-220.

McGregor, D. (1960). The Human Side of Enterprise. Harvard Business Review, 38(5), 102-102.

Meehan, J., & Wright, G. H. (2012). The origins of power in buyer–seller relationships. Industrial Marketing Management, 41(4), 669-679.

Menor, L. J., & Roth, A. V. (2007). New service development competence in retail banking: Construct development and measurement validation. Journal of Operations Management, 25(4), 825-846.

Merchant, K. A., Van, d. S., Lin, T. W., & Yu, Z. (2011). Performance Measurement and Incentive Compensation: An Empirical Analysis and Comparison of Chinese and Western Firms' Practices. European Accounting Review, 20(4), 639-667.

Meyer, A. D., Tsui, A. S., & Hinings, C. R. (1993). Configurational Approaches to Organizational Analysis. Academy of Management Journal, 36(6), 1175-1195.

Mick, D. G. (1996). Are studies of dark side variables confounded by socially desirable responding? The case of materialism. Journal of consumer research, 23(2), 106-119.

Milkovich & Newman, Compensation, 8th edition, Tata McGraw-Hill, 2005

Milkovich, G. T., & Campbell, K. (1972). A Study of Jaques' Norms of Equitable Payment. Industrial Relations, 11(2), 267-271.

Mitchell, T. M. (1982). Generalization as search. Artificial Intelligence, 18(2), 203-226.

Mohr-Jackson, I. (1991). Broadening the market orientation: an added focus on internal customers. Human Resource Management, 30(4), 455-467.

Monczka, R. M., Carter, P. L., & Hoagland, J. H. (1979). Purchasing Performance: Measurement and Control. Division of Research, Graduate School of Business Administration, Michigan State University.

Morris, R. (1956). “A Typology of Norms.” American Sociological Review, 21(5): 610–613.

Motivation versus Hygiene.(19590101). Motivation to Work, , 113.

Motowildo, S. J., Borman, W. C., & Schmit, M. J. (1997). A theory of individual differences in task and contextual performance. Human performance, 10(2), 71-83.

Mudie, P. (2003). Internal customer: by design or by default. European Journal of Marketing, 37(9), 1261-1276.

Mulvaney, M. A., McKinney, W. R., & Grodsky, R. (2012). The Development of a Pay-for-Performance Appraisal System for Municipal Agencies: A Case Study. Public Personnel Management, 41(3), 505-533.

Nadler, D. A., & Tushman, M. L. (1980). A Model for Diagnosing Organizational Behavior. Organizational Dynamics, 9(2), 35-51.

Nalla, V. R., Veen, J. A. A., & Venugopal, V. (2009). Using contract mechanisms to coordinate product line decisions in supply chains.

Narayanan, S., Narasimhan, R., & Schoenherr, T. (2015). Assessing the contingent effects of collaboration on agility performance in buyer–supplier relationships. Journal of Operations Management, 33, 140-154.

Netemeyer, R. G., Bearden, W. O., & Sharma, S. (2003). Scaling procedures: Issues and applications Sage Publications.

Neuman, L. W. (2002). Social research methods: Qualitative and quantitative approaches.

Neumann, W. P., & Dul, J. (2010). Human factors: spanning the gap between OM and HRM. International Journal of Operations & Production Management, 30(9), 923-950.

Newman, J. M., & Milkovich, G. T. (1990). Procedural Justice Challenges in Compensation: Eliminating the Fairness Gap. Labor Law Journal, 41(8), 575-580.

Nils-Ole Hohenstein, Edda Feisel, Evi Hartmann, (2014) "Human resource management issues in supply chain management research: A systematic literature review from 1998 to 2014", International Journal of Physical Distribution & Logistics Management,

Noshad, K., & Awasthi, A. (2015). Supplier quality development: A review of literature and industry practices. International Journal of Production Research, 53(2), 466-487.

Oosterbeek H, Sloof R, van de Kuilen G. Cultural differences in ultimatum game experiments: Evidence from a meta-analysis. Experimental Economics 2004.

Pagell, M. Das, A, Curkovic, S. and Easton, L. (1996) 'Motivating the purchasing professional', International Journal of Purchasing and Materials Management, Summer issue, pp. 27-34.

Park, R. E. (1939). Collective Behavior. American Sociological Review, 4(3), 404-406.

Parks, J. M., Boles, T. L., Conlon, D. E., DeSouza, E., Gatewood, W., Gibson, K., ... & Wilson, G. (1996). Distributing adventitious outcomes: Social norms, egocentric martyrs, and the effects on future relationships. Organizational Behavior and Human Decision Processes, 67(2), 181-200.

Parsons, T. (1967), Sociological Theory and Modern Society, New York, Free Press.

Paterson, J. (2013). Reward not linked to business objectives. Engineer (Online Edition), , 7-7.

Patten, T. H. (1977). Pay: Employee compensation and incentive plans Free Press.

Paulraj, A., Chen, I. J., & Flynn, J. (2006). Levels of strategic purchasing: Impact on supply integration and performance. Journal of Purchasing & Supply Management, 12(3), 107-122.

Pepper, A., & Gore, J. (2015). Behavioural Agency Theory: New Foundations for Theorizing About Executive Compensation. Journal of Management, 41(4), 1045-1068.

Pepper, A., Gore, J., & Crossman, A. (2013). Are long-term incentive plans an effective and efficient way of motivating senior executives? Human Resource Management Journal, 23(1), 36-51.

Perkins, D., & Gunasekaran, A. (1998). Improving the effectiveness of purchasing in a small company: a case study. Production Planning & Control, 9(6), 611-618.

Perrow, C. (1986). Economic theories of organization. Theory and society, 15(1), 11-45.

Peterson, R. A., & Merunka, D. R. (2014). Convenience samples of college students and research reproducibility. Journal of Business Research, 67(5), 1035-1041. doi:10.1016/j.jbusres.2013.08.010

Pettigrew, A. M. (1990). Longitudinal field research on change: Theory and practice. Organization science, 1(3), 267-292.

Pfau, B., Detzel, D., & Geller, A. (1991). Satisfy your internal customers. Journal of Business Strategy, 12(6), 9-13.

Pfeffer, J., & Sutton, R. I. (1999). Knowing "What" to Do Is Not Enough: Turning Knowledge Into Action. California Management Review, 42(1), 83-108.

Pfeffer, J., & Sutton, R. I. (1999). The knowing-doing gap; how smart companies turn knowledge into action. Boston, Massachusetts: Harvard Business School Press,.

Pittaway, L., Robertson, M., Munir, K., Denyer, D., & Neely, A. (2004). Networking and innovation: a systematic review of the evidence. International Journal of Management Reviews, 5/6(3), 137-168.

Pohl, M., & Förstl, K. (2011). Achieving purchasing competence through purchasing performance measurement system design—A multiple-case study analysis. Journal of Purchasing & Supply Management, 17(4), 231-245.

Popper, K. R. (1959). The logic of sc. discovery. na.ISO 690

Poppo, L., & Zenger, T. (2002). Do Formal Contracts and Relational Governance Function as Substitutes or Complements? Strategic Management Journal, 23(8), 707.

Powers, T. L., & Reagan, W. R. (2007). Factors influencing successful buyer–seller relationships. Journal of Business Research, 60(12), 1234-1242.

Prager, J. (2013). The Financial Crisis of 2007/8: Misaligned Incentives, Bank Mismanagement, and Troubling Policy Implications. Economics, Management & Financial Markets, 8(2), 11-56.

Prahalad, C. K., & Hamel, G. (1990). The Core Competence of the Corporation. Harvard Business Review, 68(3), 79-91.

Proctor, R., & Murtagh, J. (2014). Incentive Compensation for Bank Ceos and Cfos before and After the Financial Crisis. Journal of Legal, Ethical & Regulatory Issues, 17(2), 61-75.

Promberger, M., Brown, R. C., Ashcroft, R. E., & Marteau, T. M. (2011). Acceptability of financial incentives to improve health outcomes in UK and US samples. Journal of medical ethics, 37(11), 682-687.

Pullins, E.B, Reid, D.A. and Plank, R.E. (2004) 'Gender issues in buyer-seller relationships: does gender matter in purchasing?', Journal of Supply Chain Management, Vol. 40, Issue 3, pp. 40-48.

Ramsay, J. (1996). The case against purchasing partnerships. Journal of Supply Chain Management, 32(4), 13.

Ramsay, J. (1998). Problems with empiricism and the philosophy of science: Implications for purchasing research. European Journal of Purchasing & Supply Management, 4(2), 163-173.

Rao, G. V., & Krishna, D. J. (2015). Alignment of HR Practices with Organizational Strategies. Indian Journal of Industrial Relations, 50(4), 666-679.

Rauh, M. T. (2014). Incentives, wages, employment, and the division of labor in teams. RAND Journal of Economics (Wiley-Blackwell), 45(3), 533-552.

Ravenswood, K. (2011). Eisenhardt's impact on theory in case study research. Journal of Business Research, 64(7), 680-686.

Reddy, P. N., & Acharyulu, G. (2009). Marketing research Excel Books India.

Reinecke, N., Spiller, P. And Ungerman, D. (2007) 'The talent factor in purchasing', McKinsey Quarterly, Issue 1, pp. 6-9.

Revilla, E., Sáenz, M. J., & Knoppen, D. (2013). Towards an empirical typology of buyer–supplier relationships based on absorptive capacity. International Journal of Production Research, 51(10), 2935-2951.

Rezaei, J., & Ortt, R. (2013). Multi-criteria supplier segmentation using a fuzzy preference relations based AHP. European Journal of Operational Research, 225(1), 75-84.

Ribbink, D., & Grimm, C. M. (2014). The impact of cultural differences on buyer–supplier negotiations: An experimental study. Journal of Operations Management, 32(3), 114-126.

Rinehart, L. M., Eckert, J. A., Handfield, R. B., Page Jr., T. J., & Atkin, T. (2004). An Assessment of Supplier-Customer Relationships. Journal of Business Logistics, 25(1), 25-62.

Rivis, A., & Sheeran, P. (2003). Descriptive norms as an additional predictor in the theory of planned behaviour: A meta-analysis. Current Psychology, 22(3), 218-233.

Roberts, J. and M. Dietrich (1999), Conceptualizing Professionalism: Why Economics needs Sociology", American Journal of Economics and Sociology, 58: 977-998.

Robinson, P. J., & Hollander Jr., S. (1974). Organizational Buyer Behavior. Journal of Marketing Research (JMR), 11(3), 349-349.

Robinson, P. J., Faris, C. W., & Wind, Y. (1967). Industrial buying and creative marketing (Vol. 184). Boston, MA: Allyn & Bacon.

Roe, B. E., & Just, D. R. (2009). Internal and External Validity in Economics Research: Tradeoffs between Experiments, Field Experiments, Natural Experiments, and Field Data. American Journal Of Agricultural Economics, 91(5), 1266-1271.

Rosenzweig, E. D., & Roth, A. V. (2007). B2B seller competence: Construct development and measurement using a supply chain strategy lens. Journal of Operations Management, 25(6), 1311-1331.

Rozemeijer, F. A., van Weele, A., & Weggeman, M. (2003). Creating corporate advantage through purchasing: toward a contingency model. Journal of Supply Chain Management, 39(4), 4-13.

Rutherford, B. N., Boles, J. S., Barksdale, H. C., & Johnson, J. T. (2008). Buyer's relational desire and number of suppliers used: The relationship between perceived commitment and continuance. Journal of Marketing Theory and Practice, 16(3), 247-258.

Rynes, S. L., Colbert, A. E., & Brown, K. C. (2002). Hr Professionals' Beliefs about Effective Human Resource Practices: Correspondence between Research and Practice. Human Resource Management, 41(2), 149.

Rynes, S. L., Gerhart, B., & Parks, L. (2005). Personnel Psychology: Performance Evaluation and Pay for Performance. Annual Review of Psychology, 56(1), 571-600.

Sánchez-Rodríguez, C., Hemsworth, D., & Martinez-Lorente, Á. R. (2004). Quality Management Practices in Purchasing and its Effect on Purchasing's Operational Performance and Internal Customer Satisfaction. International Journal of Logistics: Research & Applications, 7(4), 325-344.

Sanders, K., van Riemsdijk, M., & Groen, B. (2008). The gap between research and practice: a replication study on the HR professionals' beliefs about effective human resource practices. International Journal of Human Resource Management, 19(10), 1976-1988.

Saunders, M., & Tosey, P. (2012). The layers of research design. Rapport, Winter, 2013, 58-59.

Scarbrough, H. (2000). The HR implications of supply chain relationships

Schiele, H. (2006). How to distinguish innovative suppliers? Identifying innovative suppliers as new task for purchasing. Industrial Marketing Management, 35(8), 925-935.

Schoenherr, T., Modi, S. B., Benton, W. C., Carter, C. R., Choi, T. Y., Larson, P. D., et al. (2012). Research opportunities in purchasing and supply management. International Journal of Production Research, 50(16), 4556-4579.

Schultz, N., Cialdini, R.B. and Goldstein, G. (2007), The constructive, destructive, and reconstructive power of social norms. Psychological Science, 18(5), 429–434.

Schultz, P. W., Nolan, J. M., Cialdini, R. B., Goldstein, N. J., & Griskevicius, V. (2007). The constructive, destructive, and reconstructive power of social norms. Psychological science, 18(5), 429-434.

Schuster, J. R., & Zingheim, P. K. (1996). The new pay: Linking employee and organizational performance. Jossey-Bass.

Schuster, J. R., Clark, B., & Rogers, M. (1971). Testing Porttons of the Porter and Lawler Model regarding the Motivational Role of Pay. Journal of Applied Psychology, 55(3), 187-195.

Schuster, M., & Kesler, G. (2011). Aligning reward systems in organizational design: How to activate the orphan star point. People & Strategy, 34(4), 38-45.

Sels, L. (2003). Strategisch management van human resources; maakt het een verschil? [Does strategic management of human resources matter?] Tijdschrift Voor HRM, , 35-61.

Şen, S., Başligil, H., Şen, C., & Baracli, H. (2008). A framework for defining both qualitative and quantitative supplier selection criteria considering the buyer–supplier integration strategies. International Journal of Production Research, 46(7), 1825-1845.

Shavelson, R. J., Phillips, D. C., Towne, L., & Feuer, M. J. (2003). On the science of education design studies. Educational researcher, 32(1), 25-28.

Shaw, M. J., Beebe, T. J., Jensen, H. L., & Adlis, S. A. (2001). The use of monetary incentives in a community survey: impact on response rates, data quality, and cost. Health services research, 35(6), 1339.

Sheridan, J. E., Richards, M. D., & Slocum Jr., J. W. (1973). The Descriptive Power of Vroom's Expectancy Model of Motivation Academy of Management.

Sheth, J. N. (1973). A Model of Industrial Buyer Behavior. Journal of Marketing, 37(4), 50-56.

Silverman, D. (1970). The theory of organisations: a sociological framework. London: Heinemann.

Smith, P. C., & Cranny, C. J. (1968). Psychology of Men at Work. Annual Review of Psychology, 19(1), 467.

Snijders, C., Tazelaar, F., & Batenburg, R. (2003). Electronic decision support for procurement management: evidence on whether computers can make better procurement decisions. Journal of Purchasing and Supply Management, 9(5), 191-198.

Sonmez, M., & Moorhouse, A. (2010). Purchasing professional services: which decision criteria? Management Decision, 48(2), 189-206.

Spekman, R. E., & Johnston, W. J. (1986). Relationship Management: Managing the Selling and the Buying Interface. Journal of Business Research, 14(6), 519-531.

Spender, J.C. (1989), Industry recipes: The nature and sources of managerial judgment, Oxford: Basic Blackwell.

Spina, G., Caniato, F., Luzzini, D., & Ronchi, S. (2013). Past, present and future trends of purchasing and supply management: An extensive literature review. Industrial Marketing Management, 42(8), 1202-1212.

Stajkovic, A. D., & Luthans, F. (2001). Differential Effects of Incentive Motivators on Work Performance. Academy of Management Journal, 44(3), 580-590.

Stanley, L. L., & Wisner, J. D. (2001). Service quality along the supply chain: implications for purchasing. Journal of operations management, 19(3), 287-306.

Steigenberger, N. (2013). Power shifts in organizations: the role of high-performance work systems. International Journal of Human Resource Management, 24(6), 1165-1185.

Stevens, G. C. (1989). Integrating the supply chain. International Journal of Physical Distribution & Materials Management, 19(8), 3-8.

Stevens, G. C., & Johnson, M. (2016). Integrating the supply chain ... 25 years on. International Journal of Physical Distribution & Logistics Management, 46(1), 19-42. doi:10.1108/IJPDLM-07-2015-0175

Stolle, M., & Moser, R. (2009). The Effects of Purchasing and Supply Management on Performance: A Structural Model Indian Institute of Management Bangalore.

Subramony, M. (2009). A meta-analytic investigation of the relationship between HRM bundles and firm performance. Human Resource Management, 48(5), 745-768.

Subramony, M., Krause, N., Norton, J., & Burns, G. N. (2008). The Relationship Between Human Resource Investments and Organizational Performance: A Firm-Level Examination of Equilibrium Theory. Journal of Applied Psychology, 93(4), 778-788.

Sutton, R. S., & Barto, A. G. (1998). Reinforcement learning: An introduction MIT press Cambridge.

Sutton, S. (2010). Encyclopedia of Case Study Research. Library Journal, 135(9), 101-101.

Tassabehji, R. and Moorhouse, A. (2008) 'The changing role of procurement', Journal of purchasing and supply management, Vol. 14, Issue 1, pp. 55-68.

Tate, W. L., Ellram, L. M., Bals, L., Hartmann, E., & van, d. V. (2010). An agency theory perspective on the purchase of marketing services. Industrial Marketing Management, 39(5), 806-819. doi:10.1016/j.indmarman.2009.08.005

Tazelaar, F., & Snijders, C. (2004). The myth of purchasing professionals' expertise. More evidence on whether computers can make better procurement decisions.Journal Of Purchasing & Supply Management, 10(4/5), 211-222.

Tellis, W. M. (1997). Application of a case study methodology. The Qualitative Report, 3(3), 1-19.

Ten Have, S. (2002). Voorbeeldig veranderen: Een kwestie van organiseren: Het besturen van doelgerichte en doelbewuste veranderingen in complexe ondernemingen door richting, consistentie, samenhang en feedback Nieuwezijds.

The State of the HR Profession. (20130501). Human Resource Management, 52(3), 457.

Thorndike, E. L. (1911). Animal intelligence: Experimental studies. Macmillan.

Thorndike, E. L. (1911). Individuality Houghton, Mifflin.

Tims, M., Derks, D., & Bakker, A. B. (2016). Job crafting and its relationships with person–job fit and meaningfulness: A three-wave study. Journal of Vocational Behavior, 92, 44-53.

Torka, N. (2011). Agency workers and organisation's commitment to its workers. International Journal of Human Resource Management, 22(7), 1570-1585. doi:10.1080/09585192.2011.561966

Tosi, H. L., Katz, J. P., & Gomez-Mejia, L. (1997). Disaggregating the Agency Contract: the Effects of Monitoring, Incentive Alignment, and Term in Office on Agent Decision Making. Academy of Management Journal, 40(3), 584-602.

Tranfield, D., Denyer, D., & Smart, P. (2003). Towards a Methodology for Developing Evidence-Informed Management Knowledge by Means of Systematic Review. British Journal of Management, 14(3), 207-222.

Trawick, I. F., Swan, J. E., & Rink, D. (1989). Industrial Buyer Evaluation of the Ethics of Salesperson Gift Giving; Value of the Gift and Customer vs. Prospect Status. Journal of Personal Selling & Sales Management, 9(2), 31.

Trent, R. J., & Monczka, R. M. (1998). Purchasing and Supply Management: Trends and Changes Throughout the 1990s. International Journal Of Purchasing & Materials Management, 34(4), 2-11.

Trent, R. J., & Monczka, R. M. (1998). Purchasing and Supply Management: Trends and Changes Throughout the 1990s. International Journal of Purchasing & Materials Management, 34(4), 2-11.

Trent, R.J. (1998) 'Individual and collective team effort: a vital part of sourcing team success', International Journal of Purchasing and Materials Management, Vol. 34, Issue 4, pp. 46-54.

Ulrich, D. (1998). A New Mandate for Human Resources. Harvard Business Review, 76(1), 124-134.

Upadhaya, B., Munir, R., & Blount, Y. (2014). Association between performance measurement systems and organisational effectiveness. International Journal of Operations & Production Management, 34(7), 853-875.

Van Aken, J. E. (2001). Mode 2 knowledge production in the field of management. Eindhoven Centre for Innovation Studies,

Van Aken, J. E. (2005). Management research as a design science: Articulating the research products of mode 2 knowledge production in management. British Journal of Management, 16(1), 19-36.

Van de Vijver, M., Vos, B., & Akkermans, H. (2011). A tale of two partnerships: Socialization in the development of buyer–supplier relationships. Journal of Supply Chain Management, 47(4), 23-41.

Van der Meulen, B. (2003). New roles and strategies of a research council: intermediation of the principal-agent relationship. Science and Public Policy, 30(5), 323-336.

Van der Veen, J.A.A. (2013), De kracht van Ketensamenwerking: Waarom kennis en kunde in Supply Chain Management de Logistiek gaat verbeteren. Inaugurele rede, Nyenrode Business Universiteit, 5 juni 2013.

Van de Ven, H., & Johnson, P. E. (2006). Knowledge for Theory and Practice. Academy of Management Review, 31(4), 802-821.

Van Poucke, E., van Weele, A. J., & Matthyssens, P. (2014, April). The interrelationship between purchasing maturity, internal customer satisfaction and purchasing performance: an empirical study. In Proceedings of the 23rd annual IPSERA Conference (pp. 13-16).

Van Poucke, E., van Weele, A. J., & Matthyssens, P. (2015). Value creation and supply risk reduction in sourcing projects: effects of purchasing involvement and a proactive market orientation. In Proceedings of the 24th annual IPSERA Conference (pp. 1-13).

Van Weele, A.J. (2005), Purchasing and Supply Management, Analysis, Planning and Practice, London: Thompson Learning.

Van Weele, A.J. and Van Raaij, E.M. (2014), The Future of Purchasing and Supply Management Research: About Relevance and Rigor, Journal of Supply Chain Management, 50 (1), 56–72.

Vankov, I., Bowers, J., & Munafò, M. R. (2014). On the persistence of low power in psychological science. Quarterly Journal of Experimental Psychology, 67(5), 1037-1040. doi:10.1080/17470218.2014.885986

Verplanken, B., Aarts, H., van Knippenberg, A. and Moonen, A. (1998), Habit versus planned behaviour: A field experiment. British Journal of Social Psychology, 37: 111–128. doi:10.1111/j.2044-8309.1998.tb01160.x

Von Rosenstiel, L. (1975). Die motivationalen Grundlagen des Verhaltens in Organisationen, Leistung und Zufriedenheit (Vol. 2). Duncker & Humblot.

Von Rosenstiel, L. (2011). Employee Behavior in Organizations. On the Current State of Research. Management Revue, 22(4), 344-366.

Von Rosenstiel, L., Kehr, H. M., & Maier, G. W. (2000). 14 Motivation and Volition in Pursuing Personal. Motivational psychology of human development: Developing motivation and motivating development, 131, 287.

Voss, C., Tsikriktsis, N., & Frohlich, M. (2002). Case research in operations management. International journal of operations & production management, 22(2), 195-219.

Vroom, V. H. (1964). Work and motivation. New York: Wiley.

Vyrastekova, J., Onderstal, S., & Koning, P. (2012). Self-selection and the power of incentive schemes: an experimental study. Applied Economics, 44(32), 4211-4219.

Wacker, J. G. (1998). A definition of theory: research guidelines for different theory-building research methods in operations management. Journal of operations management, 16(4), 361-385.

Walker, H. A., & Cohen, B. P. (1985). Scope statements: Imperatives for evaluating theory. American Sociological Review, 288-301.

Walker, H., Schotanus, F., Bakker, E., & Harland, C. (2013). Collaborative Procurement: A Relational View of Buyer-Buyer Relationships. Public Administration Review, 73(4), 588-598.

Weber, C. A., Current, J. R., & Benton, W. C. (1991). Vendor selection criteria and methods. European Journal of Operational Research, 50(1), 2-18.

Webster Jr., F. E., & Wind, Y. (1972). A General Model for Understanding Organizational Buying Behavior. Journal of Marketing, 36(2), 12-19.

Webster, F. E., & Wind, Y. (1972). Organizational buying behavior. Prentice Hall.

Weick, K. E. (1967). Dissonance and Task Enhancement: A Problem for Compensation Theory? Organizational Behavior & Human Performance, 2(2), 189-208.

Weick, K.E. (1995), Sensemaking in organisations, London: Sage

Weick, K.E. (2007), The Generative Properties of Richness, Academy of Management Journal, 50 (1) 14-19.

Welling, D.T. and Kamann, D.J.F. (2001) Vertical Cooperation in the Construction Industry: Size Does Matter. Journal of Supply Chain Management, 37, 28-33.

Wernerfelt, B. (1984). A Resource-based View of the Firm. Strategic Management Journal, 5(2), 171-180.

Whipp, R., Rosenfeld, R., & Pettigrew, A. (1989). Culture and Competitiveness: Evidence from Two Mature Uk Industries. Journal of Management Studies, 26(6), 561-585.

Wiersma, U. J. (1992). The effects of extrinsic rewards in intrinsic motivation: A meta-analysis. Journal of Occupational & Organizational Psychology, 65(2), 101-114.

Williams, R., Paauwe, J., & Keegan, A. (2000). Possible futures for the HR funcytion in different markter. ERIM Report Series in Research in Management, , 44.

Williamson, O. E. (1979). Transaction-cost economics: the governance of contractual relations. Journal Of Law & Economics, 22(2), 233-261.

Wilson, E. J. (1996). Theory transitions in organizational buying behavior research. Journal of Business & Industrial Marketing, 11(6), 7.

Winship, Christopher, and Stephen L. Morgan. 1999. The estimation of causal effects from observational data. Annual Review of Sociology 25: 659-706.

Wiseman, R. M., & Gomez-Mejia, L. (1998). A Behavioural Agency Model of Managerial Risk Taking. Academy of Management Review, 23(1), 133-153.

Wiseman, R. M., Cuevas-Rodríguez, G., & Gomez-Mejia, L. R. (2012). Towards a social theory of agency. Journal of Management Studies, 49(1), 202-222.

Wisner, J. D., & Stanley, L. L. (1999). Internal Relationships and Activities Associated with High Levels of Purchasing Service Quality. Journal of Supply Chain Management, 35(3), 25-32.

Wolfe, B. D., & Samdahl, D. M. (2005). Challenging assumptions: Examining fundamental beliefs that shape challenge course programming and research. Journal of Experiential Education, 28(1), 25-43.

Wright, P. M., & Boswell, W. R. (2002). Desegregating HRM: A Review and Synthesis of Micro and Macro Human Resource Management Research. Journal of Management, 28(3), 247-276.

Wynstra, F. (2010). What did we do, who did it and did it matter? A review of fifteen volumes of the (European) Journal of Purchasing and Supply Management. Journal of Purchasing & Supply Management, 16(4), 279-292.

Wynstra, F., & Knight, L. (2004). JPSM—foundations and future development, 2004–2007

Wynstra, J. Y. F. (2006). Inkoop, Leveranciers en innovatie: van VOC tot Space Shuttle. Erasmus Research Institute of Management (ERIM), Rotterdam.

Yang, C. L. (2010). Improving supplier performance using a comprehensive scheme. Production Planning & Control, 21(7), 653-663.

Yeniyurt, S., Henke, J., & Yalcinkaya, G. (2014). A longitudinal analysis of supplier involvement in buyers' new product development: working relations, inter-dependence, co-innovation, and performance outcomes. Journal of the Academy of Marketing Science, 42(3), 291-308.

Yerkes, R.M. & J.D. Dodson (1908). The Relation of Strength of Stimulus to Rapidity of Habit-Formation. Journal of Comparative Neurology and Psychology, 18, 459-482.

Yin, R. (2003). Case study methodology.

Yin, R. K. (1981). The Case Study Crisis: Some Answers. Administrative Science Quarterly, 26(1), 58-65.

Yin, R. K. (1994). Case study research: design and methods. Applied social research methods series, 5. Biography, Sage Publications, London.

Youndt, M. A., Snell, S. A., Dean, J. James W., & Lepak, D. P. (1996). Human Resource Management, Manufacturing Strategy, and Firm Performance. Academy of Management Journal, 39(4), 836-866.

Young, J. A., & Varble, D. L. (1997). Purchasing's Performance as Seen By Its Internal Customers: A Study in a Service Organization. International Journal of Purchasing & Materials Management, 33(3), 36-41.

Zeleny, M. (2008). Strategy and strategic action in the global era: overcoming the knowing-doing gap. International Journal of Technology Management, 43(1-3), 64-75.

Zenger, T. R., & Marshall, C. R. (2000). Determinants of incentive intensity in group-based rewards. Academy of Management Journal, 43(2), 149-163.

Zheng, J., Knight, L., Harland, C., Humby, S., & James, K. (2007). An analysis of research into the future of purchasing and supply management. Journal of Purchasing & Supply Management, 13(1), 69-83.

Zsidisin, G.A, (2003), Managerial Perceptions of Supply Risk, The Journal of Supply Chain Management, Winter, 14-25.

Zuijderhoudt, R. (2007). Op zoek naar synergie, omgaan met onoplosbare problemen. Bussum. ISBN 978 90 811884 1 8. Netherlands:

Appendices

Appendix A

Nr.	Description of elements of purchasing criteria
1	Component/services price
2	Component/ services quality
3	Other Costs Of Organization
4	Product or service flexibility
5	Timeliness
6	Process flexibility
7	Service and support
8	Risk

Appendix i: Description of element of purchasing criteria.

Nr.	Description of elements of supplier relationship
1	Sharing information with suppliers
2	Asking suppliers to share information with your plant
3	Sharing knowledge with suppliers
4	Asking suppliers to share knowledge
5	Involving the suppliers in your plant's decision making
6	Asking suppliers to involve you in their decision making
7	Making investments to support a smooth product flow with suppliers
8	Asking suppliers to make investments to support a smooth product flow with suppliers
9	Govern relationship with suppliers by contract
10	Standard purchasing contracts
11	Operational targets in the contract
12	Charge suppliers for the costs of deviations
13	We aim to find a satisfactory solution to the disagreement
14	Frequently update the contract with suppliers
15	Change the contract whenever business changes
16	Aim to solve disagreements with our suppliers quickly
17	Work with our suppliers to prevent problems
18	Committed to our suppliers to help
19	Want to achieve commitment from suppliers
20	Demand an annual improvement of performance
21	Help our suppliers to improve their performance
22	Invite suppliers to help us improve our performance
23	Base our business with suppliers on mutual benefit and trust
24	Faced with adversity, suppliers can rely on us
25	Aim to involve suppliers
26	Effort so that our suppliers are satisfied
27	Aim to involve suppliers so that they make an effort
28	Aim for long term relations and contract terms
29	Aim for contract terms of max 2 years with our suppliers

Appendix ii: Description of element of supplier relations.

Nr.	Description of elements of internal customer relationship
1	Aligning quantitative and qualitative goals
2	Sharing information with internal customers
3	Asking internal customers to jointly organize a single point of coordination
4	Aligning relevant KPI's
5	Asking internal customers to involve purchasing in their decision making
6	Asking internal customers to make investments
7	Asking internal customers to align (HR) incentives
8	Govern relationship with internal customers SLA's
9	Differentiate in services for internal customers
10	Monitor purchasing performance monthly /yearly basis
11	Charge internal customers for the costs of the purchasing process
12	Frequently update the SLA with internal customers

Appendix iii: Description of elements of internal customer relationship.

Appendix B

Purchasing criteria	1. Actual		2. Ideal		3. Incentives
	Please indicate what you currently prioritize when purchasing components/services for your firm *and why*? Rank in the left hand column and Distribute roughly 100 points across all headings in the right hand column.		Please indicate what you would optimally like to prioritize when purchasing components/services for your firm *and why*? Rank in the left hand column and Distribute roughly 100 points across all headings in the right hand column.		Please indicate what your firm rewards or emphasizes as the most important the top 3 aspects, by ranking these with 1, 2 and 3; Please tell us, *how and why* they reward these dimensions?
	RANKING	*Weights*	*RANKING*	*Weights*	*RANKING TOP 3*
Component/services price					
Component/ services quality (e.g. average defect rate, perceived brand quality, etc)					
Other Costs Of Organization (ordering, handling, servicing, payment, storage, maintenance, decommissioning etc)					
Product or service flexibility (e.g. component customization ability, innovation)					
Timeliness (e.g. On-time delivery, Delivery reliability / dependability)					
Process flexibility (e.g. Component/service volume flexibility, Component / service mix flexibility)					
Service and support					
Risk (control risk, financial risk, supply risk, environmental risk)					
Anything else? Please elaborate…					
	Total	100 Pts.	Total	100 Pts.	Total 100 Pts.

Appendix iv: Questionnaire Purchasing Gaps for PM and IC

	Supplier Relations	Several activities in which you may engage in with your suppliers. Please indicate what you <u>currently and optimized</u> do when purchasing components/services for your firm *and why*? Also indicate if there are incentives that stimulate the activity														
		Answer scale: 1-5 where 1=not at all, 2=little, 3 = neither much nor little, 4= much, 5=very much														
		1. Actual					2. Ideal					3. Incentive				
1.	**<u>Sharing information with suppliers</u>** about for example changes in purchasing orders, planned orders, inventory levels, product design specifications, performance feedback, demand forecasting, production planning.	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
2.	**<u>Asking suppliers to share information with your plant</u>** about for example production capacity, order status, delivery schedule, changes in delivery schedule, lead times for products.	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
3.	**<u>Sharing knowledge with suppliers</u>** such as process-oriented and operative advice, know-how, strategic advice, market entry advice, R&D.	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
4.	**<u>Asking suppliers to share knowledge</u>** such as process-oriented and operative advice, know-how, strategic advice, purchasing advice, R&D.	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
5.	**<u>Involving the suppliers in your plant's decision making</u>** regarding for example initial product design, product modification, initial production process design, production process modification, production process planning, quality improvement, and cost control.	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
6.	**<u>Asking suppliers to involve you in their decision making</u>** regarding for example initial product design, product modification, initial production process design, production process modification, production process planning, quality improvement, and cost control.	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐

	Supplier Relations	Several activities in which you may engage in with your suppliers. Please indicate what you currently and optimized do when purchasing components/services for your firm *and why*? Also indicate if there are incentives that stimulate the activity														
		Answer scale: 1-5 where 1=not at all, 2=little, 3 = neither much nor little, 4= much, 5=very much														
		1. Actual					2. Ideal					3. Incentive				
7.	**Making investments to support a smooth product flow with suppliers**, for example investments in: Information systems, Implementation of production practices (Pull system, Cellular manufacturing, Cycle time reduction, Bottleneck/constraint removal), Training of existing personnel (production personnel, R&D personnel, etc.), Appointing new personnel (production, R&D, etc.), Equipment, machines and tools for production, packaging, storage, transportation, Facilities for production and storage (buildings and warehouses)	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
8.	**Asking suppliers to make investments to support a smooth product flow with suppliers**, for example investments in: Information systems, Implementation of production practices (Pull system, Cellular manufacturing, Cycle time reduction, Bottleneck/constraint removal), Training of existing personnel (production personnel, R&D personnel, etc.), Appointing new personnel (production, R&D, etc.), Equipment, machines and tools for production, packaging, storage, transportation, Facilities for production and storage (buildings and warehouses)	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
9.	We govern the relationship with suppliers by the rules and regulations of the contract.	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
10.	We have standard purchasing contracts the suppliers have to agree with	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐

	Supplier Relations	Several activities in which you may engage in with your suppliers. Please indicate what you <u>currently and optimized</u> do when purchasing components/services for your firm *and why*? Also indicate if there are incentives that stimulate the activity														
		Answer scale: 1-5 where 1=not at all, 2=little, 3 = neither much nor little, 4= much, 5=very much														
		1. Actual					2. Ideal					3. Incentive				
11.	We have operational targets in the contract about delivery time and quality performance that are monitored.	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
12.	We charge suppliers for the costs of deviations from agreed performance indicators.	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
13.	Whenever disagreement occurs, we aim to find a satisfactory solution to the disagreement within the contract.	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
14.	We frequently update the contract with suppliers to meet our firm's needs.	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
15.	We change the contract with suppliers whenever our own business changes.	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
16.	We aim to solve disagreements with our suppliers quickly and easily without having to rely on the contract.	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
17.	We will work with our suppliers to prevent problems.	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐

	Supplier Relations	Several activities in which you may engage in with your suppliers. Please indicate what you currently and optimized do when purchasing components/services for your firm *and why*? Also indicate if there are incentives that stimulate the activity														
		Answer scale: 1-5 where 1=not at all, 2=little, 3 = neither much nor little, 4= much, 5=very much														
		1. Actual					2. Ideal					3. Incentive				
18.	We are committed to our suppliers to help them succeed.	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
19.	We want to achieve commitment from suppliers so that they want to help us succeed.	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
20.	We demand an annual improvement of performance by our suppliers	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
21.	We help our suppliers to improve their performance, even at a cost.	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
22.	We invite suppliers to help us improve our performance.	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
23.	We base our business with suppliers on mutual benefit and trust.	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
24.	When faced with adversity, suppliers can rely on us.	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐

	Supplier Relations	Several activities in which you may engage in with your suppliers. Please indicate what you <u>currently and optimized</u> do when purchasing components/services for your firm *and why*? Also indicate if there are incentives that stimulate the activity														
		Answer scale: 1-5 where 1=not at all, 2=little, 3 = neither much nor little, 4= much, 5=very much														
		1. Actual					2. Ideal					3. Incentive				
25.	We aim to involve suppliers so that when faced with adversity, we can rely on them.	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
26.	We will make an effort so that our suppliers are satisfied.	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
27.	We aim to involve suppliers so that they make an effort that we are satisfied.	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
28.	We aim for long term relations and contract terms with our suppliers	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
29.	We aim for contract terms of max 2 years with our suppliers	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐

	Internal Customer Relations	Several additional activities in which you may engage in with your internal customers. Please indicate what you currently and optimized do with your internal customers. Also indicate if there are incentives that stimulate the activity														
		Answer scale: 1-5 where 1=not at all, 2=little, 3 = neither much nor little, 4= much, 5=very much														
		1. Actual					2. Ideal					3. Incentive				
1.	Aligning quantitative and qualitative goals for purchasing and supplier related activities	1 □	2 □	3 □	4 □	5 □	1 □	2 □	3 □	4 □	5 □	1 □	2 □	3 □	4 □	5 □
2.	Sharing information with internal customers about purchasing and supplier processes	1 □	2 □	3 □	4 □	5 □	1 □	2 □	3 □	4 □	5 □	1 □	2 □	3 □	4 □	5 □
3.	Asking internal customers to jointly organize a single point of coordination for purchasing and supplier issues	1 □	2 □	3 □	4 □	5 □	1 □	2 □	3 □	4 □	5 □	1 □	2 □	3 □	4 □	5 □
4.	Aligning relevant KPI's for uniform process and activity validation and evaluation.	1 □	2 □	3 □	4 □	5 □	1 □	2 □	3 □	4 □	5 □	1 □	2 □	3 □	4 □	5 □
5.	Asking internal customers to involve purchasing in their decision making regarding product or service changes (early purchasing involvement).	1 □	2 □	3 □	4 □	5 □	1 □	2 □	3 □	4 □	5 □	1 □	2 □	3 □	4 □	5 □
6.	Asking internal customers to make investments to support a smooth product flow with suppliers, for example investments in: information systems., implementation of production practices	1 □	2 □	3 □	4 □	5 □	1 □	2 □	3 □	4 □	5 □	1 □	2 □	3 □	4 □	5 □
7.	Asking internal customers to align (HR) incentives in order to stimulate the idea of "one company one goal"	1 □	2 □	3 □	4 □	5 □	1 □	2 □	3 □	4 □	5 □	1 □	2 □	3 □	4 □	5 □
8.	We govern the relationship with internal customers by the rules and regulations of (service level agreements) SLA's.	1 □	2 □	3 □	4 □	5 □	1 □	2 □	3 □	4 □	5 □	1 □	2 □	3 □	4 □	5 □
9.	We differentiate in services for internal customers based upon purchasing volume and critical impact on overall strategy	1 □	2 □	3 □	4 □	5 □	1 □	2 □	3 □	4 □	5 □	1 □	2 □	3 □	4 □	5 □
10.	We monitor purchasing performance on a monthly basis and evaluate on a yearly basis.	1 □	2 □	3 □	4 □	5 □	1 □	2 □	3 □	4 □	5 □	1 □	2 □	3 □	4 □	5 □
11.	We charge internal customers for the costs of the purchasing process.	1 □	2 □	3 □	4 □	5 □	1 □	2 □	3 □	4 □	5 □	1 □	2 □	3 □	4 □	5 □
12.	We frequently update the SLA with internal customers to meet our firm's needs.	1 □	2 □	3 □	4 □	5 □	1 □	2 □	3 □	4 □	5 □	1 □	2 □	3 □	4 □	5 □

Appendix C

Introduction of case company A

The first company studied is a multinational in the high-tech sector. The firm is order-driven and bases its operations on push technology: that is, it innovates to generate demand for its products. Its purchasing volume in 2011 was about € 4 billion. The firm employs about 8,000 employees. The firm considers itself knowledge-based, and therefore believes that its future success depends on its ability to recruit, develop and retain adequately educated and skilled employees. In order to ensure continuity in these required skills and competencies, the firm's HRM approach focuses on having the right people in the right place at the right time. Further, career development is a continuous practice enacted by the HRM department and each employee is provided with annual targets. The firm reported net sales of € 5.65 billion and a net profit of € 1.47 billion in 2011 (respectively € 6.29 and € 1.39 billion in 2015).

The most important element of the firm's current purchasing policy is its so-called technology road map that consists of a triangle: inventory turnover ratio – risk – performance. The high fluctuations in demand require a supply chain that can cope with a high move rate. Risk is mainly seen as managing the responsibility of always delivering on time (dependability). Performance is seen in terms of quality, logistics, technology and cost (QLTC).

The internal customer (IC) is responsible for developing new platforms. The IC has little influence over the purchasing policy despite having a strong influence on the operational process. Nevertheless, internal customers do have veto rights over several product-related purchasing decisions. The internal customers stated that they were familiar with the purchasing policy and objectives, and they evaluated the overall PM performance at 8 on a ten-point scale.

In this firm, the PM was involved with two ICs. In addition to the responses to our questionnaires, relevant – often confidential – purchasing documentation was studied along with public sources (for instance the job descriptions of purchasing functions). We were unable to involve the HRM department in this study. Case A was categorized by interviewers as having a dominancy on purchasing coordination by 'centre-led purchasing'.

Introduction of case company B

This company is an international construction company. It has four divisions and eleven subsidiaries. The company is one of the largest construction companies in Europe and has more than 25,000 employees. They are active in the construction, property, civil engineering, public-private partnerships, mechanical and electrical contracting, consultancy and engineering, and facilities management sectors. In 2011, their turnover was €7.9 billion (in 2014: €7.3 billion). The total purchasing volume in 2011 was about €5.8 billion. There is a central Purchasing department at the headquarters. Decentralized Purchasing departments are also present in some divisions and regions.

The most important element of the current purchasing policy is to achieve companywide purchasing synergy. The economic crisis has impacted upon the market in which the company is operating. There is a decline in demand, increased competition and sharper pricing of goods and services. The role of the central Purchasing department has grown in recent years as the entire company has become increasingly centralized

Internal customers (divisions and/or regions) have an important role in developing the purchasing policy. They are treated in different ways depending on their market positioning. Purchasing has to negotiate with the internal customers about the support level offered by the central Purchasing department. The internal customers are familiar with the purchasing policy and objectives, especially in the area of supplier selection. The overall performance of the Purchasing Department was evaluated as 8 on a ten-point scale by the internal customers.

In this firm, the PM interacted with two ICs. In addition to the responses to our questionnaires, relevant – often confidential – purchasing documentation was studied along with public sources (for instance the job descriptions of purchasing functions). We were unable to involve the HRM department in this study. Case B was categorized by interviewers as having a dominancy on purchasing coordination by 'coordinated purchasing'.

Introduction of case company C

Case company C is an international logistics company that is active in more than 220 countries and territories. The company has about 275,000 employees and, in 2010, the company generated a turnover of more than €51 billion (in 2014: €56.6 billion). Company C is structured in four divisions that each operate under the control of their own divisional headquarters. Purchasing is a centralized group management function, and the four divisions are referred to as business partners.

The purchasing policy is based on an AT Kearney model that starts with the demand generated from the business. A demand analysis leads to the buying requirements. Market analyses and a market approach strategy lead to supplier selection and contracting. The purchasing policy is aligned with the group's strategy that is based on managing external customers, shareholders and employees. Purchasing objectives are focused on savings (4% year on year), purchasing compliance and business partner satisfaction. Internal customers have a role in developing some areas of the purchasing policy. In seeking savings, the internal customers are fully aligned. The overall performance of the Procurement Department was scored at an average of 6.3 (three individual IC ratings of 5, 6 and 8) on a ten-point scale by the internal customers.

In this firm, the PM was involved with three ICs. In addition to the responses to our questionnaires, relevant – often confidential – purchasing documentation was studied along with public sources (for instance the job descriptions of purchasing functions). In this case, we were able to indirectly involve the HRM department in the study. Case C was categorized by interviewers as having a dominancy on purchasing coordination by 'coordinated purchasing'.

Introduction of case company D

This company is a multinational in the high-tech telecommunication sector. R&D is one of the most important functions in the firm, and the company has over 30,000 patents in almost 100 countries. The firm employs about 104,000 employees and reported net sales of €203.3 billion in 2011 (in 2014: €228 billion). The case study focused on the Dutch office, which forms part of the Europe region (one of four regions globally) and has mainly a sales/customer focus. The company's headquarters – not in the Netherlands - is responsible for overall strategy and for group management functions such as purchasing.

About 2,700 suppliers are managed by the Dutch Purchasing department. The volume purchased in 2011 by the Netherlands office is seen as confidential. The most important elements of the current purchasing policy are its customer focus, the total cost of ownership, supplier governance, category management, people culture and competences, processes and methods and tools. The most important purchasing objectives are sourcing cost reductions, sourcing improved margins and stakeholder involvement. In practice, the Dutch company is an internal customer of the central Purchasing department. The Purchasing department in the Netherlands is responsible for executing the central purchasing policy. The Operations and Sales departments are the most important internal customers. The influence of the internal customers is organized through category teams who have to formally approve the purchasing strategy. However, the internal customers stated that they were not familiar with the purchasing objectives and that there was little influence on the purchasing policy. The overall performance of the Purchasing department was rated at 7 (individual ratings of 6 and 8) on a ten-point scale by the internal customers.

In this firm, the PM was involved with two ICs. In addition to the responses to our questionnaires, relevant – often confidential – purchasing documentation was studied along with public sources (for instance the job descriptions of purchasing functions). We were unable to involve the HRM department in this study. Case D was categorized by interviewers as having a dominancy on purchasing coordination by 'centralized purchasing'.

Introduction of case company E

Case company E develops and produces floors for the business market, such as for offices, retail units and hospitals. They have 2,706 employees and a turnover of CHF 805 million in 2011 (in 2014: CHF 1,227 million). They focus on environmentally friendly, functional and design-oriented floors. They have a sales presence in 32 countries and a worldwide market share of over 60%. There are 14 manufacturing plants in Europe, including four in the Netherlands.

Purchasing is important for the company for various reasons. First the quality of raw material is important, if the raw material is not to specification it can have major consequences for production capacity. The company strives to purchase and produce in as environmental friendly a way as possible. The purchasing volume is confidential. Important elements of the current purchasing policy are vendor selection, vendor acceptance, vendor master data, purchase order procedures and, most importantly, the relationship with the internal customers. The three most important purchasing objectives are to secure supply, maximize profit and improve environmental performance. There are long-term relationships with raw material suppliers, some going back more than a century. The purchasing policy is established with the internal customers. The main objective of the policy is the internal alignment of purchasing goals and processes between the local factories. The most important goals for the Purchasing department are servicing the internal customers and implementing the necessary and agreed purchasing processes. Its most important internal customers are sales, marketing and production and finance. Environmental performance is not a big issue for the internal customers. The internal customers have limited contact with the suppliers but the overall performance of the Purchasing department was rated as 8 by all three internal customers on a ten-point scale by the internal customers.

In this firm, the PM was involved with three ICs, although complete sets of data were not collected from all of them. In addition to the responses to our questionnaires, relevant – often confidential – purchasing documentation was studied along with public sources (for instance the job descriptions of the purchasing functions). We were unable to involve the HRM department in this study. Case E was categorized by interviewers as having a dominancy on purchasing coordination by 'centralized purchasing'.

Introduction of case company F

Case company F is an international manufacturing company in the agriculture sector that produces and supplies animal feed and commodities. In 2011, the company had an annual turnover of €816 million (in 2014: €2,292 million true mergers with several companies in combination with autonomous growth). The company's headquarters are situated in the Netherlands with production plants in the Netherlands, UK and Germany. Raw materials are purchased from all over the world and mainly shipped to Rotterdam and Hamburg for further transport by ship or train to the production locations. The firm has about 884 employees. Its strategy is to become the market leader through acquisitions.

The company wants to become the best purchasing organization in the agriculture sector in European. Its goal is to create efficient supply logistics, transparency, predictability, professionalism, sustainability and dependability. Timing is important due to its products being perishable and quality is essential. The company's main objectives are divided into three categories: ambition, efficiency and sustainability. Under ambition its objectives include: innovation and stimulating entrepreneurship, collaboration with R&D and commerce, a more active Purchasing department, improving chain thinking, and the

development of a purchasing portfolio (the reasons for using certain suppliers are currently unclear). Under efficiency, objectives include: organizational and good management information, transparency over commodities and *Prices*, and a focus on costs. Under sustainability, objectives include finding new sustainable suppliers and sourcing of environmentally-friendly raw materials.

The internal customers only had a minor influence in developing the purchasing policy. The purchasing policy used to be mainly based on only market requirements but this has changed recently with increased supply chain integration that considers the internal customer perspective. In this firm, the PM was involved with two ICs. In addition to the responses to our questionnaires, relevant – often confidential – purchasing documentation was studied along with public sources (for instance the job descriptions of purchasing functions). We were unable to involve the HRM department in this study. Case F was categorized by interviewers as having a dominancy on purchasing coordination by 'centralized purchasing'.

Introduction of case company G

Case company G is a major manufacturer of aircraft components for the military industry and also for commercial aircraft and business jets. Being active in the aerospace industry, the company is obliged to follow strict regulations. The firm reported a turnover of €483 million in 2011 (in 2014: €561 million) with a purchasing volume of about €280 million. Roughly 59 FTE buying professionals work in the Purchasing department.

The most important element of the current purchasing policy is the production strategy which is the responsibility of production units. The company's mission is stated as initiating, developing and maintaining supply chains to allow, keep or gain a competitive market position. The most important purchasing objectives are based on three focus areas: operational excellence, global footprint and innovation; and the key values are: People, Professionalism, Product Life Circle and QLTC (Quality, Logistics, Technology and Cost).

The purchasing policy is derived from the overall business strategy to which the entire organization was able to provide input. As such, the internal customers have influence in the development of the purchasing policy. The overall performance of the Purchasing department was rated 8 on a ten-point scale by the internal customers.

In this firm, the PM was involved with two ICs. In addition to the responses to our questionnaires, relevant – often confidential – purchasing documentation was studied along with public sources (for instance the job descriptions of purchasing functions). We were able to involve the HRM department in this study. Case G was categorized by interviewers as having a dominancy on purchasing coordination by 'centralized purchasing'.

Introduction of case company H

Case company H is a Dutch financial company in the banking and insurance industry with multiple brands for individual and business consumers. Each brand has its own position in the market based on its financial expertise. The company mainly focusses on the retail market in the Netherlands, including small and medium sized businesses. The group's core products include savings and investments, mortgages and other property finance, insurance and pensions. In 2011, the firm employed about 6,928 employees and reported a balance sheet total of € 132 billion (in 2014: 68 billion).

The most important elements of its current purchasing policy are: (1) to save costs given the crisis in the financial sector, (2) to increase the number of long-term contracts, (3) to manage the use of such contracts, (4) to improve the purchase-to-pay (P2P) process and (5) to implement total cost ownership. The most important purchasing objectives are cost saving, customer satisfaction and to have budgetary

control. The input of the internal customers in developing the purchasing policy is organized through a purchasing board that consists of eight business directors. The internal customers rated the overall performance of the Purchasing department as 6.5 on a ten-point scale by the internal customers.

In this firm, the PM was involved with three ICs. In addition to the responses to our questionnaires, relevant – often confidential – purchasing documentation was studied along with public sources (for instance the job descriptions of purchasing functions). We were not able to involve the HRM department in this study. Case A was categorized by interviewers as having a dominancy on purchasing coordination by 'coordinated purchasing'.

Introduction of case company I

This company is a technical wholesaler and supplies a wide range of materials in the electrical, lighting, data communication and sanitary fields. Many of its customers are companies operating in the installation, semi government and retail industries. The firm is privately owned and reported a turnover of more than €1 billion in 2011 (in 2014: no public information available). It employs 2,000 spread across 36 sales offices, 2 distribution centres, 22 transfer points and a central office. About 70 people work in the Purchasing department. The company's mission consists of two parts: (1) supporting clients in the effective and efficient organization of their installation processes by offering advice and assisting them in choosing the products they need and then delivering these products on time, complete, and in the right place; (2) assisting the customers by providing services that support their various activities and enable them to carry out these activities in an easier way and with higher quality.

The purchasing volume in 2011 was €957 million (84% of the turnover). The five most important elements of the current purchasing policy were: 1) demand driven composition of the assortment, 2) supplier selection, 3) pricing, 4) margins and 5) product marketing. The most important purchasing objectives are based on achieving a market share of 70% and a full 100% product coverage alongside financial targets related to profit and working capital. The most important internal customers are the Sales and Marketing departments. These departments are intensively involved in the purchasing process. The internal customers rated the overall performance of the Procurement Department as 7 on a ten-point scale by the internal customers. In Company I, the PM was involved with two ICs. In addition to the responses to our questionnaires, relevant – often confidential – purchasing documentation was studied along with public sources (for instance the job descriptions of purchasing functions). We were unable to involve the HRM department in this study. Case I was categorized by interviewers as having a dominancy on purchasing coordination by 'center-led purchasing'.

Appendix v: Introduction of Case A to I.

Appendix D

	Description	Number of gaps								
		0	1	2	3	4	5	6	7	8
Gap 1	PM actual –PM ideal	PM								
Gap 2	IC actual – IC ideal	IC1, IC2								
Gap 3	Actual PM – Actual IC						IC2			IC1
Gap 4	Ideal PM – Ideal IC						IC2			IC1
Gap 5	Incentives PM – Actual PM	Matching of top 3: 3 out of 3								
Gap 6	Incentives IC – Actual IC	Matching of top 3 (IC2): 3 out of 3								
Gap 7	Incentives PM – Incentives IC	Matching of PMs and IC2's top 3: 1 out of 3								
Gap 8	Incentives PM – Ideal PM	Matching of top 3: 3 out of 3								
Gap 9	Incentives IC – Ideal IC	Matching of top 3 (IC2): 3 out of 3								
Gap 10	Incentives PM – Theory	Expert opinion: conforms with theory								
Gap 11	Incentives IC – Theory	Expert opinion: conforms with theory								

Appendix vi: Summary of findings for Case A related to purchasing criteria gap model.

	Description	Number of gaps								
		0	1	2	3	4	5	6	7	8
Gap 1	PM actual –PM ideal								PM	
Gap 2	IC actual – IC ideal						IC1, IC2			
Gap 3	Actual PM – Actual IC							IC1	IC2	
Gap 4	Ideal PM – Ideal IC						IC2			IC1
Gap 5	Incentives PM – Actual PM	Matching of top 3: 2 out of 3								
Gap 6	Incentives IC – Actual IC	Matching of top 3 (IC1): 3 out of 3								
Gap 7	Incentives PM – Incentives IC	Matching of PMs and IC1's top 3: 1 out of 3								
Gap 8	Incentives PM – Ideal PM	Matching of top 3: 1 out of 3								
Gap 9	Incentives IC – Ideal IC	Matching of top 3 (IC1): 3 out of 3								
Gap 10	Incentives PM – Theory	Expert opinion: does not conform with theory								
Gap 11	Incentives IC – Theory	Expert opinion: conforms with theory								

Appendix vii: Summary of findings for Case B related to purchasing criteria gap model.

	Description	Number of gaps								
		0	1	2	3	4	5	6	7	8
Gap 1	PM actual –PM ideal					PM				
Gap 2	IC actual – IC ideal	IC2, IC3						IC1		
Gap 3	Actual PM – Actual IC							IC1, IC2		IC3
Gap 4	Ideal PM – Ideal IC							IC2	IC1	IC3
Gap 5	Incentives PM – Actual PM	Matching of top 3: 2 out of 3								
Gap 6	Incentives IC – Actual IC	Matching of top 3: IC1 2 out of 2, IC2 2 out of 3, IC3 2 out of 3								
Gap 7	Incentives PM – Incentives IC	Matching of top 3: IC1 0 out of 3, IC2 1 out of 3, IC3 1 out of 3								
Gap 8	Incentives PM – Ideal PM	Matching of top 3: 2 out of 3								
Gap 9	Incentives IC – Ideal IC	Matching of top 3 IC1 1 out of 2, IC2 2 out of 3, IC3 2 out of 3								
Gap 10	Incentives PM – Theory	Expert opinion: conforms with theory								
Gap 11	Incentives IC – Theory	Expert opinion: does not conform with theory								

Appendix viii: Summary of findings for Case C related to purchasing criteria gap model.

	Description	Number of gaps								
		0	1	2	3	4	5	6	7	8
Gap 1	PM actual –PM ideal	PM								
Gap 2	IC actual – IC ideal	IC1							IC2	
Gap 3	Actual PM – Actual IC					IC1			IC2	
Gap 4	Ideal PM – Ideal IC				IC2	IC1				
Gap 5	Incentives PM – Actual PM	Matching of top 3: 3 out of 3								
Gap 6	Incentives IC – Actual IC	Matching of top 3 (IC1): 2 out of 3								
Gap 7	Incentives PM – Incentives IC	Matching of PMs and IC1's top 3: 2 out of 3								
Gap 8	Incentives PM – Ideal PM	Matching of top 3: 3 out of 3								
Gap 9	Incentives IC – Ideal IC	Matching of top 3 (IC1): 2 out of 3								
Gap 10	Incentives PM – Theory	Expert opinion: does not conform to theory								
Gap 11	Incentives IC – Theory	Expert opinion: does not conform to theory								

Appendix ix: Summary of findings for Case D related to purchasing criteria gap model.

	Description	Number of gaps								
		0	1	2	3	4	5	6	7	8
Gap 1	PM actual –PM ideal	PM								
Gap 2	IC actual – IC ideal			IC1						
Gap 3	Actual PM – Actual IC									IC1
Gap 4	Ideal PM – Ideal IC								IC1	
Gap 5	Incentives PM – Actual PM	Matching of top 3: 3 out of 3								
Gap 6	Incentives IC – Actual IC	Matching of top 3 (IC1): 3 out of 3								
Gap 7	Incentives PM – Incentives IC	Matching of PMs and IC1's top 3: 3 out of 3								
Gap 8	Incentives PM – Ideal PM	Matching of top 3: 3 out of 3								
Gap 9	Incentives IC – Ideal IC	Matching of top 3 (IC1: 3 out of 3								
Gap 10	Incentives PM – Theory	Expert opinion: conforms with theory								
Gap 11	Incentives IC – Theory	Expert opinion: conforms with theory								

Appendix x: Summary of findings for Case E related to purchasing criteria gap model.

	Description	Number of gaps								
		0	1	2	3	4	5	6	7	8
Gap 1	PM actual –PM ideal					PM				
Gap 2	IC actual – IC ideal	IC2			IC1					
Gap 3	Actual PM – Actual IC							IC1	IC2	
Gap 4	Ideal PM – Ideal IC								IC2	IC1
Gap 5	Incentives PM – Actual PM	Matching of top 3: 2 out of 3								
Gap 6	Incentives IC – Actual IC	Matching of top 3 (IC1): 2 out of 3								
Gap 7	Incentives PM – Incentives IC	Matching of PMs and IC1's top 3: 3 out of 3								
Gap 8	Incentives PM – Ideal PM	Matching of top 3: 2 out of 3								
Gap 9	Incentives IC – Ideal IC	Matching of top 3 (IC1): 3 out of 3								
Gap 10	Incentives PM – Theory	Expert opinion: is not conform with theory								
Gap 11	Incentives IC – Theory	Expert opinion: is not conform with theory								

Appendix xi: Summary of findings for Case F related to the purchasing criteria gap model.

	Description	Number of gaps								
		0	1	2	3	4	5	6	7	8
Gap 1	PM actual –PM ideal				PM					
Gap 2	IC actual – IC ideal					IC2			IC1	
Gap 3	Actual PM – Actual IC						IC2	IC1		
Gap 4	Ideal PM – Ideal IC								IC1, IC2	
Gap 5	Incentives PM – Actual PM	Matching of top 3: 2 out of 3								
Gap 6	Incentives IC – Actual IC	Matching of top 3: IC1 1 out of 3, IC2 2 out of 3								
Gap 7	Incentives PM – Incentives IC	Matching of top 3: IC1 1 out of 3, IC2 1 out of 3								
Gap 8	Incentives PM – Ideal PM	Matching of top 3: 3 out of 3								
Gap 9	Incentives IC – Ideal IC	Matching of top 3 IC1 2 out of 3, IC2 2 out of 3								
Gap 10	Incentives PM – Theory	Expert opinion: conforms with theory								
Gap 11	Incentives IC – Theory	Expert opinion: conforms with theory								

Appendix xii: Summary of Case G findings related to the purchasing criteria gap model.

	Description	Number of gaps								
		0	1	2	3	4	5	6	7	8
Gap 1	PM actual –PM ideal									PM
Gap 2	IC actual – IC ideal	IC1, IC3				IC2				
Gap 3	Actual PM – Actual IC					IC2		IC1	IC3	
Gap 4	Ideal PM – Ideal IC								IC3	IC1, IC2
Gap 5	Incentives PM – Actual PM	Matching of top 3: 1 out of 3								
Gap 6	Incentives IC – Actual IC	Matching of top 3: IC1 3 out of 3, IC2 3 out of 3, IC3 1 out of 2								
Gap 7	Incentives PM – Incentives IC	Matching of top 3: IC1 2 out of 3, IC2 2 out of 3, IC3 2 out of 2								
Gap 8	Incentives PM – Ideal PM	Matching of top 3: 1 out of 3								
Gap 9	Incentives IC – Ideal IC	Matching of top 3: IC1 3 out of 3, IC2 3 out of 3, IC3 1 out of 2								
Gap 10	Incentives PM – Theory	Expert opinion: does not conform with theory								
Gap 11	Incentives IC – Theory	Expert opinion: does not conform with theory								

Appendix xiii: Summary of findings for Case H related to purchasing criteria gap model Case H.

	Description	Number of gaps								
		0	1	2	3	4	5	6	7	8
Gap 1	PM actual –PM ideal	PM								
Gap 2	IC actual – IC ideal	IC1, IC2								
Gap 3	Actual PM – Actual IC									IC1, IC2
Gap 4	Ideal PM – Ideal IC									IC1, IC2
Gap 5	Incentives PM – Actual PM	Matching of top 3: 3 out of 3								
Gap 6	Incentives IC – Actual IC	Matching of top 3: 0 out of 3								
Gap 7	Incentives PM – Incentives IC	Matching of PMs and ICs top 3: n.a.								
Gap 8	Incentives PM – Ideal PM	Matching of top 3: 3 out of 3								
Gap 9	Incentives IC – Ideal IC	Matching of top 3: 0 out of 3								
Gap 10	Incentives PM – Theory	Expert opinion: conforms with theory								
Gap 11	Incentives IC – Theory	Expert opinion: does not conform with theory.								

Appendix xiv: Summary of findings for Case I related to the purchasing criteria gap model.

Appendix E

	A	B	C	D	E	F	G	H	I
	actual	actual	actual	actual	actual	actual	actual	actual	actual
Sharing information with suppliers	5	2	3	3	5	4	2	1	4
Asking suppliers to share information with your plant	4	4	2	3	4	4	2	1	1
Sharing knowledge with suppliers	4	1	2	3	2	3	2	2	4
Asking suppliers to share knowledge	3	1	3	3	2	3	2	2	4
Involving the suppliers in your plant's decision making	2	2	2	2	2	4	3	2	1
Asking suppliers to involve you in their decision making	3	1	1	2	2	4	2	2	4
Making investments to support a smooth product flow with suppliers	3	3	2	2	2	2	3	1	4
Asking suppliers to make investments to support a smooth product flow with suppliers	4	2	3	3	4	3	3	1	4
govern relationship with suppliers by contract	3	4	3	4	3	4	2	2	3
Standard purchasing contracts	5	4	5	4	3	2	2	4	3
Operational targets in the contract	5	3	3	3	4	4	2	2	4
Charge suppliers for the costs of deviations	2	3	2	2	2	4	2	2	3
We aim to find a satisfactory solution to the disagreement	4	4	3	4	4	4	4	3	4
Frequently update the contract with suppliers	4	3	3	3	3	2	2	1	3
Change the contract whenever business changes	2	2	3	4	2	3	2	1	4
Aim to solve disagreements with our suppliers quickly	5	2	3	2	4	4	4	2	4
Work with our suppliers to prevent problems	4	3	2	3	2	4	4	2	4
Committed to our suppliers to help	4	2	2	3	3	4	2	3	4
Want to achieve commitment from suppliers	4	3	2	4	3	4	2	1	4
Demand an annual improvement of performance	5	4	3	4	4	3	2	1	3
Help our suppliers to improve their performance	4	2	2	3	4	3	1	1	3
Invite suppliers to help us improve our performance	2	3	2	4	1	4	2	1	4
Base our business with suppliers on mutual benefit and trust	3	3	2	3	1	5	3	1	4
Faced with adversity, suppliers can rely on us	4	4	2	3	2	4	4	1	4
Aim to involve suppliers	4	3	2	3	4	4	4	1	4
Effort so that our suppliers are satisfied	4	3	2	4	2	4	2	1	3
Aim to involve suppliers so that they make an effort	3	2	2	4	2	4	3	1	4
Aim for long term relations and contract terms	5	3	3	3	2	5	5	1	5
Aim for contract terms of max 2 years with our suppliers	1	1	3	4	1	4	5	1	1
Average	3.62	2.66	2.48	3.17	2.72	3.66	2.69	1.55	3.48
StDev	1.08	0.97	0.74	0.71	1.10	0.77	1.04	0.78	0.99

Appendix xv: Actual score on elements of Supplier Relations

	A	B	C	D	E	F	G	H	I
	ideal	ideal	ideal	ideal	ideal	ideal	ideal	ideal	ideal
Sharing information with suppliers	5	4	4	3	5	5	4	5	4
Asking suppliers to share information with your plant	5	4	4	3	5	4	4	2	1
Sharing knowledge with suppliers	4	3	4	4	4	4	5	4	4
Asking suppliers to share knowledge	5	4	4	4	4	4	5	5	4
Involving the suppliers in your plant's decision making	4	3	4	3	2	4	5	3	1
Asking suppliers to involve you in their decision making	4	2	3	4	2	4	5	4	4
Making investments to support a smooth product flow with suppliers	4	3	3	4	5	2	4	4	4
Asking suppliers to make investments to support a smooth product flow with suppliers	4	4	3	4	5	3	5	5	4
govern relationship with suppliers by contract	4	4	2	5	4	4	2	5	3
Standard purchasing contracts	5	3	5	5	3	2	3	5	3
Operational targets in the contract	5	3	3	4	5	4	2	5	4
Charge suppliers for the costs of deviations	2	2	3	4	1	4	3	5	3
We aim to find a satisfactory solution to the disagreement	4	4	3	4	5	4	4	3	4
Frequently update the contract with suppliers	4	4	4	4	4	2	2	4	3
Change the contract whenever business changes	3	2	4	4	1	3	5	4	4
Aim to solve disagreements with our suppliers quickly	5	4	3	3	5	4	4	4	4
Work with our suppliers to prevent problems	5	4	3	4	4	4	4	5	4
Committed to our suppliers to help	4	3	3	4	5	4	3	5	4
Want to achieve commitment from suppliers	5	5	3	5	5	4	4	5	4
Demand an annual improvement of performance	5	4	4	5	5	4	5	4	3
Help our suppliers to improve their performance	4	4	3	4	5	3	4	4	3
Invite suppliers to help us improve our performance	5	4	4	5	3	4	5	5	4
Base our business with suppliers on mutual benefit and trust	3	4	4	4	5	5	4	4	4
Faced with adversity, suppliers can rely on us	4	4	3	4	4	4	4	4	4
Aim to involve suppliers	5	4	3	4	5	4	4	4	4
Effort so that our suppliers are satisfied	4	4	3	4	4	4	4	5	3
Aim to involve suppliers so that they make an effort	4	4	3	5	5	4	4	5	4
Aim for long term relations and contract terms	5	4	4	4	5	5	4	5	5
Aim for contract terms of max 2 years with our suppliers	1	1	2	4	1	4	5	5	1
Average	4.17	3.52	3.38	4.07	4.00	3.79	4.00	4.38	3.48
StDev	0.97	0.87	0.68	0.59	1.36	0.77	0.93	0.78	0.99

Appendix xvi: Ideal score on elements of Supplier Relations

	A	B	C	D	E	F	G	H	I
	a-i	a-i	a-i	a-i	a-i	a-i	a-i	a-i	a-i
Sharing information with suppliers	0	-2	-1	0	0	-1	-2	-4	0
Asking suppliers to share information with your plant	-1	0	-2	0	-1	0	-2	-1	0
Sharing knowledge with suppliers	0	-2	-2	-1	-2	-1	-3	-2	0
Asking suppliers to share knowledge	-2	-3	-1	-1	-2	-1	-3	-3	0
Involving the suppliers in your plant's decision making	-2	-1	-2	-1	0	0	-2	-1	0
Asking suppliers to involve you in their decision making	-1	-1	-2	-2	0	0	-3	-2	0
Making investments to support a smooth product flow with suppliers	-1	0	-1	-2	-3	0	-1	-3	0
Asking suppliers to make investments to support a smooth product flow with suppliers	0	-2	0	-1	-1	0	-2	-4	0
govern relationship with suppliers by contract	-1	0	1	-1	-1	0	0	-3	0
Standard purchasing contracts	0	1	0	-1	0	0	-1	-1	0
Operational targets in the contract	0	0	0	-1	-1	0	0	-3	0
Charge suppliers for the costs of deviations	0	1	-1	-2	1	0	-1	-3	0
We aim to find a satisfactory solution to the disagreement	0	0	0	0	-1	0	0	0	0
Frequently update the contract with suppliers	0	-1	-1	-1	-1	0	0	-3	0
Change the contract whenever business changes	-1	0	-1	0	1	0	-3	-3	0
Aim to solve disagreements with our suppliers quickly	0	-2	0	-1	-1	0	0	-2	0
Work with our suppliers to prevent problems	-1	-1	-1	-1	-2	0	0	-3	0
Committed to our suppliers to help	0	-1	-1	-1	-2	0	-1	-2	0
Want to achieve commitment from suppliers	-1	-2	-1	-1	-2	0	-2	-4	0
Demand an annual improvement of performance	0	0	-1	-1	-1	-1	-3	-3	0
Help our suppliers to improve their performance	0	-2	-1	-1	-1	0	-3	-3	0
Invite suppliers to help us improve our performance	-3	-1	-2	-1	-2	0	-3	-4	0
Base our business with suppliers on mutual benefit and trust	0	-1	-2	-1	-4	0	-1	-3	0
Faced with adversity, suppliers can rely on us	0	0	-1	-1	-2	0	0	-3	0
Aim to involve suppliers	-1	-1	-1	-1	-1	0	0	-3	0
Effort so that our suppliers are satisfied	0	-1	-1	0	-2	0	-2	-4	0
Aim to involve suppliers so that they make an effort	-1	-2	-1	-1	-3	0	-1	-4	0
Aim for long term relations and contract terms	0	-1	-1	-1	-3	0	1	-4	0
Aim for contract terms of max 2 years with our suppliers	0	0	1	0	0	0	0	-4	0
Average	-0.55	-0.86	-0.90	-0.90	-1.28	-0.14	-1.31	-2.83	0.00
StDev	0.78	0.99	0.82	0.56	1.19	0.35	1.26	1.07	0.00

Appendix xvii: Actual - Ideal score on elements of Supplier Relations

	A	B	C	D	E	F	G	H	I
incentive	incentive	incentive	incentive	incentive	incentive	incentive	incentive	incentive	incentive
Sharing information with suppliers	3	4	3	1	3	1	2	3	1
Asking suppliers to share information with your plant	4	4	2	1	5	1	1	1	1
Sharing knowledge with suppliers	3	5	2	1	2	1	2	2	1
Asking suppliers to share knowledge	4	4	3	1	4	1	1	3	1
Involving the suppliers in your plant's decision making	4	3	2	1	1	1	3	3	1
Asking suppliers to involve you in their decision making	3	1	2	1	1	1	1	3	1
Making investments to support a smooth product flow with suppliers	4	3	2	1	2	1	2	4	1
Asking suppliers to make investments to support a smooth product flow with suppliers	3	3	3	1	5	1	2	5	1
govern relationship with suppliers by contract	2	3	2	1	1	1	1	4	1
Standard purchasing contracts	4	3	5	1	2	1	2	4	1
Operational targets in the contract	4	4	3	1	4	1	1	4	1
Charge suppliers for the costs of deviations	2	3	3	1	4	1	2	4	1
We aim to find a satisfactory solution to the disagreement	3	4	3	1	2	1	4	2	1
Frequently update the contract with suppliers	3	2	4	1	2	1	2	3	1
Change the contract whenever business changes	2	3	4	1	3	1	2	3	1
Aim to solve disagreements with our suppliers quickly	3	2	3	1	5	1	4	4	1
Work with our suppliers to prevent problems	3	3	3	1	2	1	4	5	1
Committed to our suppliers to help	3	2	3	1	2	1	3	5	1
Want to achieve commitment from suppliers	2	4	3	1	2	1	3	5	1
Demand an annual improvement of performance	4	3	4	1	4	1	4	4	1
Help our suppliers to improve their performance	3	3	3	1	5	1	4	4	1
Invite suppliers to help us improve our performance	1	5	4	1	2	1	4	5	1
Base our business with suppliers on mutual benefit and trust	3	4	4	1	3	1	4	4	1
Faced with adversity, suppliers can rely on us	3	4	3	1	1	1	4	3	1
Aim to involve suppliers	3	4	3	1	3	1	4	3	1
Effort so that our suppliers are satisfied	3	4	3	1	2	1	4	5	1
Aim to involve suppliers so that they make an effort	4	5	3	1	2	1	4	5	1
Aim for long term relations and contract terms	4	3	4	1	2	1	5	5	1
Aim for contract terms of max 2 years with our suppliers	3	1	2	1	1	1	3	5	1
Average	3.10	3.31	3.03	1.00	2.66	1.00	2.83	3.79	1.00
StDev	0.77	1.04	0.78	0.00	1.32	0.00	1.23	1.08	0.00

Appendix xviii: Incentive score on elements of Supplier Relations

	A	B	C	D	E	F	G	H	I
	actual	actual	actual	actual	actual	actual	actual	actual	actual
Aligning quantitative and qualitative goals	4	3	3	4	2	4	2	1	3
Sharing information with internal customers	3	3	2	4	3	3	3	1	4
Asking internal customers to jointly organize a single point of coordination	4	2	4	4	5	5	3	3	4
Aligning relevant KPI's	3	3	2	2	4	2	2	1	4
Asking internal customers to involve purchasing in their decision making	3	2	2	4	2	3	3	2	4
Asking internal customers to make investments	3	2	2	4	3	2	2	2	4
Asking internal customers to align (HR) incentives	3	3	2	2	2	3	1	1	4
Govern relationship with internal customers SLA's	1	1	5	1	2	2	1	1	1
Differentiate in services for internal customers	4	5	5	5	1	4	1	1	1
Monitor purchasing performance monthly /yearly basis	5	3	5	5	4	5	3	1	1
Charge internal customers for the costs of the purchasing process	1	5	5	3	2	5	1	1	3
Frequently update the SLA with internal customers	1	4	5	1	3	2	1	1	1
	2.92	3.00	3.50	3.25	2.75	3.33	1.92	1.33	2.83
	1.31	1.21	1.45	1.42	1.14	1.23	0.90	0.65	1.40

Appendix xix: Actual score on elements of Internal Customer Relations

	A	B	C	D	E	F	G	H	I
	ideal	ideal	ideal	ideal	ideal	ideal	ideal	ideal	ideal
Aligning quantitative and qualitative goals	4	3	4	5	5	4	4	5	3
Sharing information with internal customers	3	2	4	5	4	3	4	5	4
Asking internal customers to jointly organize a single point of coordination	4	3	4	5	5	5	5	5	4
Aligning relevant KPI's	4	3	5	4	5	2	5	4	4
Asking internal customers to involve purchasing in their decision making	5	4	5	5	4	4	5	5	4
Asking internal customers to make investments	3	3	2	5	4	2	4	4	4
Asking internal customers to align (HR) incentives	3	4	5	4	5	3	5	5	4
Govern relationship with internal customers SLA's	1	1	5	4	3	2	3	4	1
Differentiate in services for internal customers	4	5	5	5	1	4	3	5	1
Monitor purchasing performance monthly /yearly basis	5	3	5	5	4	5	4	5	1
Charge internal customers for the costs of the purchasing process	1	5	5	4	1	5	4	1	3
Frequently update the SLA with internal customers	1	4	5	4	5	2	4	3	1
Average	3.17	3.33	4.50	4.58	3.83	3.42	4.17	4.25	2.83
StDev	1.47	1.15	0.90	0.51	1.47	1.24	0.72	1.22	1.40

Appendix xx: Ideal score on elements of Internal Customer Relations

	A	B	C	D	E	F	G	H	I
	a-i	a-i	a-i	a-i	a-i	a-i	a-i	a-i	a-i
Aligning quantitative and qualitative goals	0	0	-1	-1	-3	0	-2	-4	0
Sharing information with internal customers	0	1	-2	-1	-1	0	-1	-4	0
Asking internal customers to jointly organize a single point of coordination	0	-1	0	-1	0	0	-2	-2	0
Aligning relevant KPI's	-1	0	-3	-2	-1	0	-3	-3	0
Asking internal customers to involve purchasing in their decision making	-2	-2	-3	-1	-2	-1	-2	-3	0
Asking internal customers to make investments	0	-1	0	-1	-1	0	-2	-2	0
Asking internal customers to align (HR) incentives	0	-1	-3	-2	-3	0	-4	-4	0
Govern relationship with internal customers SLA's	0	0	0	-3	-1	0	-2	-3	0
Differentiate in services for internal customers	0	0	0	0	0	0	-2	-4	0
Monitor purchasing performance monthly /yearly basis	0	0	0	0	0	0	-1	-4	0
Charge internal customers for the costs of the purchasing process	0	0	0	-1	1	0	-3	0	0
Frequently update the SLA with internal customers	0	0	0	-3	-2	0	-3	-2	0
	-0.25	-0.33	-1.00	-1.33	-1.08	-0.08	-2.25	-2.92	0.00
	0.62	0.78	1.35	0.98	1.24	0.29	0.87	1.24	0.00

Appendix xxi: Actual - Ideal score on elements of Internal Customer Relations

	A	B	C	D	E	F	G	H	I
	incentives	incentives	incentives	incentives	incentives	incentives	incentives	incentives	incentives
Aligning quantitative and qualitative goals	4	3	3	2	2	1	1	2	1
Sharing information with internal customers	1	2	3	1	2	1	2	2	1
Asking internal customers to jointly organize a single point of coordination	3	3	4	1	4	1	3	3	1
Aligning relevant KPI's	4	3	3	2	2	1	2	2	1
Asking internal customers to involve purchasing in their decision making	4	4	3	1	3	1	4	4	1
Asking internal customers to make investments	3	4	2	1	2	1	3	3	1
Asking internal customers to align (HR) incentives	3	5	4	1	1	1	1	4	1
Govern relationship with internal customers SLA's	1	1	5	1	2	1	3	4	1
Differentiate in services for internal customers	4	5	5	1	3	1	3	4	1
Monitor purchasing performance monthly /yearly basis	4	3	5	5	2	1	5	4	1
Charge internal customers for the costs of the purchasing process	1	5	5	1	1	1	3	1	1
Frequently update the SLA with internal customers	1	3	5	1	n.a.	1	4	1	1
	2.75	3.42	3.92	1.50	2.18	1.00	2.83	2.83	1.00
	1.36	1.24	1.08	1.17	0.87	0.00	1.19	1.19	0.00

Appendix xxii: Incentive score on elements of Internal Customer Relations

Appendix F

Appendix xxiii (below): Instruction Sheet Neutral

My participant number: _____

Instructions for the participants

Welcome purchasing professionals!

You will now participate in an experiment on economic decision-making. In this experiment, you will be randomly matched into groups of two. You will never learn the identity of the other person matched to you. At the end of the experiment, you will be paid out in cash in anonymity for the outcome of the interaction between you and the person matched to you. Your earnings depend on the decisions made in the experiment.

Let us now explain the experiment. The two people matched to a group will receive together one assignment, the Decision-maker and the Recipient. In this experiment, only the Decision-maker will make a decision. This decision will affect the outcomes (measured in money) of both participants! The Decision-maker will select one from among 10 possible actions. Each action represents payoffs of the two participants.

On the last page of the instructions, you find a table that summarizes the earning consequences of each action for both participants in one group.

At the top of the earnings table, you will find information about the earnings of a Decision-maker and of the Recipient. You will all make a decision as a person assigned the role of Decision-maker. After that, please fold your decision sheet, and we will collect them.

We will then in front of you, at random, assign one half of the participants to fulfil the role of the Decision maker and the other half the role of the Recipient. This implies that each of you has 50% chance to be indeed the Decision-maker that will affect the payoff of one Recipient. At the end, the decision of each participant assigned at random the role of the Decision-maker will determine the payoff of one participant assigned the role of Recipient.

Please note that ONLY the decision of the Decision-maker will determine the earnings of the pair of the two people matched together into a group.

Finally, we will ask you to answer a few questions on a questionnaire. Then, the experiment is finished. You will be able to collect your earnings in a sealed envelope, in complete anonymity from the experimenter. We will make sure that you will be the only person aware of your payments in the experiment.

In order to collect your earnings, you will need your participant number, that you received when entering this room. Please keep it with you until the payment.

Thank you for your attention.

Research team,

University Groningen

Radboud University Nijmegen

Decision sheet Neutral

P-number:

My role is: Decision-maker
My earnings are in the grey column; the earnings of the other person are in the white column.

Action chosen	Earnings to the Decision-maker	Earnings to the Recipient
A1	3 EURO	30 EURO
A2	6 EURO	27 EURO
B1	9 EURO	24 EURO
B2	12 EURO	21 EURO
C1	15 EURO	18 EURO
C2	18 EURO	15 EURO
D1	21 EURO	12 EURO
D1	24 EURO	9 EURO
E1	27 EURO	6 EURO
E2	30 EURO	3 EURO

I choose the following action (level of quality). *Circle one.*	A1- A2 - B1 - B2 - C1- C2 - D1 - D2 - E1 - E2	

Appendix xxiv: Decision Sheet Neutral.

Appendix xxv (below): Instruction Sheet Framed.

My participant number: _____

Instructions for the participants

Welcome purchasing professionals!

You will now participate in an experiment on economic decision-making. In this experiment, you will be randomly matched into groups of two. You will never learn the identity of the other person matched to you. At the end of the experiment, you will be paid out in cash in anonymity for the outcome of the interaction between you and the person matched to you. Your earnings depend on the decisions made in the experiment.

Let us now explain the experiment. The two people matched to a group will form a production unit. One of them, the Decision-maker (Purchaser) represents a purchasing department and the other, the Recipient (internal customer) represents an internal customer for this purchaser. In this experiment, only the Decision-maker (Purchaser) will make a decision. This decision will affect the earnings of both participants! The Decision-maker (Purchaser) will choose the costs and quality of the inputs for the Recipient (Internal customer). To make this decision, the Decision-maker will select one from among 10 possible actions. Each action represents a combination of cost and quality which affect the payoffs of the two participants. The lower the cost – the lower the payoff for the Decision-maker, and the lower the quality for the Recipient, and vice versa, the higher the cost for the Decision-maker, the higher the quality for the Recipient.

The decision-maker (Purchaser) is buying a product (not a service) that has impact on the profit of the organization. There are not many suppliers able to supply this product and the buying volume is relevant in the eyes of the supplier as well.

On the last page of the instructions, you find a table that summarizes the earning consequences of each action for both participants in one production unit. They capture in a simplified way the trade-off between low price and high quality. The highest quality delivers the highest benefit to the Recipient (Internal customer), and at the same time the highest costs – and associated lowest earnings – for the Decision-maker (Purchaser).

At the top of the earnings table, you will find information about the earnings of a Decision-maker and of the Recipient. You will all make a decision as a Purchaser. After that, please fold your decision sheet, and we will collect them.

We will then in front of you, at random, assign one half of the participants to fulfil the role of the Decision (Purchaser) maker and the other half the role of the Recipient (internal customer). This implies that each of you has 50% chance to be indeed the Decision-maker that will affect the payoff of one Recipient. At the end, the decision of each participant assigned at random the role of the Decision-maker will determine the payoff of one participant assigned the role of Recipient.

Please note that ONLY the decision of the Decision-maker (Purchaser) will determine the earnings of the pair of the two people matched together into a group.

Finally, we will ask you to answer a few questions on a questionnaire. Then, the experiment is finished. You will be able to collect your earnings in a sealed envelope, in complete anonymity from the experimenter. We will make sure that you will be the only person aware of your payments in the experiment.

In order to collect your earnings, you will need your participant number, that you received when entering this room. Please keep it with you until the payment.

Thank you for your attention.

Research team,

University Groningen

Radboud University Nijmegen

Decision Sheet Framed

My role is: PURCHASER (Decision-maker)
My earnings are in the grey column; the earnings of the other person are in the white column.

P-number

	Level of quality = action chosen	Earnings to the Purchaser = Decision-maker	Earnings to the customer = R
Lowest cost for the Purchaser ↑ Highest cost for the Purchaser	A1	3 EURO	30 EUR
	A2	6 EURO	27 EUR
	B1	9 EURO	24 EUR
	B2	12 EURO	21 EUR
	C1	15 EURO	18 EUR
	C2	18 EURO	15 EUR
	D1	21 EURO	12 EUR
	D1	24 EURO	9 EUR
	E1	27 EURO	6 EUR
Highest quality of input for the internal customer ↓ Lowest quality of input for the internal customer	E2	30 EURO	3 EUR
I choose the following action (level of quality). *Circle one.* A1- A2 - B1 - B2 - C1- C2 - D1 - D2 - E1 - E2			

Appendix xxvi: Decision Sheet Framed.

Appendix G

Additional Questions Economic Experiment

Nr.	Question	Answer
1.	Gender m/f	□ Male □ Female
2.	Education (highest)	□ MBO □ HBO □ WO
3.	Purchasing related Education	□ NEVI 1 □ NEVI 2 □ NEVI 3 □ Other, ...
4.	Experience as BUYER	□ 0 – 2 jaar □ 2 – 4 jaar □ 4 – 6 jaar □ 6 – 8 jaar □ 8 – 10 jaar □ > 10 jaar
5.	Dominant sector-experience	□ Public sector □ Private sector ....
6.	Extra research cooperation	□ No □ Yes: Phone: ..... E-mail: .....

Consider please the following description of a relationship between a Purchaser and an Internal Consumer:

- The decision-maker (Purchaser) is buying a product (not a service) that has impact on the profit of the organization. There are not many supplier able to supply this product and the buying volume is relevant also in the eyes of the supplier. In this situation, the Purchaser has to choose what price and quality to aim for, and there is a tradeoff between them: the highest quality (for the Internal customer) implies the highest costs (for the Purchaser).

Please answer the following questions, related in this context to the relationship between a Purchaser and Internal Customer.

	Question	Fullly disagree	disagree	Neutral	agree	Fully agree
7.	I am familiar with the portfolio theory with regards to goods/services with high profit impact and high supply risk (few suppliers/ high switching costs)					
8.	I understand the essence of the theory for Price and Quality					
9.	I use this theory whenever possible in real life					
10.	Would this mean priority for low price and high quality?					
11.	Does this theory, has a name?					
12.	What is the essence of that theory?					

Appendix xxvii: Questionnaire Additional Experiment.

Appendix H

Pearson correlation coefficients for professional variables (N=55)

	Experience	FamiliarPortfolio	UnderstandingPQ	UseinLife	TruePQ
Experience	1	.176 (0.200)	.033 (0.810)	.010 (0.940)	.016 (0.909)
FamiliarPortfolio		1	.745 (0.000)	.615 (0.000)	-.084 (0.543)
UnderstandingPQ			1	0.73 (0.00)	-.230 (0.092)
UseinLife				1	-.344 (0.010)

P-values two-sided test between brackets.

Appendix xxviiii: Pearson correlation coefficients for professional variables (N=55).

About the author

Max Boodie (1964) is a specialist on strategic purchasing and supply management issues, former business consultant, entrepreneur and angel-investor in several internet technology start-ups. He is also author of several (management) books about purchasing. Recently about temporarily labour and staffing issues.

From 1990 until 2004 he worked for Berenschot, a well-known Dutch consultancy firm, where he started as a junior consultant on performance management and logistic issues. In 1997 Max started a business unit that was responsible for the purchasing and supply management proposition of Berenschot.

In 2005 Max Boodie became entrepreneur when he started DPA Supply Chain People a joint venture with DPA Group NV, a staffing company specialized in the staffing of in those days only financial professionals. Within a few years DPA Supply Chain became a successful division of DPA Group NV, Max sold his shares and became member of the Executive Board. After the merger with staffing company NIG in 2011, Max left DPA Group N.V.

From 2011, Max is active as an internet start-up entrepreneur (co-founder of Banenruil.nl and PlaytoWork) and also as an investor (StatsQuo.com and Ramblercity.nl). He combined this with working part time on his PhD.

Max is married to Ursula Boodie-Spoorenberg and they have two children; Ella (2005) and Oscar (2008) and live in Amsterdam. In his spare time Max is an enthusiastic amateur car racer in classic and modern cars.

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Max Boodie

Purchasing knowing-doing gaps and the influence of incentives from a buyer-internal customer relationship perspective

Purchasing knowing–doing gaps are the differences between what professional buyers know about purchasing (what they should ideally do) and what they actually do. Purchasing knowing-doing gaps are a potential risk for underutilization of purchasing from the widely accepted belief that purchasing contributes positively to firm performance. In this research we found that financial incentives have a significant relation with the existence of purchasing knowing-doing gaps, although they are neither a sufficient nor a necessary precondition. Financial incentives can be influenced by non-financial incentives in a way that incentivised behaviour can have a crowding-out effect. From social science based research we know that professional norms are in fact a type of non-financial incentives and that they might interact with financial incentives in place. In this research on purchasing knowing-doing gaps we found that professional purchasing norms are a countervailing force offsetting the impact of financial incentives for buyers. Both general managers and managers of purchasing departments should investigate the professional norms of their buyers in order to better understand the impact of those norms on the financial incentivized behaviour. The academic contribution is made by combining insights and literature from several scientific disciplines and by use of laboratory experiments in a purchasing context. The use of experiments is not new to science as such but is not frequently used in the field of purchasing and supply management.

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