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TESIS DOCTORAL /
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PROGRAMAS DE FINANCIACIÓN DE LA CADENA DE SUMINISTRO OFRECIDOS POR LOS PRINCIPALES MINORISTAS: UN MARCO ESTRATÉGICO DEL PROCESO DE EVALUACIÓN DE PROVEEDORES PARA LA ADOPCIÓN POTENCIAL

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SUPPLY CHAIN FINANCE PROGRAMS OFFERED BY MAJOR RETAILERS: A STRATEGIC FRAMEWORK OF SUPPLIER ASSESSMENT PROCESS FOR POTENTIAL ADOPTION

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Supply Chain Finance Programs Offered by Major Retailers: A Strategic Framework of Supplier Assessment Process for Potential Adoption

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ABSTRACT

One of the most critical challenges for many suppliers, especially relatively smaller ones, in today's volatile macroeconomic environment is access to bank financing which is required for their ongoing operations within supply chains. Given this challenge, despite the fact that Reverse Factoring is a beneficial Supply Chain Finance funding mechanism offered by large buyers usually to relatively smaller suppliers of lower credit rating, it is estimated that it represents less than 10% of today's total factoring market. Why is this phenomenon occurring? Considering that supply chains are a very important part of today's business world and Supply Chain Finance is a large industry, with $1.8 tr. in estimated financeable payables globally, this could be considered as an academically significant and business-relevant research question.

Therefore, the focus of this empirical study is positioned within the intersectional research area of Buyer-Supplier Relationship Quality and Supply Chain Finance, with an attempt to draw from the theoretical grounds and utilize the associated perspectives of Agency Theory, Transaction Cost Economics, and Social Capital Theory. More specifically, by conducting a survey in a group of suppliers that has been exposed to, informed in detail, and invited to adopt a Reverse Factoring program offered by a globally leading retail group, this empirical research investigates and provides insights in the following three perspectives.

Firstly, it examines the main common non-finance and finance related antecedents of perceived Buyer-Supplier Relationship satisfaction and trust. Secondly, it explores the link of those two major Buyer-Supplier Relationship quality elements to the supplier's ex-ante assessment regarding the attractiveness of a Reverse Factoring program, before adopting it, as well as his ex-post assessment concerning the perceived risk of potential opportunistic behavior by the buyer, following a potential adoption. Thirdly, it investigates the impact of supplier cash ratio to the perceived Reverse Factoring program attractiveness as well as the effect of supplier financial distress signaling fear to the perceived risk of potential buyer opportunism.

The results provide support to the proposed strategic framework of Reverse Factoring program supplier assessment, useful business and academic insights regarding the importance of Buyer-Supplier Relationship quality and other important drivers of potential adoption, and a probable, not exclusive, explanation regarding the relatively low market share of the reverse factoring sector, within the wider factoring industry.

RESUMEN

Uno de los desafíos más críticos para muchos proveedores, especialmente para los relativamente más pequeños, en el volátil entorno macroeconómico de hoy, es el acceso a la financiación bancaria necesaria para sus operaciones continuadas dentro de las cadenas de suministro. Dado este desafío, a pesar del hecho de que el Factoraje Inverso es un beneficioso mecanismo de financiación de las Cadenas de Suministro ofrecido por grandes compradores normalmente a proveedores relativamente más pequeños de calificación crediticia más baja, se estima que representa menos del 10% del total del mercado del factoraje actual. Por qué está ocurriendo este fenómeno? Teniendo en cuenta que las cadenas de suministro son una parte muy importante del mundo empresarial de la actualidad y que la Financiación de las Cadenas de Suministro es una gran industria, con 1,8 trillones de dólares en cuentas por pagar financiables estimadas a nivel global, esto podría considerarse como una cuestión académicamente significativa y de investigación relevante para los negocios.

Por tanto, el foco de este estudio empírico se posiciona en el interior del área de investigación interseccional de la Calidad de las Relaciones Comprador-Proveedor (RCP) y la Financiación de las Cadenas de Suministro (FCS), realizando una tentativa de beneficiarse de las bases teóricas y hacer uno de las perspectivas asociadas de la Teoría de la Agencia, la Economía de los Costes de Transacción y la Teoría del Capital Social. Más específicamente, llevando a cabo una encuesta en un grupo de proveedores que ha sido informado en detalle, invitado a adoptar y expuesto a un programa de Factoraje Inverso ofrecido por un grupo minorista que es líder mundial, esta investigación empírica ahonda y proporciona conocimientos en las siguientes tres perspectivas.

En primer lugar, examina los principales antecedentes comunes relacionados y no con las finanzas de la percepción existente de la satisfacción y la confianza en la Relación Comprador-Proveedor. En segundo lugar, explora el vínculo de esos dos grandes elementos de calidad de la Relación Comprador-Proveedor con la evaluación ex – ante del proveedor en relación con el atractivo de un programa de Factoraje Inverso, antes de adoptar el mismo, así como su evaluación ex – post relativa al riesgo percibido de comportamiento potencialmente oportunista por parte del comprador, con posterioridad a una potencial adopción. En tercer lugar, investiga el impacto del cash ratio del proveedor en la percepción del atractivo del programa de Factoraje Inverso, así como del efecto de los problemas financieros como señal de temor al riesgo percibido de potencial oportunismo del comprador.

Los resultados proporcionan apoyo al marco estratégico propuesto de evaluación del programa de suministro de Factoraje Inverso, conocimientos empresariales y académicos útiles en relación con la importancia de la calidad de la Relación Comprador-Proveedor, y otros motores importantes de la potencial adopción, así como una explicación probable y no exclusiva acerca de la relativamente baja cuota de mercado del sector del factoraje inverso, dentro de la más amplia industria del factoraje.

ACKNOWLEDGMENTS

"If you can't fly then run, if you can't run then walk, if you can't walk then crawl, but whatever you do, you have to keep moving forward." This is a famous quote by Martin Luther King Jr. which was coming to my mind most often during this long, very demanding but tremendously rewarding journey towards my DBA/ PhD completion. A journey which would not have been completed successfully without the guidance, support, inspiration and encouragement provided by the following people, to whom I would like to express my gratitude.

Firstly, I would like to thank my mother, Katerina Morou, and my "partner in life", Christina Tzani, for their endless support and care on all levels during all these years. Secondly, I would also like to thank my DBA/PhD Advisor, Professor Daniel Corsten, not only for his continuous guidance, but also for his strong encouragement, especially during times where I was facing various professional and personal difficulties. Thirdly, I would like to thank Professor Nicole DeHoratius for her guidance and friendship for which I am very proud of, as well as Professor Ananth Raman for believing in me and providing much needed inspiration through his work, academic achievements, and suggestions. Last, but not least, I would like to thank my DBA Committee members for their valuable suggestions and comments as well as the DBA Department of IE Business School for its excellent support all those years.

I dedicate this thesis to my father, Theodore Moros, who unfortunately has passed away many years ago but I am certain that he would have been very happy and proud of his son's academic achievement.

Konstantinos (Constantine) Moros
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ACRONYMS / NOTATIONS

AIC: Akaike Information Criterion
AT: Agency Theory
B2B: Business-to-Business
BPO: Bank Payment Obligation
BS: Buyer-Supplier
BSR/s: Buyer-Supplier Relationship/s
CAGR: Compound Annual Growth Rate [*(Ending value / Beginning value)* $^{(1/\text{number of years})}$ *-1*]
CAIC: Consistent Akaike Information Criterion Test
CAPM: Capital Asset Pricing Model [*Asset price = Risk-free rate of return + Risk Premium * (Market rate of return – Risk free): Ra = Rf + Beta * (Rm - Rf)*]
Cash Ratio: *Cash / Short-Term Debt*
CFA: Confirmatory Factor Analysis
CFI: Comparative Fit Index
Current Ratio: *Current Assets / Current Liabilities*
DPO: Days Payable Outstanding [*Accounts payable / (Cost of annual sales / 365 Days*]
DSO: Days Sales Outstanding [*Accounts receivable / (Annual sales / 365 Days)*]
EBT: Earnings Before Taxes
ECVI: Expected Cross Validation Index
EDI: Electronic Data Interchange
EM: Expectation-Maximization Method
ERP: Enterprise Resource Planning
FIML: Full-Information Maximum Likelihood Method
FTE: Full Time Equivalent
GFI: Goodness of Fit Index
JIT: Just-in-time
KMO: Kaiser-Meyer-Okin Measure of Sampling Adequacy
KYC: Know Your Customer
MCAR: Missing Completely At Random
MI: Multiple Imputation Method
MIAG: Metro Group's standard supply chain finance provider
MSC: MIAG Service Contract (*including Factoring Services*)
MVD: MIAG Vendor Discounting Services (*including Reverse Factoring Services*)
NCP: Non-centrality Parameter Test
NFI: Normed Fit Index
NWC: Net Working Capital (*Current Assets – Current Liabilities*)
PCLOSE: P of Close Fit Test
PO: Purchase Order
Quick Ratio: *(Current assets – Inventory) / Current Liabilities*
RF: Reverse Factoring
RMSEA: Root Mean Square Error of Approximation
RPA: Receivable Purchase Agreement
SC: Supply Chain
SCF: Supply Chain Finance
SCM: Supply Chain Management
SCT: Social Capital Theory
SEM: Structural Equation Modeling
SME/s: Small-to-Medium sized Enterprise/s
TCE: Transaction Cost Economics

1.1 Introduction: Research Focus and Context

The focus of this empirical study is positioned within the intersectional research area of Buyer-Supplier Relationships (BSRs) and Supply Chain Finance (SCF), broadly defined as the sector focusing on the management, planning and controlling of all transaction activities, processes and mechanisms related to the flow of cash among supply chain stakeholders in order to improve working capital (More & Basu, 2013). Moreover, by considering the focus, this research attempts to draw from the theoretical grounds and utilize the associated perspectives of Agency Theory (AT) regarding the major elements of principal-agent behavior vs. outcome oriented BSRs (Jensen & Meckling, 1976; Jensen, 1983; Eisenhardt, 1989), Transaction Cost Economics (TCE) in terms of mutual gains as well as risk of opportunism in BSRs (Coase, 1937; Williamson, 1975; 2008), and Social Capital Theory's (SCT) three dimensions (Nahapiet & Ghoshal, 1998) in relation to trust (relational capital), shared goals (cognitive capital), as well as information exchange (structural capital).

More specifically, by conducting a survey in a group of suppliers (based on a designed and distributed scientific questionnaire from which replies were collected) who have been exposed to, informed in detail, and invited to adopt a SCF program (Reverse Factoring, in specific), offered by one of the largest multinational retail groups, I investigate the following three aspects. Firstly, within the context of a SCF program offered by a large buyer to his suppliers, this research examines the main, common, non-finance and finance related antecedents of perceived supplier satisfaction and trust, and consequently the impact on BSR quality, as captured by those two highly important BSR constructs

(Benton & Maloni, 2005; Kwon & Suh, 2004). Secondly, it proposes a strategic framework of supplier assessment process and explores the link of these two major BSR constructs to the suppliers' ex-ante (1st stage) and ex-post (2nd stage) assessment regarding the attractiveness of a SCF program as well as the respective risk of opportunistic behavior by the buyer, following a potential SCF program adoption. Thirdly, it investigates the impact of supplier cash ratio to the perceived SCF program attractiveness as well as the effect of supplier financial distress signaling fear to the perceived risk of potential buyer opportunism. These two additional finance related drivers, along with the examined ones of BSR satisfaction and trust, provide certain useful academic and business insights regarding the suppliers' assessment process concerning SFC programs as well as the nature of the concepts of attractiveness and ex-post buyer opportunism, which are considered relatively new as subject focus in BSR academic research (Jap & Anderson, 2003; Hawkins et al., 2008; Hald et al., 2009), especially within the context of SCF programs' exposure towards suppliers.

1.2 Introduction: The Business and Academic Importance of Buyer – Supplier Relationships

Over the past three decades, the importance of BSRs within supply chains, broadly defined as the interconnections of economic collaborations, or partnerships, of many commercial transactions, based upon the mutual trust of the two parties that participate in this economic exchange (Gullett et al., 2009), has been amplified since approximately 85% of all corporations are implementing a certain degree of outsourcing by purchasing at least one function (or a

necessary good or service for delivering their end products/services) while the sum of the outsourced operations is producing more than $300 bl. in outsourcing contracts per year (Logan, 2000). The main reason is that BSRs were gradually acknowledged as one of the main sources of competitive advantage within business environments, which are continuously becoming more competitive, complicated and fast paced (Landeros & Monczka, 1989; Dyer & Singh, 1998; Li et al., 2006), as they allow companies to focus on their core competencies, better utilize their resources, and improve the value added attributable to them, from a strategic management perspective (Prahalad & Hamel, 1990). By implementing such a strategic decision, companies can become more flexible and responsive to changing client needs as well as utilize the capabilities, expertise, technologies, and efficiencies of their suppliers (Kaufman et al., 2000; Nagurney, 2010). At the same time though, as the level of reliance on suppliers is increasing, they need to allocate more resources for effectively and efficiently manage their supply chains (Cox et al., 2001; Cao & Zhang, 2011).

In parallel to this development in the global business environment, there has been, as a logical consequence, an increased research interest regarding BSRs with scholars, frequently from different academic fields, studying various aspects of their nature and taxonomy (Bensaou & Venkatraman, 1995; Cannon & Perreault, 1999; Tangpong et al., 2008; 2015; Revilla et al., 2013), antecedents (Heide & Miner, 1992; Baiman & Rajan, 2002; Sanders, 2008; Hawkins et al., 2008), as well as effects and consequences (Carr & Pearson, 1999; Johnston et al., 2004; Benton & Maloni, 2005; Crook & Combs, 2007; Zhao et al., 2008). More specifically, as indicated by a literature review conducted by Terpend et al. (2008)

which was focused on four prominent U.S. based academic journals during the period 1986-2005 (*Journal of Supply Chain Management, Journal of Operations Management, Academy of Management Journal, Strategic Management Journal*), the number of BSR related published papers increased significantly, with the dominant research focus shifting four times within this period. In addition, the researchers' interest in buyer–supplier mutual efforts increased since 1996 (compared to the previous decade), but the number of studies investigating buyer practices, that undoubtedly are impacting BSRs, declined. The end-result though is enriched academic knowledge and valuable findings, which could be categorized in four major areas. Firstly, the effects of buyer practices (e.g. JIT implementation, power / dependence, supplier evaluation and contractual clauses), and buyer-supplier mutual efforts (communication and information sharing) on operational performance-based value such as quality, cost, delivery and inventory. Secondly, the effects and benefits of improved types of cooperation / collaboration / partnership on integration-based value, by also considering alternative types of buyer-supplier mutual efforts. Thirdly, the factors believed to affect capability-based value in the form of continuous improvement, technology acquisition, and improved new product development, by also considering supplier evaluation, development, certification and training, as well as buyers' physical interaction (e.g. visits to suppliers). Fourthly, the impact of BSRs practices and mutual efforts on buyers' financial performance, as affected by various types of integration (e.g. general management, product development, planning, and information systems integration) and measured by financial indicators such as sales, return on equity and net present value of the buying

firms. Moreover, based on this review's findings, it is indicated that research which considers BSRs and their efforts to derive value have become much more complex over the past two decades. Therefore, in terms of suggested future research, academics were encouraged to work on seven specific directions: **(1)** conduct more focused studies of the relationships between buyers and their strategic suppliers (e.g. supplier development, certification, training, incentives, face-to-face interactions); **(2)** apply longitudinal research; **(3)** adopt multiple theories to explain how buyer practices and buyer–supplier mutual efforts influence the derivation of value by BSRs; **(4)** consider more context in terms of situations and variables that could moderate BSRs which are beginning to become well established; **(5)** examine the effects of many buyer, supplier, and market characteristics, as well as product characteristics; **(6)** put more emphasis on investigating the conditions under which various integrative approaches are justified and are most effective; and **(7)** study the concept of sustained competitive advantage, based on value extraction from BSRs. Considering the seven suggested directions above, this research is mainly focusing on the third and fourth direction.

Considering the BSR related research conducted from the perspective of supply chain management (SCM), a business function based on which the majority of BSRs are being formed, developed and evolve, in a literature review of 100 SCM related papers published over the period 1985-2004, conducted by Burgess et al. (2006), it is noted that the majority of SCM research has been focusing on the operations management discipline by conceptually framing SCM mostly as a process, empirically examined mainly within the manufacturing and

consumer goods industries, and based on TCE and strategy-based competitive advantage theoretical grounds. As such, SCM published research focusing on BSRs per se appears to be relatively limited despite the fact that, as the authors indicate, it is a field which is suitable for covering emerging BSR related issues such as power and trust, and will become increasingly multidisciplinary in its nature, breaking from the dominance of single disciplines such as operations management, logistics and purchasing. In addition, despite the impressive evolution of the wider operations management field (within which SCM and BSRs traditionally belong) that resulted in extensive academic and practitioner knowledge, as Chopra et al. (2004) note, more research efforts should be placed on the interfaces between operations management and real supply chains, marketing concepts, finance (in terms of financial models, instruments, programs, etc.), and organizational behavior, as well as service operations, operations strategy, and process design / improvements. This suggestion is taken into consideration as this research's emphasis is placed on the intersection of SCM and finance.

Furthermore, from the perspective of operations management research, in a study conducted by Kouvelis et al. (2006) where SCM related papers published in *Production and Operations Management* journal over the period 1992-2006 were reviewed, it is noted that SCM has relatively recently become the dominant theme. However, the prevailing research themes were related to: **(1)** SC design; **(2)** uncertainty and the bullwhip effect; **(3)** contracts and SC coordination; **(4)** capacity and sourcing decisions; **(5)** applications and practice; and **(6)** teaching SCM. In addition, BSRs have been examined mainly as one of the elements of

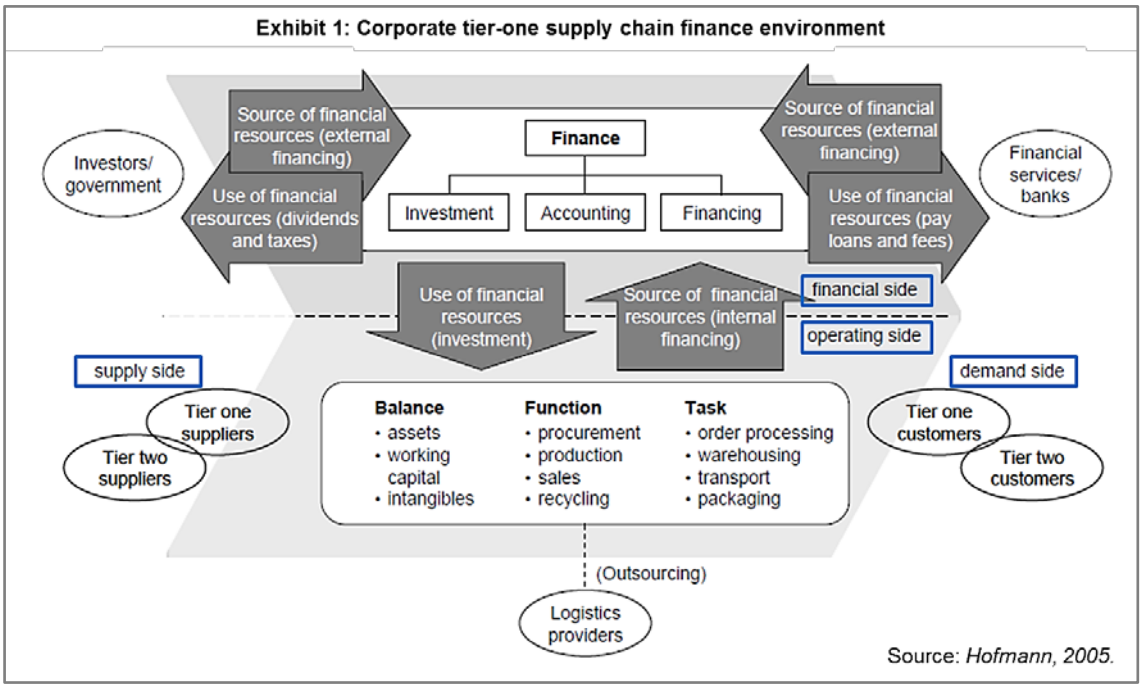
SC functions (such as sourcing, inventory management, channel coordination, and product development) and less as the focal unit of analysis. In my research however, BSR is the focal unit of analysis which is examined within the relatively new context of a tier-one SCF environment and more specifically the suppliers' assessment and potential adoption of a SCF (reverse factoring) program, offered by a large buyer, and the respective use of the RF instrument that belongs within the wider family of SCF instruments.

1.3 Introduction: SCF & Reverse Factoring - Environment, Definition & Important Elements

As the integration of materials, services, goods and information flows within and across supply chains is continuously tested and improved in practice over the last 30 years, the respective supply chains' flow of financial resources started gaining more attention since 2000 (Pfohl et al., 2003) where the need for addressing supply chain challenges related to, and/or affected by, macro-microeconomic and financial conditions, such as cash flow issues, became equally important to traditional problems associated with supply chain operations and/or logistics (Hofmann, 2005). For example, a major emerging challenge for many suppliers (especially small-to-medium sized enterprises), as actors within supply chains, in today's highly volatile environment is access to bank financing (De la Torre et al., 2010) which, among other implications, is critical for working capital improvement and growth (Beck & Kunt, 2006). This challenge is further intensified due to the ongoing funding needs of banks globally (that result to reduced ability to finance companies and a higher level of risk-averse bank

behavior), following the sovereign debt crisis that was initiated back in 2008 and has affected banks financing decisions since then. To provide an indication, it is reported that 48% of declined bank finance applications from UK companies, for an amount over £25.000 during 2012-2013, was rejected on "*affordability*" grounds (Camerinelli & Schizas, 2014). Such challenges brought along a new understanding and role of the supply chain actors and their relationships, along with new inter-functional and inter-organizational tasks generated at the intersection of finance and operations within a supply chain. So, if I define a single company as my unit of analysis, its typical, tier-one, SCF environment, that includes major actors and the respective operational as well as financial activities, could be conceptually depicted as presented in **Exhibit 1** (Hofmann, 2005).

Exhibit 1: Corporate tier-one supply chain finance environment



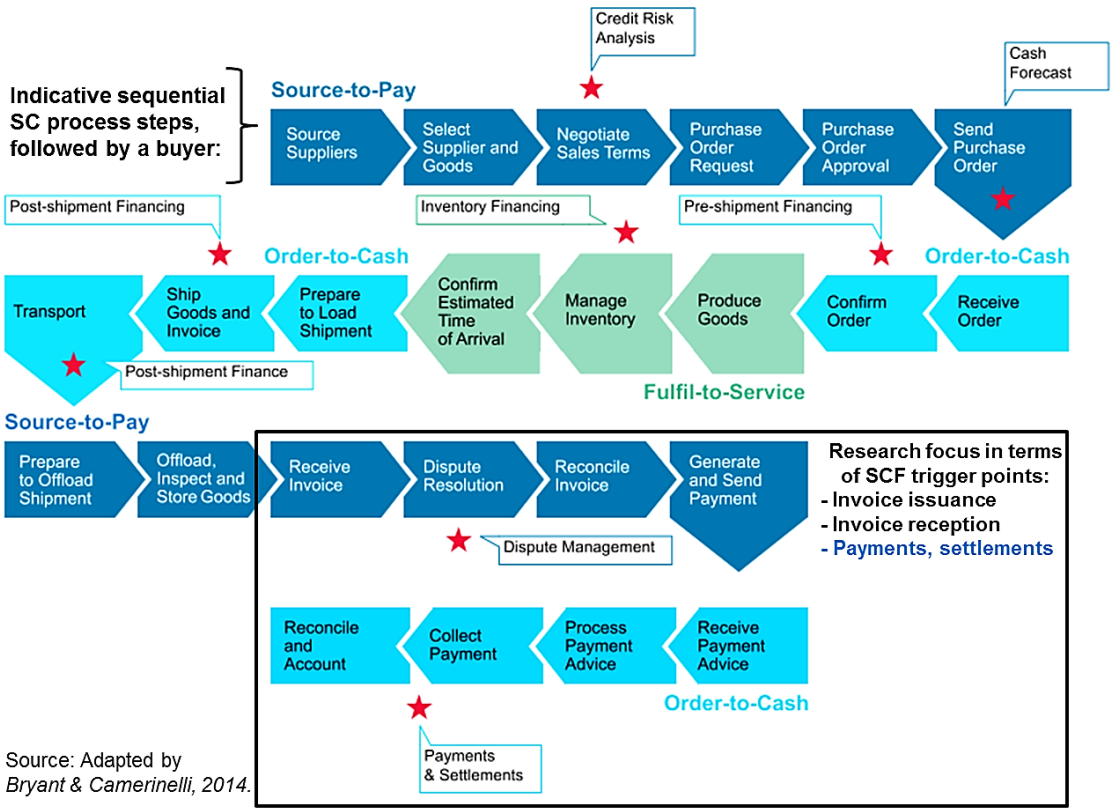
As the financial and operating activities of a company are closely connected and interdependent, collaborating in financial or operational matters only could be characterized as a sub-optimized activity since it does not utilize the benefits that can be gained from an encompassing collaboration approach within the

complex environment of a company's supply chain. Of course, in an effort to reduce some of the complexity of this environment, a company will choose to integrate and manage different supply chain links for different business processes, meaning it will collaborate on all areas with some supply chain members, while only collaborating financially, operatively, or not at all with others (Timme & Williams-Timme, 2000). Subsequently, SFC is more than just collaborations between the finance departments of two or more companies, as it is characterized by the focus on financial aspects or the usage of specific financial instruments, which may apply to many departments of a company.

Based on the above, SCF can be more accurately defined as "*the use of financial instruments, practices and technologies to optimize the management of the working capital and liquidity tied up in supply chain processes for collaborating business partners"* (Bryant & Camerinelli, 2014). The instrumental framework of SCF is based on three constitutive elements: **(1)** macro and micro institutional actors, such as governmental bodies, investors, financial institutions, service providers, and corporate departments (e.g. procurement, production, distribution, logistics, accounting, finance); **(2)** supply chain management collaboration characteristics (e.g. contractual agreements, strategic decisions, day-to-day responsibilities and reporting); and **(3)** financial functions, such as tracking, using and sourcing financial flows and resources (Hofmann, 2005). Moreover, another characteristic of SCF is that the collaborating business partners preserve their legal and economic independence, but are committed to share to certain extent the relational resources, capabilities, information, and risk on a medium to long-term contractual basis.

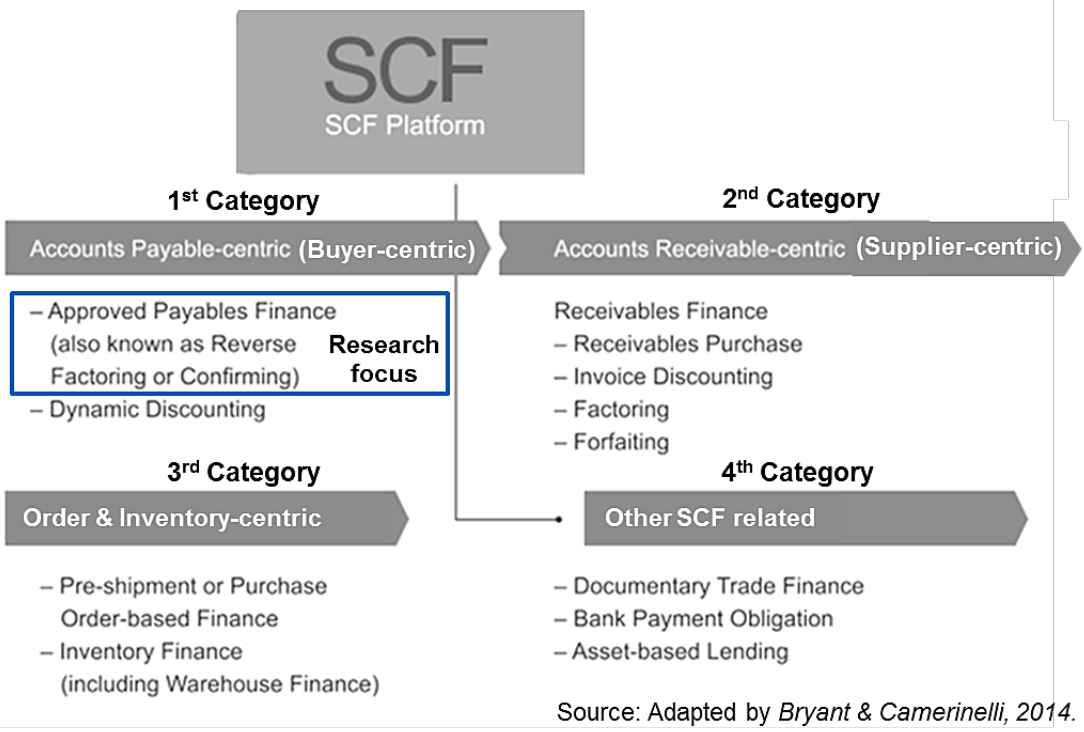
As indicated by **Exhibit 2** (Bryant & Camerinelli, 2014), SCF is largely "*event-driven*" since each intervention (finance, risk mitigation or payment) in the financial side of the supply chain is driven by a respective event in the physical, operational side of the supply chain, which, due to the development of advanced technologies to track and control events, creates opportunities to automate the initiation of SCF interventions. My research focus in terms of SCF trigger points, along a typical sequential supply chain process flow followed by a buyer and its suppliers, is within the final steps of the "*source-to-pay*" and "*order-to-cash*" procedures. More specifically, within those activities that relate to invoice issuance by the suppliers, the respective invoice collection by the buyer, but most importantly the payment processing and collection processes, along with the challenges and advantages offered to buyers and suppliers, in case of a specific SCF instrument implementation (such as RF), that is offered by a large buyer, in a form of a SCF program to be assessed and adopted by its suppliers.

Exhibit 2: Indicative SCF trigger points along the physical supply chain processes flow



Within the definition of SCF provided, there are four major SCF instrument categories where eleven main SCF instruments are included. As **Exhibit 3** (Bryant & Camerinelli, 2014) summarizes, these categories are defined as follows: **(1)** SCF accounts payable or buyer-centric instruments as they are typically initiated by the buyers; **(2)** SCF accounts receivable or supplier-centric tools as they are typically initiated by the suppliers; **(3)** SCF order and inventory-centric tools as they based on the order characteristics or inventory specifics; and **(4)** other SCF related instruments.

Exhibit 3: SCF instruments' platform / Main categories



Source: Adapted by *Bryant & Camerinelli, 2014.*

The first category includes the instruments of: **(1)** reverse factoring (also named as approved payables finance, supplier finance, confirming, and sometimes, confusingly, just SCF) which is based on the discounted payment of accounts payable in favor of suppliers by accessing a financial institution's or a buyer's own liquidity (e.g. through a buyer's subsidiary company); and **(2)** dynamic discounting, through which a buyer himself provides variable discounts (usually based on a combination of discount value and payment date) for early payment of supplier invoices.

The second category involves the instruments of receivables finance, such as: **(3)** receivables purchase in which a bank enters into a financial agreement to purchase or discount receivables from a supplier, typically without recourse to the latter (meaning that if a supplier's client defaults, the bank can seize the defined collateral, e.g. property, but cannot seek out the supplier for any further

compensation in relation to his client's purchased account receivable, even if the collateral does not cover the full value of the client's defaulted amount); **(4)** invoice discounting which is often applied to a financing facility whereby a supplier offers receivables evidenced by an invoice for discounting by a bank or factor; **(5)** factoring which varies in scope but in its commonest form involves the factoring of all or at least a significant part of a supplier 's portfolio of open account trading receivables representing typically corporate risk (as evidenced by invoices with payment dates not exceeding 180 days and on average much less); and **(6)** forfeiting which is invariably an internationally orientated activity, whereby a financing party purchases promissory notes, drafts, bills of exchange or other paper claims on a buyer and offered by a supplier to a financier for discounting on a non-recourse basis.

The third category includes order and inventory-centric instruments such as: **(7)** pre-shipment finance which is made available to a supplier based on a Purchase Order (PO) received from a buyer and covers the working-capital needs of the supplier (including raw materials, wages, packing costs, and other pre-shipment expenses) in order to allow it to fulfill delivery against the relevant PO; and **(8)** inventory (or warehouse) finance which is a form of SCF in which goods (either pre-sold, un-sold, or hedged) are financed and over which the bank usually takes security interest where the financing terms are based on the intrinsic value and "saleability" of the inventory as well as the use to which inventory is put, in terms of a manufacturing or sales process.

The fourth and final category involves other SCF related instruments such as: **(9)** documentary trade finance which is a written undertaking given by the

issuing bank at the request of the buyer (applicant) to honor a presentation of compliant documents (i.e. to pay the beneficiary at sight, to incur a deferred payment undertaking or accept a bill of exchange and pay the beneficiary at maturity); **(10)** bank payment obligation (BPO) which is an irrevocable and independent undertaking of an obligor bank to pay or incur a deferred payment obligation and pay at maturity a specified amount to a recipient bank, following submission of all data sets required by an established baseline and which have resulted in a data match or an acceptance of a data mismatch; and **(11)** typical asset-based lending which includes any kind of lending secured by an asset (e.g. inventory, accounts receivable, machinery, equipment, building).

My research focus is placed in the SCF instrument called "*Reverse Factoring*" (RF) which belongs to the 1st presented category of SCF buyer-centric, or accounts payable-centric, tools. As a SCF instrument, it allows a supplier to receive a discounted payment of an invoice due to be paid by a buyer (i.e. an account payable). The buyer approves the invoice for payment and finance is provided separately against the payable by the supplier from a bank or other finance-related provider, who relies on the creditworthiness of the buyer. The buyer pays at the normal (or another, mutually agreed) invoice due date, whereas the supplier receives a discounted payment through the financing facility. Furthermore, the funding provider (e.g. a bank) relies on the creditworthiness of the buyer while the major benefits for the supplier are based on an "arbitrage" between the higher credit rating of the buyer and the typically higher cost of financing for the supplier, as well as the availability of the finance (Camerinelli & Schizas, 2014). Therefore, **(1)** lower working capital cost, that could improve the

suppliers' financial performance, and **(2)** easier / faster access to working capital funding, which could improve the suppliers' cash flow management and position (ceteris paribus all other internal and external parameters and conditions) are considered to be the main attractive elements for suppliers. As it is the ordering party (usually a larger buyer with a higher quality of credit rating) which initiates the process, it is that party's liability to invite and fully inform the suppliers about the RF program offered and then be regularly engaged, once suppliers accept to adopt such a SCF instrument.

In terms of the RF instrument operating framework, there are basically two main operating models for its provision. In the first model, a buyer establishes a RF program with a bank or other finance provider and agrees what payables will be eligible for financing and what payables information will be triggering the process (Bryant & Camerinelli, 2014). Invoices are presented either in paper or electronic form to the buyer in the normal way. The buyer approves the invoice for payment and creates the usual entries in the accounts payable accounting ledger. The buyer then provides the bank with a schedule of accounts payable due and approved. In the latter activity either the buyer establishes a specific list of approved payables / future payments due, or makes available its accounts payable invoice database in a web portal. At this stage, the suppliers who are the creditors for the invoices due may be offered finance (often through an automated SCF platform, either built in-house or white-labeled) and each supplier identifies the accounts payable he/she would like the bank to finance. Suppliers may be given discretion as to which individual approved payables to be financed or to select an automatic finance option for all their approved payables (subject to an

availability control). The bank then purchases the payable on a sale (or assignment) basis without recourse to the supplier. The bank becomes the trade creditor to the buyer and relies on the buyer's responsibility to settle with the bank at maturity. The buyer is not usually an entity to the financing arrangement, but may cover payments under invoices due. The bank agrees the discounted amount to be paid (calculated based on a base interest rate plus a spread[1]), makes the payment to the supplier and arranges for its settlement by the buyer on the agreed due date of the payable. A typical buyer requirement is that the approved RF solution is structured from a legal and accounting perspective in such a way that the treatment of trade creditors remains unaltered (i.e. the liability does not become reclassified as "*bank debt*"). Therefore, it is usually important that the financing of the supplier is at "*arms-length*" from the buyer.

The finance usually should be requested and accepted by the supplier (following invitation, information, and on-boarding procedure), hence the need for an on-boarding process to ensure that the eligible suppliers are configured on the SCF platform and have been subject to an appropriate "*Know Your Customer*[2]" (KYC) bank check. It should be noted that whenever the financing value is particularly large, the instrument may leverage the financing capacity of several banks / financiers, where the funding requirements for the same ultimate obligor as well as the conditions may be syndicated among several banks and finance

[1] **Discount charge (to by deducted by the invoice amount the bank will provide financing for to the supplier)** = invoice amount * annual discount rate {e.g. Libor or Euribor + bank spread} * (days of financing / 360 days).

[2] **Know Your Customer**: It refers to relevant information obtained from a bank's clients for the purpose of doing business with them. The objective of KYC guidelines is to prevent banks from being used, intentionally or unintentionally, by criminal elements for money laundering activities. Related procedures also enable banks to know or understand their customers, and their financial dealings better. This helps them to manage their risks prudently.

providers, and such syndications are a growing feature of the market. In such a model, a bank is typically the main provider and works with a creditworthy buyer to identify a list of strategic suppliers which usually belong within the top 10-20% of the supplier base. These suppliers are offered finance in the way described above and on-boarded into the SCF platform. In doing so, the bank meets the needs of the most critical suppliers, minimizes onboarding and KYC challenges, and undertakes transactions of sufficiently profitable size and quality.

As far as the second model is concerned, the process is supported by an e-invoicing service provider, or third party B2B platform, which provides services to the buyer and suppliers based on a service platform through which, following submission and safeguarding of suppliers' financial data, approved invoices are displayed in the e-invoicing portal and required information as well as interaction is generated between the entities involved (Bryant & Camerinelli, 2014). Under such an arrangement, the RF program is very much tied to the ongoing invoicing process and the various information flows are collected and fully integrated in the e-invoicing portal. One of the main attractions to the financier of this model is that large numbers of suppliers will already be on-boarded for the invoice process and be available for RF funding (subject to any additional KYC process). Moreover, establishing the process on an e-invoicing service creates some advantage in that the invoices are likely to be approved on an accelerated basis, therefore offering an enlarged "*window of opportunity*" in terms of eligible time-frame for potential financing.

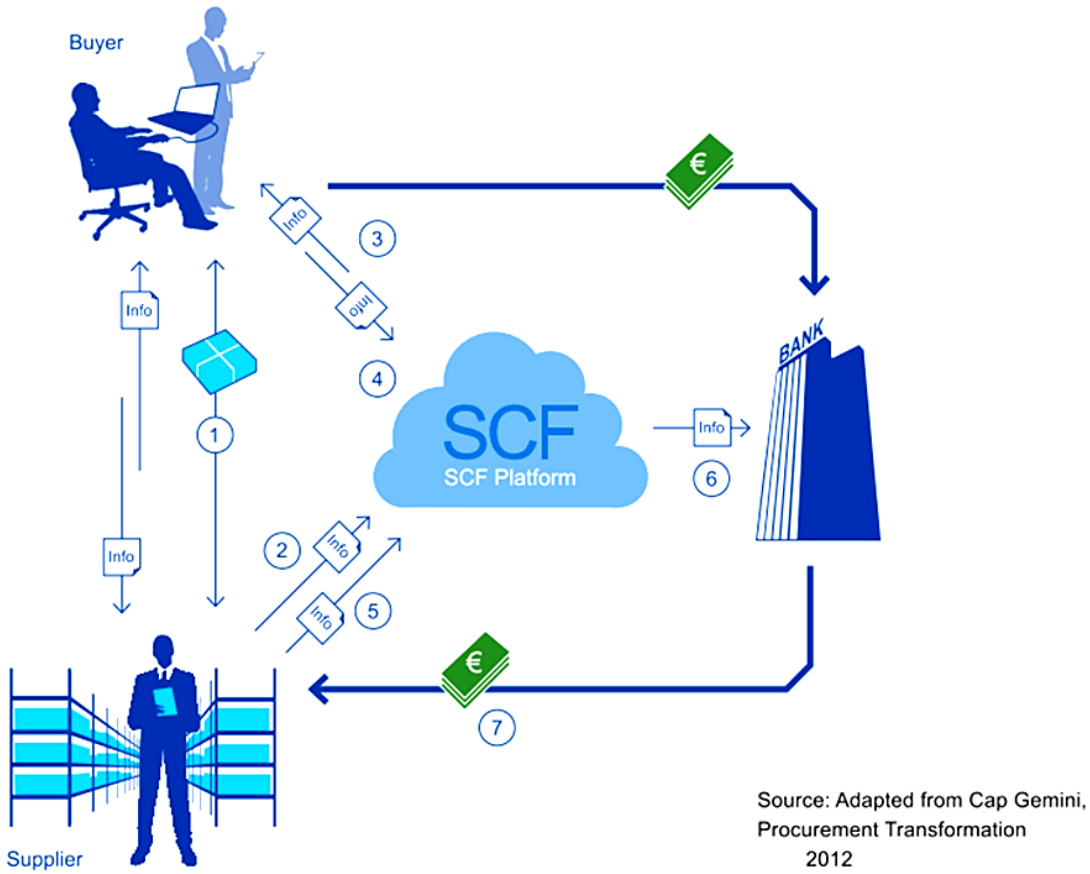
Under this second model, advocates see the potential to extend it to support the liquidity needs of a much broader base of Small-to-Medium sized Enterprise

suppliers (SMEs), including that way the potentially high percentage of such suppliers. This has the advantage of supplying credit to a sector where credit capacity remains potentially constrained and lengthened credit terms are financially squeezing the suppliers concerned. Despite the potential benefits of SMEs onboarding, issues such as the KYC process, sub-scale transaction size and unknown demand due to perceptions (e.g. many SMEs believing that they should just be paid in full and not paying any discount for money that is legitimately theirs already), suggest a more complex environment, but there are those providers who offer this service (e.g. "*OB10*" which is a global B2B e-invoicing network based in London, UK) as such an alternative availability of official SME funding schemes may also stimulate growth of this market segment, especially if we consider the relatively high interest rates for traditional core lending products towards SMEs. For supporting such a market enlargement, two key success factors are: **(1)** the automated accounts payable process at the buyer; and **(2)** the integration and scaled-up on-boarding of suppliers onto the platform (used to communicate details of approved invoices / payables) which enables the supplier to select which to finance and instruct the financing bank accordingly. Furthermore, there must also be an effective KYC process, as the financing bank will need to accept instructions from the supplier to undertake the discount, and such discounting will involve the assignment of the receivable, resulting in a need for a documented agreement between the supplier and the financing bank. The challenge here is that the supplier may not or will not usually have a banking relationship with the financing bank. If that is the case, from a compliance perspective, most banks will adopt a prudent stance and treat the

supplier as the instructing party where appropriate documentation will need to be executed and a limited amount of company research (not a full KYC) on each and every on-boarded supplier will have to be undertaken.

In a typical RF finance process flow, as **Exhibit 4** illustrates in seven steps, the main source of information is an approved payable, while the starting point for RF funding is the underlying transaction between the buyer and the supplier **(1)**. Then, the invoice for the transaction is submitted to the buyer by the supplier **(2)**, enabling the buying party to receive it into its enterprise resource planning (ERP) system **(3)**. As soon as the buyer has approved the invoice/account payable, the approval is communicated via the SCF platform **(4)**, allowing the supplier to view and check it. Then, it is up to the supplier to either wait until the payment term expires and the buyer pays the invoice, or to request finance from the bank **(5)**. The bank receives this request via the SCF platform **(6)** and pays the supplier for the invoices, withholding the agreed discount **(7)**. When the agreed payment term expires, the buyer makes a payment to the bank, after which all obligations have been met.

Exhibit 4: Reverse Factoring finance process flow in 7 Steps



Despite the benefits provided to suppliers upon RF program adoption, it is indicated that in cases where suppliers, that have entered into such a SCF agreement, later experience poor results it is very likely that the main reasons for failure are a lack of proper planning and the limited visibility of eight major identified elements, necessary for building a conceptual framework for assessing each case (Camerinelli & Schizas, 2014). Those typical, but also critical, elements for assessing and planning a successful business case for RF adoption are the following: **(1)** the funding fee structure, which is typically composed of the interest rate charged and the amount that each bank decides to add to the base rate as its revenue (the so called "*spread*"); **(2)** legal aspects of title transfer, included in a typical RF contract (as funding is disbursed against a title that

ensures that funds will be repaid), which involve the type of account payables the bank finances, the entity which is responsible for payables collection (the bank or the supplier), the procedure followed for information notification and collection, as well as the underlying banking instrument used for the financing (e.g. open account receivable, bill of exchange, promissory note); **(3)** limits and thresholds imposed by the bank on the transactions financed, such as the type, amount and number of eligible account payables as well as the required elapsed period before an amount payable is financed; **(4)** payment details which relate to the SCF funds' transfer specification of payment channels as well as any limitations on the currencies available, electronic systems used, and dedicated bank accounts; **(5)** time schedule related to the flow of activities, following an approval of an invoice to be financed by RF; **(6)** risk factors which should be taken into consideration, such as the extent of assumed risk of expected cash flows by each entity involved, as well as the probability of fraud, financial distress and contract clause breaches; **(7)** expected tangible (i.e. easier to quantify in monetary terms) and intangible (i.e. harder to quantify in monetary terms) benefits for the buyer as well as the supplier who adopts such a RF program, summarized in **Exhibits 5a-b** (Camerinelli & Schizas, 2014; Bryant & Camerinelli, 2014); and finally **(8)** one-off and recurring costs, related to IT (software, hardware) and SCF platform, due diligence, legal, training, and administration costs and fees, as summarized in **Exhibits 6a-b (**Camerinelli & Schizas, 2014).

Exhibit 5a: Tangible & intangible benefits with Reverse Factoring for suppliers

Entity	Benefit Type	Benefit	Comment
Supplier	Tangible	Reduced days sales outstanding (DSO) that improve liquidity (in terms of working capital and cash management)	DSO = (Accounts Receivables/Net sales) x 365. Measures the average number of days it takes to collect revenue following a sale
Supplier	Tangible	Reduced commitment fees for open and/or closed-end bank loan commitments	Open-end loan commitments act like revolving bank credit lines, whereby if a portion of the loan is paid off, the principle repayment amount is added back to the allowable loan limit. Closed-end loans are reduced once any repayments are made.
Supplier	Tangible	Reduction in the overall cost of credit (since it is based on the credit risk of the buyer), including the cost of an equivalent financing line	
Supplier	Tangible	Reduced weighted average marginal cost in case of arranging emergency liquidity	
Supplier	Tangible	Reutilization of credit and AR related cost savings to higher value-added activities, investments	
Supplier	Tangible	Reduced AR carrying costs (e.g. reduced disputes for payments not in time)	
Supplier	Intangible	Improvement of cash forecasting and liquidity planning	
Supplier	Intangible	Reduced probability of needing emergency liquidity (financial distress)	
Supplier	Intangible	Standardized payment terms that improve AR management operating efficiency and reconciliation processes	
Supplier	Intangible	Reduced currency risk, in case of FX transactions (i.e. less hedging required)	**Sources**: Adapted by *Camerinelli & Schizas, 2014; Bryant & Camerinelli, 2014.*

Exhibit 5b: Tangible & intangible benefits with Reverse Factoring for buyers

Entity	Benefit Type	Benefit	Comment
Buyer	Tangible	Extended days payable outstanding (DPO) that improve liquidity (in terms of working capital and cash management)	DPO= (Accounts payable /Cost of Goods Sold) x 365. Measures the average number of days it takes to pay the suppliers. The EU range is 27 to 97 days with an average estimated at 52 days*
Buyer	Tangible	Rebates (i.e. kickbacks) from fund provider	In most cases, the bank involved in the SCF program
Buyer	Tangible	Reduced AP carrying costs (e.g. number and value of disputes)	
Buyer	Tangible	Incremental value creation from freeing up internal credit lines or internal risk limit	
Buyer	Tangible	Avoidance of the opportunity cost of forgone, higher value-added investments	
Buyer	Intangible	Higher operating efficiency by managing electronic invoices and improving reconciliation processes	
Buyer	Intangible	Reduced risk of non-supply (i.e. reduced safety stocks; reduced lot order size of supplies)	
Buyer	Intangible	Reduced risk of non-innovation by supplier (i.e. reduced time-to-market responsiveness)	
Buyer	Intangible	Reduced risk of supplier financial distress	
Buyer	Intangible	Potential enablement of negotiating better terms & conditions due to strengthening of relationship with suppliers	
Buyer	Intangible	A partnership approach towards and from the suppliers is further supported	Buyers that have a strategic dependency on their suppliers become more inclined to treat them as partners and vise versa.
Buyer	Intangible	Reduced currency risk, in case of FX transactions (i.e. less hedging required)	

Sources: Adapted by *Camerinelli & Schizas, 2014; Bryant & Camerinelli, 2014; *Intrum Justitia, European Payment Index, 2012.*

Exhibit 6a: Reverse Factoring one-off and recurring costs for buyers and/or suppliers

Cost element	One-off / recurring	Party accountable	Comments
Monetised: software to access and integrate the SCF platform to the party's back office	One-off	Buyer	If the SCF platform is bank-proprietary the bank tends not to charge the cost. If the SCF platform is provided by a service provider the cost is often embedded in the total cost of implementing the SCF programme (approx. US$2,500 one-time cost).
		Supplier	Banks tend not to charge the cost. Platform providers charge approx. US$200.
Monetised: hardware and equipment needed to use SSL (Secure Socket Layer) technology or equivalent for secure access to the SCF platform	One-off	Buyer/ Supplier	A bank could require such a facility depending on its access system and on the bank's security policy. For a platform provider this cost is part of implementation cost and embedded in the cost for the portal solution.
Monetised: SCF platform (ie, portal) software licence fee	One-off	Buyer	The buyer can purchase the software directly from a SCF platform vendor, or decide to use the bank's, or, finally, to pay a pay-per-use licence to a SCF portal service provider. If the buyer decides to purchase the software, the cost may be around US$600,000. If the SCF platform belongs to the bank, the fee is normally embedded in the risk margin. If the SCF portal is operated through a service provider, the pay-per-use fee is normally tiered: the annual order spend is multiplied by transaction fees, and paid as an annual subscription. The fee can be as low as US$2,000 for an annual spend of US$1,000,000, up to US$600,000 for US$10,000,000 of annual spend.
Monetised: Platform software Implementation and integration fee	One-off	Buyer	Banks tend not to charge this cost. Portal service providers charge this as a professional service fee. It is a one-off cost and usually ranges from US$300,000 up to US$1 million.
Monetised: IT maintenance costs	Recurring	Buyer	Banks do not charge this cost. Portal service providers charge this cost. It is a fraction (usually 18–20%) of the initial licence fee, and is based on volumes transacted. If the software is in pay-per-use mode, the cost is embedded in the subscription fee.
Monetised: Due diligence costs	One-off	Buyer	Costs to bank for assessing buyer's credit worthiness. Between US$300 and US$400 in Europe Whether or not to charge the buyer is the bank's commercial decision
		Supplier	Bank KYC assessment.

Source: Adapted by *Camerinelli & Schizas, 2014.*

Exhibit 6b: Reverse Factoring one-off and recurring costs for buyers and/or suppliers

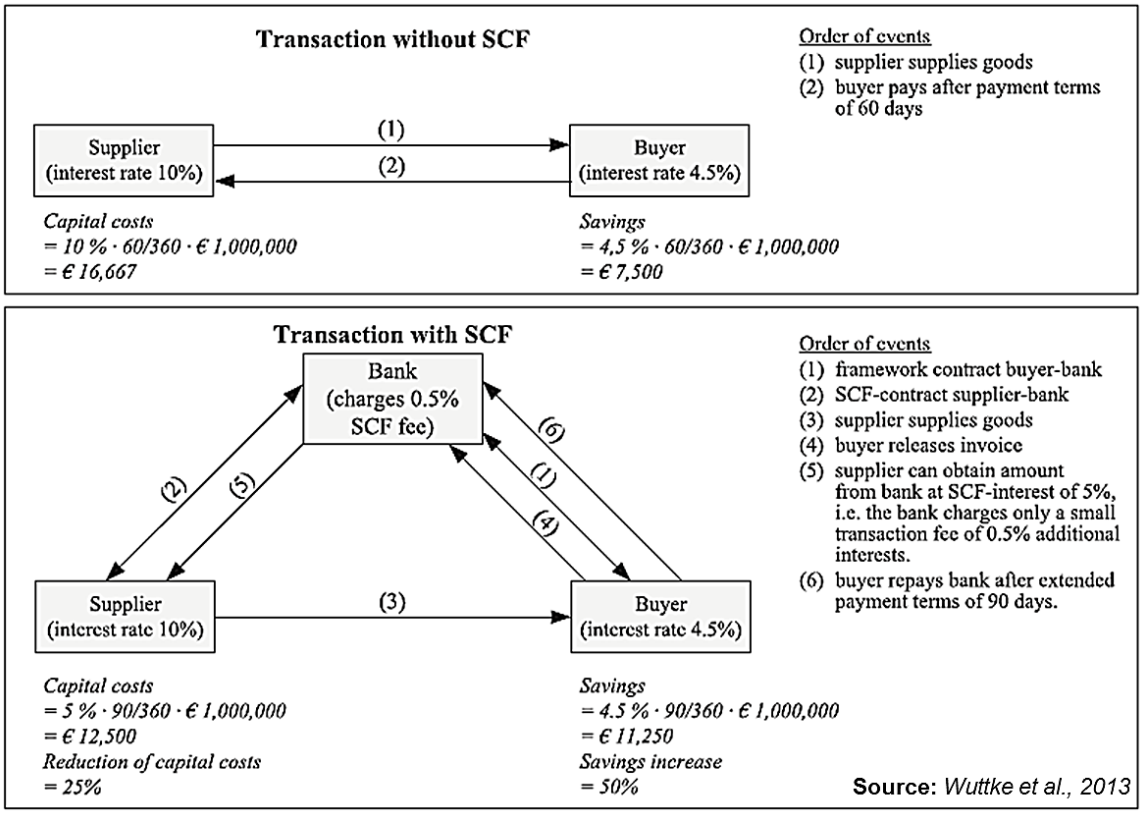
Cost element	One-off / recurring	Party accountable	Comments
Monetised: Training and Education costs	Recurring	Buyer	Banks do not charge this cost. For SCF portal service providers it is normally embedded with the licence fee. It is very important to educate the internal staff (eg procurement, accounts payables) on the changes to the supplier relationship procedures. The amount of the cost depends on the number of subsidiaries to train. The average training time is five days/year. In some cases these costs are quoted as part of a professional services fee.
Monetised: Legal costs	One-off	Buyer	Costs for formalising the SCF agreement. On average US$15,000
FTEs*: IT staff for startup	One-off	Buyer	Between 1 and 2
		Supplier	Not very significant. Less than 1
FTEs: On-boarding	Recurring	Bank/ Buyer	Between 1 and 2 A rough figure is 1 FTE for every 100–150 suppliers to on-board
FTEs: Internal operations	Recurring	Bank	Between 0.5 and 2 On average 20% of on-boarded suppliers tend not to use the platform for financing, so there is the need to keep a constant eye on them and follow up
FTEs: Assistance to buyer/supplier/bank/ fund provider	Recurring	SCF platform provider	0.5 on average
FTEs: Staff of procurement department to discuss contractual details as part of supplier relationship management	Recurring	Buyer	Between 1 and 2 for internal coordination
FTEs: Staff of Legal department.	Recurring	Buyer	0.5 FTEs on average to work with bank and suppliers to ensure proper on-boarding procedures. Large corporations have their own contract ready to hand over to banks and this reduces the FTE time.
FTEs: Staff of Legal department	One-off	Supplier	On average 0.1, to max 1 FTE. This cost often represents a potential barrier to enter SCF programs for small companies.
FTEs: SCF Program leader	Recurring	Buyer	Between 0.5 and 3 FTEs. The number depends very much on the size of the company.

*: **Full Time Equivalent** refers to the ratio of the total number of paid hours during a period by the number of working hours in that period. The ratio's units are FTE units or equivalent employees working full-time. In other words, 1 FTE is equivalent to 1 employee working full-time during the year.
Source: Adapted by *Camerinelli & Schizas, 2014*.

Considering the presented tangible benefits and costs, it is estimated that the total tangible net value, allocated between the buyer, supplier, bank and platform provider and measured in basis points' reduction of the total finance cost (as measured, and compared to, prior to a RF program development and adoption) is between 120 and 400 basis points, depending on the RF program specific agreements on each of the eight major contract elements presented above, the size and risk profile of each buyer and supplier, as well as the collaboration type with the bank and platform provider. This is regarded as a significant tangible net value, especially if we consider three important parameters in a typical supply chain: **(1)** the logistics and transport-related costs (also known as total cost of fulfillment) typically account for somewhere between 4% and 7% of unit prices; **(2)** the cost of capital, which could be somewhere between 4% and 10%, is usually higher for the suppliers, compared to the one of large buyers, by 3-4% or higher (Euromoney, 2007; Nestle Zone Europe Project, 2009); and **(3)** the executives' target of more efficient working capital management, especially when this is a significant part of a company's balance sheet, is always very important and, as indicated by the results of a survey conducted (Seifert & Seifert, 2011), there are buyers who reported that they managed to reduce the amount of net working capital needed by 13% on average through an implementation of a RF program. In terms of capital cost savings specifically, based on an indicative example of a RF program's benefits generated for the large buyer as well as the suppliers who have adopt it, as indicated in **Exhibit 7** (Wuttke et al., 2013), assuming a working capital financing interest rate spread of 5.5% between the supplier (10%) and the buyer (4.5%), a

RF program can reduce the capital costs for the supplier by 25% and lead to an additional saving of 50% of respective capital for the buyer, compared to a typical transaction where the supplier is traditionally financed through a bank.

Exhibit 7: Indicative example of a Reverse Factoring program's capital cost savings within a BSR



Source: *Wuttke et al., 2013*

Therefore, as it can be seen from this indicative example as well, any capital cost benefit provided by a RF program depends upon four important parameters: **(1)** the buyer-supplier financing costs which define the financing spread between the two, and thus the potential benefits and savings generated by a RF program; **(2)** the supplier's invoice payment period agreed with the buyer, before and after a potential RF program adoption (which is also considered one of the major tradeoffs in relation to a RF program's financial benefits); **(3)** the bank interest charged by the bank to the supplier, within a RF program scheme, and; **(4)** the

fee charged by the bank to the supplier, per RF program transaction. Moreover, on average, within RF program arrangements 80% of the resulting net value is shared between the suppliers and the buyer, with varying degrees of allocation depending on whether the buyer wants to facilitate its key suppliers' financials or, instead, wishes to capture a higher percentage of the net value. Typically, the buyer will capture 35% to 50% of all savings, while suppliers will get 25% to 45%. Another 15% will be captured by the financial intermediary and the remaining 5% is captured by the service provider (Camerinelli & Schizas, 2014).

However, besides any expected net tangible benefits and the allocation of those to the major three or four stakeholders of a typical RF program, an important success factor for any SCF program to work is to understand the position of suppliers and to gain their trust, as indicated by a report related to SCF, published by the *European Commission's Business Innovation Observatory* (Dervojeda et al., 2014). Suppliers that are approached to participate in a RF program fear that they may be exploited since in the world of finance, and especially in BSRs, introduction of new financial arrangements may not lead to a mutual benefit. Therefore, the win-win aspect of SCF is not always immediately obvious to invited suppliers and in order to convince them of the tangible and intangible advantages of such a SCF arrangement, as well as the expected net value generated by such a program adoption, buyers and banks need to understand each specific supplier and develop a creative, tailor-made approach. For achieving that, they need to align their communication methods, and have a clear sense of their role in the approach. Most commonly, the role of the bank is to provide technical information and explain how the SCF program works, while

the buyer should clarify the rationale for such a new SCF arrangement and assure the supplier that there is no hidden, opportunistic agenda, other additional costs (besides the ones presented above), and/or risk.

Besides the necessary trust level which needs to be existing or build, in order for a supplier to adopt a RF program offered by a large buyer, there is an additional critical element which is considered (ceteris paribus any other tangible or intangible net value expected to be captured) and that is the BSR satisfaction level prior to any program adoption as well as after that. This element is indirectly indicated as an important parameter based on the results of a worldwide survey, conducted by Seifert and Seifert (2009), to executives who use RF solutions as buyers, where the second most important benefit experienced (following the program adoption by suppliers), is the improvement of their relationship with the suppliers. Therefore, having analyzed the RF finance process flow, the instrument's main planning elements, as well as the potential tangible and intangible benefits and costs, considering that the importance of BSR quality, in terms of BS trust as well as BSR satisfaction, is also relevant to RF program assessment, adoption and success, this research focuses on those two aspects of the BSR.

1.4 Introduction: Justification and Research Questions

From a business point of view, since the credit crunch of 2007-2008 where market and funding liquidity challenges emerged, followed by an economic downturn and a sovereign debt crisis (Mizen, 2008), companies, and especially SMEs, have become increasingly concerned with their working capital

management because as acquiring bank credit was gradually becoming harder, freeing up working capital was gaining ground as a necessary financial target not only for maintaining acceptable levels of operating liquidity during a highly volatile macro and microeconomic environment, but also as a critical factor for accelerating growth (Beck & Kunt, 2006; De la Torre et al., 2010; Dervojeda et al., 2014).

Given the challenge of bank credit limitations, despite the fact that: **(1)** approximately 80% of business-to-business transactions are undertaken on credit terms of some form; **(2)** trade credit constitutes about 37% of total business assets (Camerinelli & Schizas, 2014; Fabbri & Klapper, 2016); and **(3)** RF appears to be a beneficial financing mechanism for both buyers and suppliers (considering the tangible and intangible benefits and net value presented above) and theoretically preferred over the established SCF account receivable-centric tool of factoring, it is estimated that up until 2014, as presented in **Exhibit 8,** it represented approximately only 6% of the world SCF account-receivable centric market in dollar value terms (Factors Chain International, International Factoring Association; Dervojeda et al., 2014; Camerinelli & Schizas, 2014), while assuming that the cumulative average growth rates of the period 2008-2014 were recorded during the period 2015-2017 as well, then currently this percentage should not be higher than 10% ($470-630 bl.)

Exhibit 8: World Factoring & Reverse Factoring Market Size & Shares

Aboslute Figures (in millions of USD)	2008	2009	2010	2011	2012	2013	2014	CAGR '08-'14
Domestic - Invoice Discounting (FCI Members)	291.750	283.130	271.755	361.647	398.897	456.181	359.946	3,6%
Domestic - Recourse Factoring (FCI Members)	236.683	227.423	312.097	346.630	403.552	468.777	427.305	10,3%
Domestic - Non-Recourse Factoring (FCI Members)	343.212	346.695	376.285	429.210	464.291	475.980	446.576	4,5%
Domestic - Collections (FCI Members)	36.575	34.043	31.083	33.712	36.635	43.337	48.151	4,7%
Domestic - Factoring by Non-FCI Members	1.620.010	1.598.883	1.863.278	2.268.640	2.346.646	2.492.053	2.229.078	5,5%
International - Export Factoring (FCI Members)	124.424	108.185	167.459	211.162	253.907	302.658	290.990	15,2%
International - Import Factoring (FCI Members)	31.532	25.205	31.336	40.092	48.398	69.674	64.903	12,8%
International - Export Invoice Discounting (FCI Members)	45.727	57.705	39.619	66.170	112.288	120.694	106.839	15,2%
International - Factoring by Non-FCI Members	248.397	236.606	326.724	342.204	464.700	555.941	588.185	15,5%
World Factoring market (domestic & international markets)	**2.978.311**	**2.919.884**	**3.421.646**	**4.101.478**	**4.531.326**	**4.987.308**	**4.563.988**	**7,4%**
World Reverse Factoring market (domestic & international)*	**48.249**	**67.157**	**92.384**	**123.044**	**163.128**	**214.454**	**267.900**	**33,1%**

Market Shares (in %)	2008	2009	2010	2011	2012	2013	2014	CAGR '08-'14
Domestic - Invoice Discounting (FCI Members)	10%	10%	8%	9%	9%	9%	8%	-3,55%
Domestic - Recourse Factoring (FCI Members)	8%	8%	9%	8%	9%	9%	9%	2,77%
Domestic - Non-Recourse Factoring (FCI Members)	12%	12%	11%	10%	10%	10%	10%	-2,69%
Domestic - Collections (FCI Members)	1%	1%	1%	1%	1%	1%	1%	-2,50%
Domestic - Factoring by Non-FCI Members	54%	55%	54%	55%	52%	50%	49%	-1,78%
International - Export Factoring (FCI Members)	4%	4%	5%	5%	6%	6%	6%	7,30%
International - Import Factoring (FCI Members)	1%	1%	1%	1%	1%	1%	1%	5,04%
International - Export Invoice Discounting (FCI Members)	2%	2%	1%	2%	2%	2%	2%	7,28%
International - Factoring by Non-FCI Members	8%	8%	10%	8%	10%	11%	13%	7,52%
World Factoring market (domestic & international markets)	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	
World Reverse Factoring market (domestic & international)*	**1,6%**	**2,3%**	**2,7%**	**3,0%**	**3,6%**	**4,3%**	**5,9%**	**23,93%**

Source: Factors Chain International, International Factoring Association.
**: 2011 figure (Wikipedia, International Factoring Association, 2011); 2014 figure (Camerinelli & Schizas, 2014).*
**: 2008, 2010, 2012, 2013 estimates based on EC, Business Innovation Observatory (Dervojeda et al. 2014) growth range estimates.*

Historically, the factoring market recorded a total value of over $860 bl. worldwide in 2004, as a result of an impressive total growth rate of 88% during 1998-2004 (Klapper, 2005; 2006), and continued growing with a cumulative average annual growth rate of 7.4% during 2008-2014 reaching approximately $4.56 tr. in 2014 with international factoring activities recording the highest growth rate and increasing its total market share at 22% in 2014, from 15% in 2008, while domestic factoring activities decreased their respective market share from 85% in 2008 to 78% in 2014. As for the world market of RF, it recorded an impressive cumulative average annual growth rate of approximately 33% during 2008-2014 with its respective market share recording a continuous increase since 2008 and the most active sectors being the ones of retailing, manufacturing, consumer products, automotive, aerospace, agriculture, chemicals, and pharmaceuticals (Dervojeda et al., 2014). However, the RF market share remains relatively low, compared to the absolute size of the world SCF account receivable-centric

market, it follows a decelerating annual growth rate, and according to the *European Commission's Business Innovation Observatory* projections, this market is predicted to grow by 10% annually until 2020 (Dervojeda et al., 2014). Furthermore, in a more recent report by McKinsey (Herath, 2015), the RF industry's potential is considered a large one, with $1.8 tr. in estimated financeable highly secure payables globally and a potential revenue pool (for RF program providers) of $20 bl. Most RF programs are in the retail, automotive and manufacturing sectors with significant opportunities to be captured in technology and capital goods. Today though not more than $2 bl. can be potentially captured but this potential market is expected to continue growing at approximately 15% for the period 2015-2018 (Herath, 2015). Based on these facts, there are three important derived research questions: Firstly, in what way the exposure to SCF programs, such as RF, and adoption invitation is related to the drivers and quality of a BSR (as perceived by suppliers). Secondly, what drives the suppliers' assessment process of a RF program adoption offered by large retailers (ceteris paribus the typical program parameters which vary, such as the identified tangible benefits, costs, fees, etc.). Thirdly, why is this RF market phenomenon occurring within supply chains and particularly between large retailers (principals) and suppliers (agents)?

From an academic point of view, research at the interface of operations and finance is growing fast, and research opportunities within the field of alternative credit schemes (such as RF program) have been highlighted (Seifert et al., 2013). More specifically, explicit reference to SCF appears as early as 2002 (Stemmler), while a general academic definition was provided back in 2009 by Pfohl and

Gomm, as "*the intercompany optimization of financing as well as the integration of financing processes with customers, suppliers, and service providers in order to increase the value of all participating companies*". Furthermore, researchers have pointed out that operations management can be improved significantly by taking the impact of financial decisions on operations into consideration (e.g. Buzacott & Zhang, 2004; Berling & Rosling, 2005; Protopappa-Sieke & Seifert, 2010). However, the theory and practice of SCF is by no means mature (Iacono et al., 2015) and, as such, further analysis of the complex dynamics and management challenges in financial supply chains remains an important task (More & Basu, 2013), considering that SCF research should not only focus on the management of financial flows along supply chains (e.g. Bowersox & Closs, 1996; Mentzer et al., 2001; Hofmann & Kotzab, 2010; Gupta & Dutta 2011) and trade credit decisions for supply chain coordination (e.g. Lee & Rhee., 2011), but also on RF benefits, objectives & antecedents (e.g. Klapper, 2005; 2006; Vliet et al., 2015; Lekkakos & Serrano, 2016; Liebl et al., 2016).

As such, there are relatively limited research attempts so far (e.g. Wuttke et al., 2013) which try to provide possible explanations to: **(1)** the relatively low level of SCF adoption of only 15% of firms (Aberdeen Group, 2007); **(2)** the important adoption assessment factors from the supplier side; or **(3)** the potential ways a buyer could persuade sufficiently suppliers to adopt a SCF program / instrument and, at the same time, maintain or improve the respective BSR quality. Considering the business importance of the SCF market and its respective instruments, the recorded phenomenon of a relatively low level of RF market share (in comparison to the world SCF market value as well as in terms of

suppliers' participation), its future potential and the respective academic research opportunities and knowledge gap identified and highlighted, I believe that my research focus, as presented from different aspects in the previous sections, could be considered as business-relevant and academically significant in terms of empirical research conducted.

1.5 Introduction: Objectives and Contribution

The objective of this research is threefold. Firstly, to contribute towards a better understanding of the relation between RF programs' adoption assessment process followed by invited suppliers and their perceived BSR quality, as captured by BSR satisfaction and BS trust and their common four non-finance & finance related antecedents (information exchange, goal congruence, buyer credit worthiness and supplier working capital benefit). More specifically, to investigate the potential impact of BSR satisfaction and BS trust to suppliers' ex-ante assessment, based on RF programs' attractiveness, and ex-post assessment, based on risk of buyer opportunistic behavior, respectively. Secondly, to examine the potential link between the important finance related parameters of suppliers' cash ratio and fear of financial distress signaling to the suppliers' RF program adoption assessment process. Thirdly, following the analysis of the first two objectives, to provide an additional potential explanation regarding the relatively low market share of the RF market from the point of view of BSRs, ceteris paribus legal and regulatory settings, macroeconomic, industry and banking conditions, as well as RF-related terms and conditions (such as program costs, fees, etc.).

More specifically, in relation to the examined BSR quality antecedents, besides the already well researched non-finance drivers of **(1)** information exchange (e.g. Lee at al., 1997; Li, 2002; Huang et al., 2003; Zhou & Benton, 2007; Caglio & Ditillo, 2012) and **(2)** goal congruence (e.g. Narayanan & Raman, 2004; Angerhofer & Angelides, 2006; Rossetti & Choi, 2008; Vachon et al., 2009; Cao & Zhang, 2011), this research aims of expanding the understanding of the impact of major finance related antecedents, such as **(3)** buyer credit worthiness, and **(4)** supplier working capital benefit to BSRs quality (as perceived by suppliers) where existing research on those two constructs is relatively limited and not yet matured (e.g. Lee & Rhee, 2011; Elgazzar et al., 2012; Seifert et al., 2013).

Furthermore, besides the importance examination of the two major non-finance related and two finance related drivers to BSR quality, within the context of RF program adoption, and whether the finance related drivers are more or less important compared to the non-finance related ones, I am hoping of contributing some additional useful insights on additional drivers of RF program adoption assessment made by suppliers, by focusing on suppliers' cash ratio and fear of financial distress signaling. The supplier's company cash ratio is examined as one would expect that, based on the analysis of RF programs and their benefits (as presented in previous sections), the cash position of suppliers should be associated with the RF program adoption assessment. This is further supported by recent research conducted regarding the SCF programs which highlights the link between potential adoption assessment and financial status of the supplier's company, such as the account receivables' volume (Iacono et al., 2015), and the

respective net (after costs) financial improvement such an adoption could provide in relation to the company's working capital goals (Liebl et al., 2016; Vliet et al., 2015). Furthermore, the suppliers' fear of financial distress signaling in case of RF program adoption is also examined as such, true or false, signals could not only be perceived as important warnings of opportunistic behavior but also as early alerts of operational or financial inefficiencies and problems which could affect the buyers' own operational or financial condition as well (Connelly et al., 2011).

For supporting the reasoning of my research arguments and findings, I have examined and utilized the theoretical grounds provided by the associated perspectives of: **(1)** Agency Theory (AT) regarding principal-agent behavior vs. outcome oriented relationships (Jensen & Meckling, 1976; Jensen, 1983; Eisenhardt, 1989); **(2)** Transaction Cost Economics (TCE) in terms of mutual gains as well as risk of opportunism in BSRs (Coase, 1937; Williamson, 1975; 2008); and **(3)** Social Capital Theory (SCT) three dimensions (Nahapiet & Ghoshal, 1998) in relation to trust (relational capital), shared goals (cognitive capital), as well as information exchange (structural capital).

2.1 Literature Review: BSRs from the Perspective of Agency Theory

The origins of AT are traced back to the period between 1960 and 1975. At the time, according to Eisenhardt (1989), economists explored risk sharing among individuals or groups (e.g. Wilson, 1968; Arrow, 1971). This literature described the risk-sharing problem as one that arises when cooperating actors have different attitudes toward risk. Further development of AT expanded this risk-sharing literature to include the so-called "*agency problem*" that occurs when these actors have different goals and division of labor (e.g. Ross, 1973; Jensen & Meckling, 1976). More specifically, AT focuses at the complicated agency relationship, in which one party (the principal) delegates a task or work to another (the agent), who performs that task or work, and it attempts to describe this relationship using the metaphor of a contract (e.g. Jensen & Meckling, 1976). The theory is trying to explore, explain and potentially provide alternative solutions to two major problems that can occur in agency type relationships. The first one is the agency problem that arises when: **(a)** the goals of the principal and agent are in conflict, as it could be the case in BSRs within the context of a potential SCF program agreement and environment; and **(b)** when it is difficult and / or expensive for the principal to verify the agent's actual actions, or vice versa. On this occasion, the problem is that the principal cannot verify easily and/or objectively the appropriateness of the agent's behavior and actions, or vice versa. The second problem is the one of risk sharing that arises when the principal and agent have different attitudes toward risk. On this situation, the problem is that the principal and agent may prefer different actions because of different risk preferences. Such a problem may also appear in a situation where suppliers have

been invited to potentially adopt a RF program, offered by a large retailer, and assess this possibility and their subsequent decision, based not only on the perceived costs and benefits but also on their risk preferences, which may differ compared to those of the retailer.

AT has been developed along two major streams: positivist and principal-agent (Jensen, 1983). These two streams share a common unit of analysis (a contract between a principal and an agent) and common assumptions about human beings, companies / organizations and information. However, as Eisenhardt (1989) indicates, they differ in their mathematical complexity, dependent variable and style. From a theoretical point of view, positivist AT is focused on identifying situations, in which the principal and agent are likely to have conflicting targets, and then describing the governance mechanisms that limit the agent's self-serving behavior. The basis of any such mechanism is captured by Jensen's question (1983) "*why certain contractual relations arise*". Principal-agent stream, on the other hand, is mostly concerned with the general framework of the principal-agent relationship that can be applied to buyer-supplier, employer-employee and other agency relationships (Harris & Raviv, 1978). The focus of the principal-agent literature is on determining the optimal contract (behavior vs. outcome oriented) between the principal and the agent. The first contract case assumes goal conflict between principal and agent and an agent who is more risk averse than the principal, a frequent phenomenon between suppliers and their larger buyer which should also exist within a SCF agreement environment. The second contract case is when the principal doesn't know exactly what the agent is doing and, given the self-interest of the agent, the

agent may or may not behave as agreed. Moreover, there are two aspects of the agency problem which are frequently cited: Firstly, moral hazard that refers to lack of effort on the part of the agent. The argument here is that the agent may simply not put forth the agreed-upon effort. Secondly, adverse selection that refers to the misrepresentation of ability by the agent. The argument here is that the agent may claim to have certain skills or abilities, when he/she is hired/contracted, that the principal cannot completely verify at the time of hiring/contracting or while the agent is working.

The theory makes two specific contributions to organizational thinking. The first is the treatment of information. In AT, information is regarded as a commodity and as such it has a cost, and it can be purchased. Moreover, as it may not be readily available at the same width and depth between principals (buyers) and agents (suppliers), any information asymmetry could be utilized either in a positive (e.g. BSR improvement) or negative (e.g. BSR opportunism) manner from both sides. A second contribution is related to risk implications. Organizations are assumed to have uncertain futures. The future may bring prosperity, bankruptcy, or some intermediate outcome, such as financial distress, and that future is only partly controlled by each organization as macro and micro environmental effects can affect those outcomes. Therefore, AT extends organizational thinking by pushing the alternatives of outcome uncertainty to their implications for creating risk. Uncertainty is viewed in terms of risk/reward trade-offs, not just in terms of inability to plan ahead. The implication for BSRs is that outcome uncertainty coupled with differences in willingness to accept risk (from both parties) should influence the type, design and implementation of contracts

between principal and agents, such as a RF contract offered by a large retailer to suppliers, through a process of SCF program exposure and information sharing related to it. An overview of the AT as well as its theoretical elements that provide support to my research focus is presented in **Exhibit 9**.

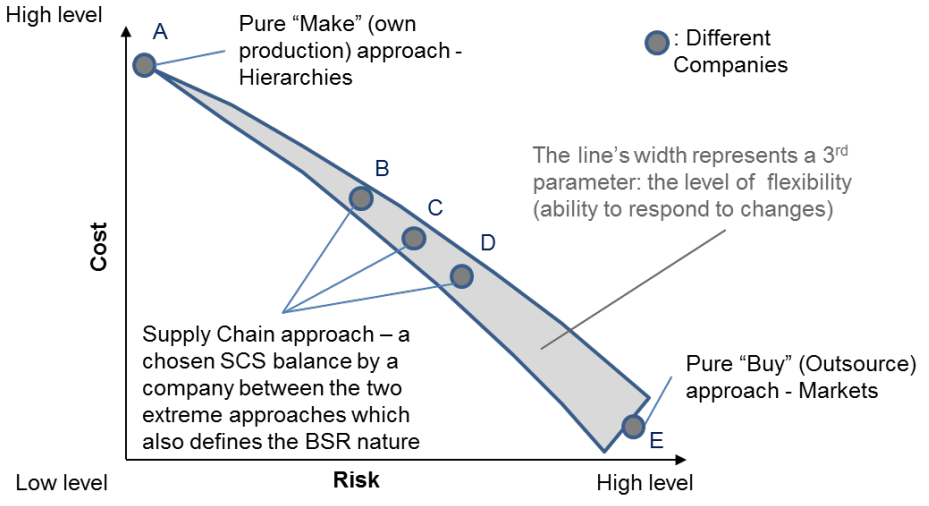
Exhibit 9: Overview of Agency Theory – Major Elements and Theoretical Support	
Key idea	Principal-agent relationships should reflect efficient organization of information and risk-bearing costs.
Unit of analysis	Contract between principal and agent (**behavior*** or outcome oriented contract).
Human assumptions	Self-interest. Bounded rationality. Risk aversion.
Organizational assumptions	Partial goal conflict among participants. Efficiency as the effectiveness criterion. **Information asymmetry between principal & agent***.
Information assumption	Information as a purchasable commodity (it has a cost and it can be purchased).
Contracting problems	Agency (moral hazard & adverse selection). **Risk sharing methods & agreements*.**
Problem domain	Relationships in which the principal & agent have partly differing goals and risk preferences (e.g., **financial agreement*** / compensation, **payment terms***, regulation, leadership, impression management, whistle-blowing, vertical integration, transfer pricing).
Major theory streams	(1) Positivist (describing the governance mechanisms that limit the agent's self-serving behavior) and **(2) Principal-agent* (determining the optimal contract - behavior vs. outcome oriented - between the principal and the agent)**.
Source: *Eisenhardt, 1989.* *: Research focus theoretical support	

According to Logan's assessment of AT (2000), Eisenhardt is proposing that the agent is more likely to behave in the interest of the principal when the contract is outcome based and the principal has more information about the activities of the agent. On this point, it should also be noted that the reverse could also be a valid proposition where the principal (e.g. a large retailer) is more likely to behave in the interest of the agent (e.g. a supplier) when a RF program contract is outcome based and the agent has relatively more information about the activities of the principal. Eisenhardt (1989) also suggests that different factors contribute to the establishment of specific performance measures. Six circumstances are positively related to behavior-based contracts and negatively related to outcome-

based contracts, including: **(1)** effective information systems, that is a critical success element of RF programs; **(2)** outcome uncertainty, which is one of the major considerations of suppliers in terms of their perceived BSR status as well as the net perceived value of potentially adopting a RF program; **(3)** risk aversion of the agent or the principal, which is a characteristic that could also be observed in a BSR within the context of a SCF program invitation, assessment and potential adoption; **(4)** degree to which appropriate behavior by the agent or the principal can be specified in advance, which is a major consideration of a supplier, as an agent, during the process of assessing a RF program adoption; **(5)** outcome measurability, which in my case can be defined as the possibility and ability of suppliers estimating the perceived expected net value (hard and soft perceived expected benefits minus respective costs) of a RF program following its adoption; and **(6)** the length of relationship. Having reviewed the major elements of AT as well as the main circumstances that are positively related to behavior-based contracts and negatively related to risk aversion and conflicting targets between principals and agents, it can concluded that the scope and focus of this research is based on the theory's principal-agent stream, by applying it in the context of BSRs within a SCF environment and, more specifically, the BSR collaboration and status within a RF program invitation and potential adoption. Therefore, at this point it would be useful to examine SCM, as a field based on which BSRs are formed and evolve, and explore its potential link not only to AT but also to TCE and SCT, all three of which belong within the wider field of organizational theory perspectives.

Traditionally, firms obtain products and services externally or internally, meaning through markets or corporate hierarchies, as the founder and chief developer of TCE indicates (Williamson, 1975). The choice between them is often referred to as the ‘‘*make*” (own / internal production) or “*buy*’’ (outsourcing) decision. A large body of literature has tried to define when a firm should make or buy (Ketchen & Giunipero, 2004). For example, making a product (through hierarchy) enhances predictability (relatively lower risk), but may require significant investment (relatively higher cost) which reduces flexibility (relatively lower ability to respond to changes). Buying (through markets) maintains flexibility (relatively higher ability to respond to changes), which is mostly captured by the buyer in a typical BSR, minimizes investment (relatively lower cost), but reduces predictability (relatively higher risk). In principle, as **Exhibit 10** indicates, the choice of a specific supply chain structure by a company, and a subsequent BSR which is developed and evolves based on that, represents a middle ground (point) between the extreme choices of a pure “*market*” or a pure “*hierarchy*” approach, within the context of organizational theory.

Exhibit 10: Supply Chain Structure in the context of Organizational Theory



A supply chain could be broadly defined in two ways: **(1)** as a network of actors (internal and/or external) that transform raw materials and/or other resources into distributed products and/or services (Handfield & Nichols, 2002); or **(2)** as a network of firms (agents / principals) that contributes both inbound and outbound products and/or services along an industry value chain (Ketchen & Giunipero, 2004), which is this research's case in relation to the supply chain type investigated and its respective BSR formed. Some of the required functions may occur within one firm whereas others cross firm boundaries. Ideally, supply chains could capture the advantages of both markets and hierarchies while avoiding the risks of each. For example, long-term supplier relations are developed to provide stability, but such links are often cut off when needs change due to evolving conditions or any other BSR issues triggered by the collaboration. Thus, predictability is desired, but not at the expense of creating inflexibility that blocks the ability to react to customer, competition, or other important BS collaboration changes.

In relation to organizational theory specifically, according to Miles and Snow (2007), supply chains, have drawn increasing attention from organization theorists starting from the late 1980s and onwards. They also argue that, over the last three decades, in terms of organizational theory, scholarly research interest has evolved from an initial focus on strategic choice, to one of resource development and utilization (*Resource Based View*), and most recently to the design of multi-firm network organizations whose capabilities are focused on knowledge sharing and application (examined to a significant degree by the so called "*Knowledge Based View*"). Moreover, according to Ketchen and Hult

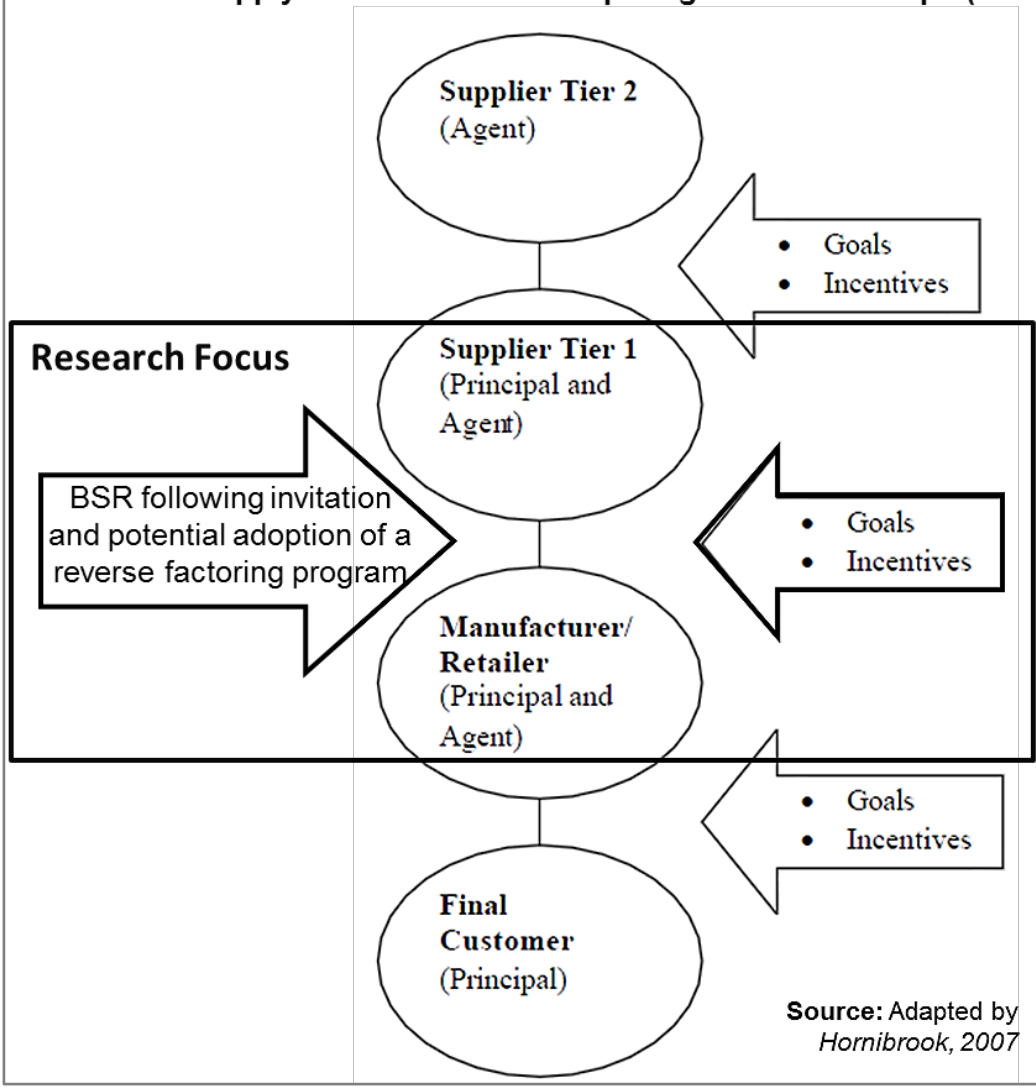
(2007), the application of organization theory's extended range of potentially interesting and useful perspectives (such as *AT, TCE, SCT, Institutional Theory, Network Theory, Systems Theory*, etc.) to interdisciplinary phenomena, occurring either at a specific link of a supply chain or throughout the supply chain, could provide greater understanding. Yet, to date, researchers interested in operations management in general and SCM in particular have made relatively limited use of organizational theories. Despite the attention paid by certain perspectives, the field of organizational theory as a whole, up until relatively recently, has largely ignored SCM.

Following a research conducted on the alternative ways different organizational theory perspectives could contribute to SCM research and what can be the main focus and/or major questions, based on each organizational theory perspective, on a typical (traditional) supply chain, we summarize the findings in **Exhibit 11 (in Appendix A)**, by also highlighting the three perspectives I am focusing on (*AT, TCE & SCT*). Note that a typical supply chain is defined in five main terms: **(1)** in terms of SCM view, as a method to move products / services in order to support strategy and operations; **(2)** in terms of agility, as a modest ability to respond to changes; **(3)** in terms of adaptability, often being limited to single chains or a large number of chains; **(4)** in terms of goal congruence, or the absence of it, where participants are either forced or willingly choose between own and chain's interests and; **(5)** in terms of the competitive priorities of speed, quality, cost and flexibility where emphasis has to be given to one of them (Ketchen & Hult, 2007). The definition I am utilizing mostly

is the one of potential SC goal congruence which could be recorded, or not, within a BSR, following a RF program invitation and potential adoption from the supplier.

AT, in particular, offers a "*natural fit*" with SCM research as it focuses on situations where one entity (the principal) delegates authority to another (the agent) to act, in a predefined way, on its behalf. Problems arise in these relationships because agents often behave in ways that benefit them, not the principals, and vice versa, and there is a high probability and potential for opportunistic behavior (Ketchen & Hult, 2007). Supply chains are full of BSRs involving one firm delegating authority to another. As a result, conflicts of interest often arise within a typical supply chain. The SCM literature often seems to assume that when the chain does well, all members prosper as well. But AT demands attention to more threatening possibilities. The principal-agent relationship this research focuses on is between a first-tier buyer (principal) and its suppliers (agents) who have been invited to adopt a RF program and where goals and incentives' misalignment either exists or may be developed, as presented in **Exhibit 12** (Hornibrook, 2007).

Exhibit 12: Supply Chain's Tier 1 Principal-Agent Relationships (BSR)



In such a BSR within a supply chain, participants may be or become vulnerable to opportunism (a chain member taking, or consider taking, advantage of its partner/s for its own gain). So, research investigating when such potential wiliness is likely to arise and the possible ways to prevent it could offer significant insights and contributions to understanding effective supply chain functioning (Ketchen & Giunipero, 2004). Therefore, applying AT to SCM suggests the following broad questions for further research: **(1)** under which conditions is a supply chain member (agent or principal) likely to attempt to exploit other

members? In this case, the conditions I focus on are within the environment of a RF program's potential collaboration and the respective BSR; **(2)** can the risk of opportunism within supply chains be prevented or minimized? In this case, it is the perceived risk of retailer opportunism towards its suppliers who operate, or consider operating, under a RF program; and **(3)** can the drivers and/or effects of such opportunism on BSRs be investigated with the end-target of developing insights for behavior frameworks or contracts of preventing or minimizing it? (modified questions based on Ketchen & Hult, 2007). Within the context of BSRs associated to a RF program invitation and potential adoption, it is important to note that among those main AT derived questions which could be investigated and potentially answered, the theory's perspectives are also applicable in supporting my hypotheses regarding the two non-finance related antecedents of BSR satisfaction and BS trust (information exchange and goal congruence). Having said that, there are two critical constructs presented which require further explanation and a more focused definition. These are the constructs of "*risk*" and "*opportunism*" which I will try to define by utilizing the concepts of TCE theory.

2.2 Literature Review: BSRs from the Perspective of Transaction Cost Economics

Risk is a word derived from the early Italian word "*risicare*", which means "*to dare*" (Bernstein, 1996). However, its meaning has evolved over time and appears to mean different things to different people, depending on their individual perception of the world (Frosdick, 1997). It was only in the 1950s and 1960s, with major developments in technology and the increasing size and

internationalization of organizations, that risk and its management became of concern to the wider business community (Snider, 1991; Grose, 1992). Although interest in risk and SCM is relatively new, interest in risk and purchasing can be traced back to Williamson's (1979) work on TCE. Williamson argued that the risk of transaction costs between a buyer and a supplier is dependent on the level of uncertainty in the relationship. For example, the more dependent a buyer is on a particular supplier, the greater the cost of switching to another supplier and the less certain the company is that the supplier will not act opportunistically to raise prices for example, unless other factors, such as contractual arrangements, prevent this (Khan & Burnes, 2007). This observation is equally valid from the supplier side where the higher the buyer dependency, the greater the cost of switching to another buyer and the higher the fear of facing opportunistic behavior or demands from the buyer, ceteris paribus all other related factors and conditions.

Williamson's view of transaction uncertainties is in line with more general definitions of risk. As stated by Moore (1983), there are two basic components of risk. The first is risk as a future outcome, which can take a number of forms, such as a buyer demanding lower prices or additional hard and soft benefits / services. The second component is the probability that a particular outcome may occur. In terms of TCE, the less regulated the relationship is, the greater the probability of opportunistic behavior. Therefore, his suggested definition includes both the range of outcomes that might occur and the likelihood of their occurring. Moreover, as Moore (1983) notes, risk includes both the possibility of net loss as well as the hope of net gain. Nevertheless, in looking at how companies perceive

risk, it is the negative connotations of risk (net loss rather than net gain), which seem to preoccupy managers (March & Shapira, 1987; Hood & Young, 2005). In addition to that, as Mitchell (1999) states, risk is defined as a subjectively determined expectation of net loss (the greater the probability of this net loss, the greater the risk thought to exist for an individual or an organization) and many other researchers have agreed to the subjective nature of risk (Kahneman & Tversky, 1979; Gilovich, 1991; Russo & Schoemaker, 1992; Odean, 1998). Therefore, based on the above, in this research **risk** is defined as: *a weighted average, subjectively perceived, probability of potential negative outcomes (financial and/or non-financial net losses) actually occurring, following a potential RF contractual agreement between an agent (supplier) and a principal (large retailer)*.

As far as opportunism is concerned, researchers in both organizational theory (e.g. Donaldson, 1990; Ghoshal & Moran, 1996) and marketing (e.g. Johanson & Mattsson, 1987) have expressed their concerns about the construct. These concerns relate both to whether opportunism is a correct descriptor of human behavior and to the implications of the opportunism concept for theory and practice. According to the opinion of Wathne and Heide (2000), the observation of Maitland et al. (1985) that "*opportunism is not everywhere but it is also not unusual*" represents the most useful analytic perspective. The occurrence of opportunistic behavior has important practical implications and although prior research and reviews have discussed the general concept of opportunism, the complexity of the phenomenon has not been fully explored yet. As Williamson indicates (1979), among the factors on which there appears to be

developing a general consensus are the following: **(1)** opportunism is a central concept in the study of transaction costs; **(2)** opportunism is especially important for economic activity that involves transaction-specific investments in human and physical capital; **(3)** the efficient processing of information is an important and related concept; and **(4)** the assessment of transaction costs is a comparative institutional undertaking.

According to Wathne and Heide (2000), three particular issues are important in this respect. Firstly, reviewed research shows that relatively few studies have measured opportunism (Rindfleisch & Heide, 1997). Although this is consistent with the early TCE theory's view of opportunism, which considered it as a fixed or exogenous condition, other research has suggested that opportunism is more appropriately viewed as a variable to be explained (e.g. John, 1984; Anderson, 1988). Secondly, unresolved questions relate to the conceptual definition of the opportunism construct. In the original theory (e.g. Williamson, 1975), opportunism tended to be viewed as a violation of an explicit contract. More recently, the original "*strong form*" view of opportunism has been expanded to include violations of so-called relational contracts which are based on behavior. Under such contracts, the parties complement formal contracts with specific contracting norms (e.g. Macneil, 1980). Although several authors explicitly discuss opportunism within the context of such contracts (e.g. Williamson, 1996; Gibbons, 1999), my literature review provides relatively limited guidance regarding: **(a)** the specific manifestations of opportunism under relational contracting; and **(b)** the relationship between the original and emerging theoretical perspectives. Thirdly, the concept of opportunism, as currently applied

in the existing literature, includes a broad range of potentially different behaviors. To the extent that the opportunism construct itself is understood to a limited degree, its potential outcomes remain ambiguous. Also, if differences among forms of opportunism are unclear, deploying strategies for suppressing opportunistic behavior may be problematic. On that note, there is evidence suggesting that some of the mechanisms that are often identified as potential solutions to the opportunism problem may in fact undermine an exchange relationship (John, 1984; Reve & Stern, 1986; Murry & Heide, 1998). Based on the above research findings regarding opportunism, as well as its partially investigated use as a construct, in this research **opportunism** is defined as: *a behavior which violates the agreed explicit (economic-based) and / or relational terms of a contract between an agent (supplier) and a principal (large buyer-retailer)*. The presented definitions of risk and opportunism that are utilized in this research (which focuses on BSRs within a potential SCF type of collaboration), along with other related TCE parameters, support the theoretical background of the hypotheses related to the risk of buyer opportunistic behavior.

2.3 Literature Review: BSRs from the Perspective of Social Capital Theory

The broad literature on TCE and BSRs suggests three common approaches for controlling opportunism (e.g. Williamson, 1981; Heide, 1994; McCarter & Northcraft, 2007; Morgan et al., 2007). One approach is to incorporate the use of formal business contracts. This contractual or market approach is commonly used in market channels as a method of coordinating actions between exchange partners (e.g. Dixit, 2003). A second approach for mitigating opportunism risks is

to utilize the hierarchy approach (Williamson, 1981; 1985) where a hierarchical form of governance relies more heavily on internal enforcement mechanisms based on legitimate authority derived from employment relations (Heide, 1994). A third governance approach suggested by the theory is the use of relational mechanisms such as relational contracting to mitigate opportunism risks (Carr & Pearson, 1999). This relational governance approach rests on the principle that transactions are typically embedded in social relationships. As such, there exist non-legal sanctions in the form of relational norms that motivate buyers and suppliers to commit in their exchange relationships (Macneil, 1980; Heide & John, 1992). This approach has gained much popularity in the BSR literature over the last two decades (e.g. Dyer & Singh, 1998; Chen et al., 2004; McCarter & Northcraft, 2007), and it arguably does not have the same shortcomings found in the market or hierarchy approaches (Tangpong et al., 2010). Therefore, many firms have begun to rely on this approach by developing long-term relationships and establishing social control mechanism in their exchange relationships that help govern the behaviors of the exchange partners.

Social control mechanisms, by improving BSR satisfaction, utilize BS trust to encourage desirable behavior (Dyer & Singh, 1998) and they usually take the form of joint problem solving, participatory decision making, thorough information exchange, and fulfillment of promises (Luo, 2002; Fryxell et al., 2002). According to Uzzi (1997) and Carson et al. (2006) **inter-firm trust** is a primary foundation for the use of social control and is typically defined as one party's confidence that the other party in the exchange relationship will not exploit its vulnerabilities (Zaheer et al., 1998; Dyer & Chu, 2003). If, through BSR satisfaction

improvement, there could be a derived high level of trust in cooperation, collaborating buyers and suppliers would be more likely to use social control (Inkpen & Currall, 2004) as social control mechanisms produce close ties between partners, which will in turn create a separate set of largely informal pressures to preserve and strengthen cooperation (Ring & Van de Ven, 1994; Kaufmann & Carter, 2006). As Li et al. (2010) indicate, the use of social control mechanisms may further enhance flexibility and efficiency in BSRs because problems are more likely to be openly identified, examined, and resolved (Wuyts & Geyskens, 2005).

The first systematic contemporary analysis of **social capital** was produced by Bourdieu (1980; 1986) who defined the concept as "*the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance or recognition"*. This definition makes it clear that social capital is decomposable into two elements: **(1)** the social relationship itself that allows companies to claim access to resources controlled by other companies they are associated or collaborate with; and **(2)** the amount and quality of those resources. As Portes (1998) indicates, through social capital, actors (such as buyers and suppliers) can: **(1)** gain direct access to economic resources (e.g. better working capital terms, indirect financial support, investment opportunities, protected markets, superior know-how); **(2)** increase their cultural capital through business contacts with a higher level of expertise and/or sophistication (i.e. embodied cultural capital); or **(3)** alternatively affiliate with companies that grant valued credentials (i.e. institutionalized cultural capital). Moreover, equally important is the

distinction between the incentives of recipients (such as suppliers) and of donors (such as buyers) in exchanges mediated by social capital. The fact that suppliers desire to gain access to such valuable assets is readily understandable. However, more complex are the incentives of the buyers, who are requested or offer to make these assets available without any apparent immediate return. Such motivations are plural and deserve research because they are the core processes that the concept of social capital seeks to capture. Thus, a systematic treatment of the concept must distinguish among: **(a)** the entities that are making claims or enjoy the benefits of social capital; **(b)** the entities that are offering or agreeing to demands for social capital benefits; and **(c)** the resources of social capital themselves (e.g. lower working capital cost, higher cash flow management flexibility, better brand reputation, etc.).

As Roden and Lawson (2014) indicate, SCT gained popularity in the 1990s by directing attention towards the role of a company's social networks as a source of competitive advantage (Baker, 1990; Burt, 1997) and it acknowledges that many economic transactions are embedded within a larger social, political and legal context (Granovetter, 1973; 1985). Subsequently, in the organizational theory literature it is commonly argued that social capital is a valuable asset that results from access to different types and levels of resources made available through social relationships (Granovetter, 1992), while the SCM literature has extensively applied SCT, particularly in examining the characteristics of BSRs and the impact on performance (Matthews & Marzec, 2012). In my research, I adopt the definition of social capital by Bourdieu (1980; 1986) and Portes (1998)

with an attempt to apply it to the BSRs that exist within the context of a RF program invitation and potential adoption.

Nahapiet and Ghoshal (1998) define social capital in relation to three dimensions: **(1)** relational, **(2)** cognitive, and **(3)** structural. Relational capital refers to the "*trust, obligation, and identification present between actors in a relationship*". As mentioned previously, trust in this context refers to the expectation that both actors will behave in a mutually acceptable manner, including an expectation that neither entity will exploit the other's vulnerabilities (Sako & Helper, 1998; Zaheer et al., 1998; Dyer & Chu, 2003). Obligation represents a commitment or duty to undertake some activity in the future (Roden & Lawson, 2014), while identification is "*the process whereby individuals see themselves as one with another person or group of people*" (Nahapiet & Ghoshal, 1998). Therefore, the relational dimension refers to the relationships companies have developed with each other through a history of interactions, leading to a BSR of trust, obligation and reciprocity (i.e., the relationship established through previous interactions, prior to any RF program adoption and following that).

Cognitive capital represents the shared (perceived or actual) goals, norms, vision and values between actors (Tsai & Ghoshal, 1998) and because of those common elements within a BSR, it helps them to make sense of, and perceptually classify, new information and knowledge (Nonaka, 1994; Grant, 1996), such as a RF program invitation and potential adoption. Cognitive capital facilitates the development of common understandings and collective ideologies, outlining suitable ways for buyers and suppliers to coordinate their information / knowledge exchange, and share each other's thinking processes (De Carolis & Saparito,

2006; Caniels & Gelderman, 2010) while its characteristics have been linked to positive and cooperative behaviors due to the development of positive psychological environments (Ring & Van de Ven, 1992; Zaheer et al., 1998; Kostova & Roth, 2003).

Structural capital is the configuration of linkages between people or companies that result from the framework, diversity, centrality, and boundary-spanning roles of the participants (Nahapiet & Ghoshal, 1998). It has been defined in a number of levels, including the level of network (Ahuja, 2000; Burt, 2000; Zaheer & Bell, 2005), information / knowledge sharing (Koka & Prescott, 2002; Lawson et al., 2008), and socialization (Yli-Renko et al., 2001; Oh et al., 2004; Krause et al., 2007). More specifically, structural capital can be defined as a set of social interaction ties that exist between a buyer and a supplier which results from the extent of social processes and activities implemented between them for coordinating and structurally forming the BSR (Larson, 1992; Tsai & Ghoshal, 1998; Nahapiet & Ghoshal, 1998; Yli-Renko et al., 2001; Carey et al., 2011). Lawson et al. (2008) report that the managerial and technical communication sharing embodied in these buyer-supplier social interaction ties helps to directly leverage operational performance improvements for the buying and / or supplying firm. Building on the logic of the "*relational view*" (Dyer & Singh, 1998), social interaction ties are similar to knowledge sharing routines in that they promote a close, regular pattern of interaction between buyer and supplier using formal and informal methods, during which specialized partner-specific knowledge is shared (Cousins & Lawson, 2007). From the three SCT dimensions presented, theoretical support is provided in the following aspects: **(1)** relational

capital perspectives for supporting the hypotheses related to BSR satisfaction and BS trust; **(2)** cognitive capital perspectives for supporting the hypotheses related to BS goal congruence, as well as SCF program attractiveness; and **(3)** structural capital perspectives for supporting the hypotheses related to information exchange, which defines the configuration and strength of linkages between buyers and suppliers.

3.1 Conceptual Model and Major Principle about BSR Satisfaction & Trust

The hypotheses generated and examined are based on the conceptual research model presented in **Exhibit 13** which illustrates: **(1)** the context and focus of this research; **(2)** the examined, common, non-finance and finance related antecedents and their impact on BSR satisfaction and trust, as main determinants of BSR quality level, within the context of a RF program adoption invitation by a large buyer and potential adoption by the invited suppliers; **(3)** the relation of those two major BSR quality determinants to the perceived RF program attractiveness (as an ex-ante, 1st stage, assessment of a RF program, conducted by the suppliers) as well as the risk of buyer opportunistic behavior, following a potential RF program adoption (as an ex-post, 2nd stage, assessment of a RF program, conducted by the suppliers); and **(4)** the association of two additional major finance-related drivers ("supplier cash ratio" and "supplier financial distress signaling fear" respectively) to the critical elements of ex-ante and ex-post adoption assessment of a RF program.

The first core principle behind the model is that **BSR quality** can be adequately defined and captured by **BSR satisfaction** and **BS trust** level. In

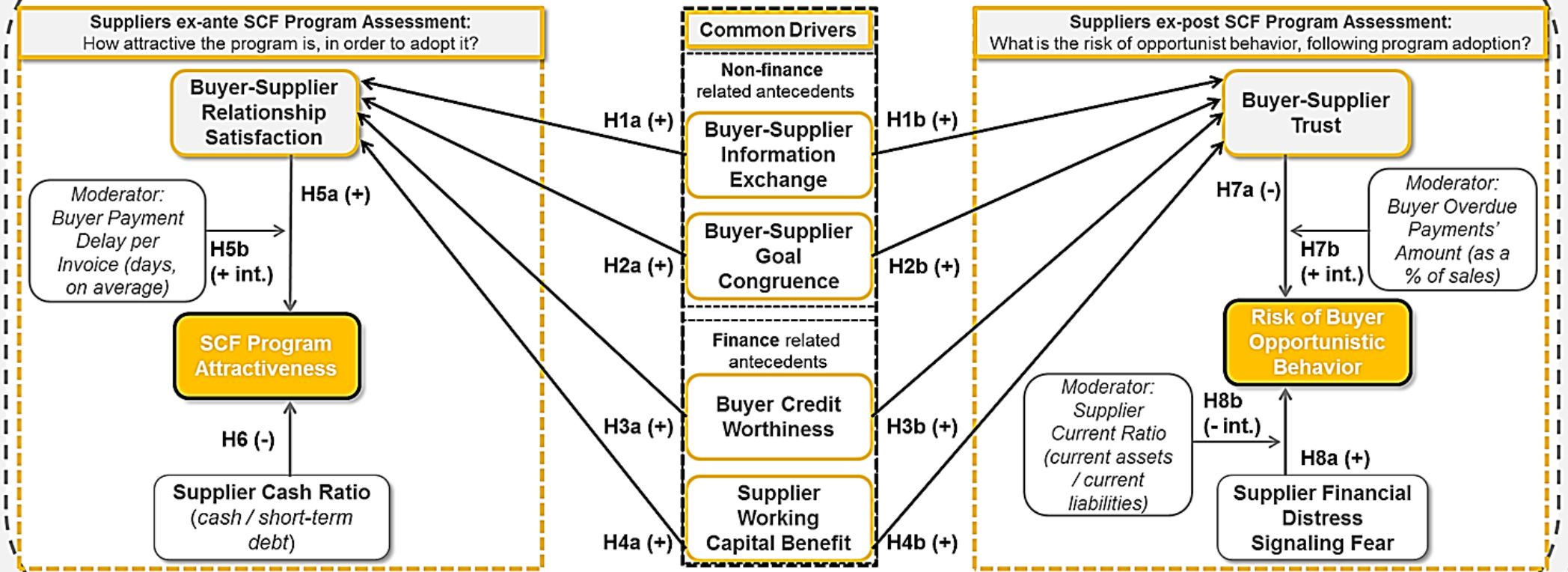
general, relationship quality represents the ‘‘*overall caliber of relationship ties and their overall impact on outcomes*’’ (Palmatier, 2008), it describes the ‘‘*depth and climate of inter-firm relationships*’’ (Johnson, 1999), and it is ‘‘*an indicator of the health and wellbeing”* of relationships (Crosby et al., 1990). Moreover, as Nyaga and Whipple indicate (2011), even though relationship quality has been proposed as a mechanism for distinguishing BSRs along a continuum (low to high relationship quality) to evaluate various aspects of the relationships, it represents the overall relationship in an abstract manner, taking into consideration that it may be difficult to distinguish between specific relational dimensions and/or to isolate the impact of those (Crosby et al., 1990; De Wulf et al., 2001; Palmatier et al., 2007; Fynes et al., 2008; Palmatier, 2008). Because of that, relationship quality has been proposed as a higher-order construct (Kumar et al., 1995; Ulaga & Eggert, 2006). Past studies have used as few as two first-order factors, such as constructive discussion and dependency (Crosby et al., 1990; Hibbard et al., 2001), or four first-order factors, such as inter-organizational altruism, tolerance, loyalty, and compliance (Autry et al., 2008), and as many as six first-order factors, such as satisfaction, trust, commitment, opportunism, customer orientation, and ethical profile (Dorsch et al., 1998), as dimensions of BSR quality. My research review indicates that the dimensions that are most frequently examined are satisfaction, trust, and commitment (Crosby et al., 1990; De Wulf et al., 2001; Hibbard et al., 2001; Ulaga & Eggert, 2006; Skarmeas et al., 2008; Athanasopoulou, 2009; Nyaga & Whipple, 2011) and among those I focus on satisfaction and trust as two of the most important elements for adequately defining the BSR quality (Kwon & Suh, 2004).

Exhibit 13: Conceptual Research Model, Constructs and Hypotheses

- **Industry & Market:** European Retailers Industry / Hyper–Supermarkets
- **Company:** Metro Group, 4th Largest Retailer in Europe and 7th largest globally*
- **Case:** Metro Group, Poland and the Group's Supply Chain Finance Company (MIAG)

*: Ranked by 2013 group turnover in USD. Source: *Global Powers of Retailing – Highlights*. Deloitte Touche, 2015 .

- **Context:** Exposure, detailed information & adoption invitation of a SCF program offered by the retailer to domestic suppliers
- **Focus:** SCF program assessment process based on BSR quality and other antecedents, as perceived by suppliers (measured by survey replies)



8 Control variables tested: 5 Supplier Company-specific: age (years), size (sales), liquidity (current ratio) | financing cost (bank interest paid), leverage (long-term debt / equity)
3 Buyer-Supplier Collaboration-specific: % of sales attributed to Metro, Buyer Payment Delay per Invoice, Buyer Overdue Payments' Amount

Sample Size: 113 Suppliers / No. of **constructs** used in the model: 9 / No. of **quantitative variables** used in the model: 4 (excluding tested control variables)

3.2 Non-finance & finance related antecedents of BSR Satisfaction & BS Trust: Hypotheses

The second core principle upon which my conceptual model is based is that there are common **non-finance as well as finance related antecedents** that are associated with both BSR satisfaction and BS trust. Regarding the non-finance related ones, I focus on information exchange and goal congruence. **Information exchange** within a BSR context refers to the extent to which crucial and/or proprietary information is available to tier-one members of the supply chain. As Hsu et al. (2008) point out, shared information can be tactical (e.g. purchasing, operations scheduling, logistics, finance) or strategic (e.g. long-term corporate objectives, marketing and customer information), while prior research results indicate that it is the most important factor for successful supply chain management (Bowersox et al., 2000; Handfield et al. 2000; Huang et al., 2003). Furthermore, information exchange is considered a key component among supply chain partners of any type (Moberg et al., 2002), it contributes in developing BS trust and collaboration between them (Li et al., 2006), while effective formal and informal information exchange between trading partners enhances visibility and reduces uncertainty (Brennan & Turnbull, 1999; Handfield & Bechtel, 2002). Moreover, from an operational and financial point of view, it has been reported that the benefit of BS information exchange is significant, especially in reducing the bullwhip effect (e.g. Lee et al. 1997; 2000; Cachon & Fisher, 2000) and supply chain costs (e.g. Gavirneni et al., 1999; Lee et al., 2000; Yu et al., 2001) as each supply chain participant can make better decisions on ordering, capacity allocation, and production / material planning for optimizing the

supply chain dynamics. Additionally, as Zhou and Benton (2007) highlight, effective information exchange significantly enhances supply chain practice, positively influences delivery performance, and the higher its level, the more probable it becomes for supply chain practice to achieve superior performance. However, it should also be noted that a high level of BS information exchange may not be beneficial to certain entities in cases where: **(1)** the cost of adopting inter-organizational information systems is higher than the benefit; **(2)** the information itself is unreliable or imprecise (e.g. Swaminathan et al., 1997; Cohen, 2000) or **(3)** when information exchange is not used intelligently (Hong-Minh et al., 2000).

In relation to **BSR satisfaction** specifically, information exchange has been empirically tested and found to be positively associated, as an increase in the volume of operational information exchanged has a positive impact on BSR satisfaction (Whipple et al., 2002). Furthermore, suppliers' satisfaction can be improved by buyer's internal information sharing and extensive communication (Leenders et al., 2005; Huttinger et al., 2012), while buyers who wish to strengthen their suppliers' satisfaction level, should demonstrate a strong interest in information sharing and joint effort (Nyaga et al., 2010). Moreover, information exchange, along with operational excellence, appears to be a major prerequisite for supplier satisfaction, as indicated in certain empirical research papers (Whipple et al., 2002; Maunu, 2003; Leenders et al., 2005; Essig & Amann, 2009).

As for **BS trust** in particular, information exchange has been cited by many studies (e.g., Bowersox et al., 2000; Handfield & Bechtel, 2002; Kwon & Suh, 2004) as one of the most critical elements in the trust-building development of

supply chain participants, such as large buyers and their suppliers. Moreover, it has been argued that, through frequent information sharing, buyers who work towards building a higher level of trust with major suppliers, could also improve supply chain responsiveness (Handfield & Bechtel, 2002). Therefore, based on the examined research results and indications concerning this critical non-finance antecedent, my 1st hypothesis argues that the level of BS information exchange, which results to both relational as well as operational benefits, is positively associated with BSR satisfaction and BS trust, within the context of a RF program adoption invitation by a large buyer and the assessment for potential adoption by the invited suppliers:

Hypothesis 1a-b: Buyer-Supplier information exchange has a significant positive effect on both Buyer-Supplier relationship satisfaction and Buyer-Supplier trust, as perceived by suppliers.

Regarding the second non-finance related antecedent, **goal congruence**, AT uses it to examine complex contracting problems, such as BSRs with the threat of supply chain disintermediation (Rossetti & Choi, 2008). Buyer-supplier goal congruence is defined as the extent to which both entities perceive and agree that their own independent strategic and/or operational objectives are common and result to accomplished supply chain objectives (Chi et al., 2009; Vachon et al., 2009; Hanson et al., 2011). Moreover, such a BS goal congruence, as it refers to the extent of mutual exclusivity of entities' objectives from an exchange relationship, will be considered low when the objectives of one entity are incompatible with, or differ greatly from, the objectives of the other entity

(Forker & Stannack, 2000; Narayanan & Raman, 2004). The establishment of aligned BS goals could guide the nature, direction, and magnitude of the efforts of the two parties (Jap & Anderson, 2003), as committed buyers and suppliers have a deeper understanding of why the BSR exists and how they can contribute to the attainment of compatible objectives.

In this context, BS goal congruence not only could improve perceived **BSR satisfaction**, by reducing the likelihood of **conflict** (Jap, 1999), defined as the process that begins when one party perceives that the other has unfulfilled, or is about to frustrate, some concern of his (Thomas, 1992), but it could also improve the joint engagement's operational and/or financial performance for both entities because they perceive the synergistic potential of the BSR (Tsai & Choshal, 1998; Villena et al., 2011). In relation to **BS trust**, as Politis indicates (2003), congruent goals between buyers and suppliers result in a high level of trust as each party is more willing to contribute relevant knowledge and skills to the BS collaboration. Furthermore, BS goal congruence, which results in trusting BSRs on an individual level, also supports the preservation and sustainability of jointly formed competitive advantages (Jap, 2001). Thus, regarding this second non-finance related antecedent, my 2nd hypothesis argues that, within the context of a RF program adoption invitation by a large buyer and the assessment for potential adoption by the invited suppliers, the level of BS goal congruence is positively associated with BS relationship satisfaction and BS trust:

Hypothesis 2a-b: Buyer-Supplier goal congruence has a significant positive effect on both Buyer-Supplier relationship satisfaction and Buyer-Supplier trust, as perceived by suppliers.

Besides the non-finance related antecedents examined, the proposed conceptual strategic framework makes an effort in also researching the link between the two important BSR quality elements (BSR satisfaction and BS trust) and two finance related antecedents, which are the credit worthiness of the buyer, as perceived by suppliers, as well as the working capital benefit that suppliers believe they enjoy due to their collaboration with the specific buyer, within the context of a RF program adoption invitation by a large buyer and the assessment for potential adoption by the invited suppliers. Regarding **buyer credit worthiness**, according to Seifert et al. (2013) trade credit offered by suppliers to buyers is a regular component of market transactions and constitutes a major source of short-term financing. As Wilner indicates (2000), the interest rate charged on trade credit (offered by suppliers in the form of discount for early invoice payment by buyers) varies with the terms of sale and the degree to which they are violated. One of the most common trade credit terms of sale is "*2 - 10 net 30*", defined as a two percent discount offered if payment occurs within ten days of invoice issuance, otherwise the net or full purchase price is due to be paid in thirty days. Estimates suggest that more than 80% of business-to-business transactions in the UK are made on credit (Wilson & Summers, 2002), approximately 80% of US firms offer their products and services on trade credit (Tirole, 2006), while large, non-financial businesses in the US generate 15% of their financing from accounts payable with small businesses relying even more on it (Elliehausen & Wolken,1993; OECD, 2006). Internationally, these levels can be even higher and trade credit exceeds, by far, short-term bank credit (Rajan & Zingales, 1995; De Blasio, 2005). Moreover, the average level of trade credit in

use (which directly affects accounts receivable), varies significantly from country to country, industry to industry, and customer to customer (Ng et al., 1999; Wilson & Summers, 2002; Seifert & Seifert, 2011). Such an extensive finance phenomenon with a high variety of terms designed and implemented across the business world is not only raising many practical management questions (such as how suppliers assess buyers' trade credit worthiness, how they set or accept trade credit policies, which trade credit policies are optimal, or at which point in time it is optimal to pay or get paid invoices), but also led academic researchers from various domains to analyze trade credit from different perspectives. Due to the nature of the subject, scholars from finance have contributed the most to the specific research (Petersen & Rajan, 1997), with economics and marketing researchers giving considerable attention as well. However, a growing number of operations management researchers has relatively recently begun to investigate the interface between operations and finance (e.g. Birge et al., 2007; Protopappa-Sieke & Seifert, 2010; Gupta & Dutta, 2011; Kouvelis & Zhao, 2012). Specifically for trade credit, as Seifert et al. indicate (2013), for more than 30 years scholars have been actively researching the reasons why firms offer it and while the issue is still far from being resolved, researchers have categorized motives between supply-side and demand-side ones. On the supply side, as it is the case of my research context where suppliers offer trade credit to their large retailer and, theoretically speaking, they should be concerned about his credit worthiness level, the finance literature has identified six major motives: **(1)** capital access (Schwartz, 1974), **(2)** product market position (Summers & Wilson, 2003; Van Horen, 2007; Fabbri & Klapper, 2008), **(3)** price elasticity (Petersen & Rajan,

1997; Brennan et al., 1988), **(4)** collateral value (Frank & Maksimovic, 2005), **(5)** credit information (Emery, 1984; Jain, 2001), and **(6)** non-salvageable investment (Smith, 1987).

In relation to **BSR satisfaction** specifically, the credit worthiness of a buyer, which is defined as the degree to which a buyer is capable and willing of following all trade credit terms and conditions that have been agreed upon between the two parties, is considered to be an important factor of his overall supplier-perceived reliability level and, as indicated by Huttinger et al. (2014), buyer reliability is clearly considered as the most important influencing factor of BSR satisfaction. This argument is further supported by other research studies conducted (e.g. Wong, 2000; Soetanto & Proverbs, 2002; Burt et al., 2002; Maunu, 2003; Essig & Amann 2009; Meena & Sarmah, 2012), the results of which indicate that buyer adherence to oral or written BS agreements, rules and procedures, including timely payment of the goods or services and agreed-upon payment practices, lead to supplier satisfaction. Regarding **BS trust**, as argued by Hill et al. (2009), any type of supplier-perceived unethical behavior by the buyer is negatively associated with the supplier-perceived trust towards this buyer. Considering that such an unethical behavior could also be the case where a buyer is not adhering to the trade credit terms and conditions agreed upon with his suppliers (thus, not being creditworthy, as perceived by his suppliers), an argument can be made that supplier-perceived trade credit worthiness of his buyer is positively associated with BS trust. In addition, this argument is further supported by the research conducted by Guiso et al. (2004) who point out that the decision of a supplier to offer trade credit to his buyer depends not only on a

legal contract's terms and conditions as well as its enforceability, but also on the extent to which the supplier trust his buyer (a form of social capital). From the financial aspect, studies indicate that suppliers may be more willing to offer longer trade credit terms to large, investment grade buyers due to a higher level of trust (Klapper et al., 2012), while firms that are considered more creditworthy and have some buyer market power, receive larger early payment discounts from their suppliers (Giannetti et al., 2011). Therefore, supplier perceived credit worthiness of his buyer should play an important role in BS trust. Based on the examined research results concerning the importance and extensive use of trade credit within BSRs, the strong incentives for suppliers to be offering it, the suppliers' interest regarding the trade credit worthiness level of their buyers (to whom they are offering trade credit) and subsequently the link which exists between supplier perceived credit worthiness of the buyer and the two important BSR quality elements, my 3rd hypothesis argues that the level of credit worthiness of a large retailer, as perceived by suppliers who have been invited to adopt a RF program and may do so following an assessment, is positively associated with BSR satisfaction and BS trust:

Hypothesis 3a-b: A buyer's credit worthiness level has a significant positive effect on both Buyer-Supplier relationship satisfaction and Buyer-Supplier trust, as perceived by suppliers.

Regarding the second finance related antecedent, which is the perceived **working capital benefit for each supplier** that results due to the collaboration with the specific large retailer (such as, for example, a higher level of less risky

currents assets due to a higher level of sales with a larger, financially stronger, buyer, a relatively lower inventory to sales ratio; and/or a faster conversion of account receivables into cash through relatively better payments terms), there are certain aspects of it which require further explanation. From a financial aspect, net working capital (NWC), also referred to as working capital, is defined as the result of current assets less current liabilities (Ross et al., 2015). The term "*current*" in this context usually refers to a time horizon of a year or less (Emery et al., 2006). Current assets are mainly calculated by adding inventory, accounts receivables, marketable securities, and cash and bank balances figures, while current liabilities include figures of accounts payable, notes payable, current accruals, as well as other current liabilities (Scherr, 1989). The management of the working capital includes all aspects of the administration of current assets and liabilities (Emery et al., 2006), while its effectiveness and efficiency depends on the level a company can minimize the capital tied up in its operations by reducing current assets, extending current liabilities, or both, and, as a result, improve its net cash flow position and/or profitability, in absolute and/or relative terms (Lyroudi & McCarty, 1993; Lazaridis & Tryfonidis, 2006; Teruel & Solano, 2007; Gill et al., 2010), ceteris paribus all other financial and operational parameters. As Hofmann and Kotzab (2010) indicate, most companies require a certain level of working capital in order to successfully manage variable and somewhat unpredictable financial inflows and outflows. Challenges such as disconnected supply chain processes, excessive inventory, inadequate or violated trade credit terms, and suboptimal loan agreements require higher working capital than necessary. While the last two originate from the financial

field, connecting and synchronizing the respective supply chain activities and/or reducing inventory belong to the operating field. From a company point of view, for a single supplier the overall working capital management target usually tends to be the following: to have less capital tied up in non-productive inventory, shorten the collection period for accounts receivables and stretch cash payments for accounts payable as far as possible (Farris & Hutchison, 2002). Furthermore, once a supplier has contractually agreed upon credit terms with his buyers, he may still face a decision problem regarding actual accounts receivables collection and account payments because in cases where accounts receivable are overdue, stricter collection may damage BSRs, while in cases where excessive accounts payable exist, early payment may reduce liquidity and create unnecessary financial costs. The finance literature has focused on these decision problems primarily by correlating measures of working capital management with measures of firm profitability (Shin & Soenen, 1998; Wang, 2002; Fisman & Love, 2003; Deloof, 2003; Teruel & Solano, 2007; Cull et al., 2009). Most scholars conclude that early collection has a positive effect on cash flow and/or profitability, while the consequences of early payment are controversial. Although theory suggests that early payment should have a negative effect on cash flow or profitability, certain studies' data suggest the opposite (e.g. Deloof, 2003) where the argument is that this observation may be a consequence of endogeneity (payment delay affecting profitability but, at the same time, profitability also affecting payment delay).

In relation to **BSR satisfaction**, as Hofmann and Kotzab (2010) indicate, on the one hand, suppliers want to develop long term relationships with the

buyers, which are usually based on a relatively higher level of BSR satisfaction, but on the other hand these suppliers are often seen as a cheap source of cash. As such, when suppliers are confronted with unanticipated volatile demand and extended terms of payment imposed by buyers, their working capital is negatively affected and consequently their perceived BSR satisfaction is reduced. As a consequence of that, suppliers usually respond by either increasing the unit price or reducing quality, or service level, offered in the long term to those buyers (Pike et al., 2005). Regarding **BS Trust**, as it has been indicated by various research studies (e.g. Sako & Helper, 1998; Dyer & Chu, 2000), buyers who provide any type of direct and indirect beneficial assistance to their suppliers are perceived by them as trustworthy. Moreover, long-lasting relationships between a buyer and its suppliers, which are based on trust among other important factors, are positively associated with joint competitive advantages as well as financial performance improvements / benefits (Jap, 2001; Palmatier et al., 2007), a type of which could be a form of working capital benefit. As Handfield & Bechtel (2002) and Monczka et al. (1998) highlight, in BSRs where trust is high, a buyer can provide suppliers with guarantees of future volumes and prices, resources, and technical assistant, which could be linked to suppliers' cost reduction. A reduced working capital cost for the supplier could be such a cost reduction, which is positively associated with the level of BS trust. Furthermore, in support of the link between BS trust and financial performance benefit, research has also indicated that, ceteris paribus other related parameters, a higher level of BS trust, as a major BSR quality dimension, is positively associated with a higher level of sales for the supplier within that BSR over time (Huntley, 2006; Zaefarian et al., 2016).

Based on the research results examined regarding the importance of working capital as a major financial performance element for the suppliers, the benefits which could be realized for the suppliers through effective working capital management derived by the collaboration with their buyers (e.g. a higher level of less risky currents assets due to a higher level of sales with a large buyer, a relatively lower inventory to sales ratio, and/or a faster conversion of account receivables into cash through relatively better payments terms), as well as the potential link between working capital and the two examined BSR quality components, I argue that the supplier perceived working capital benefit due to the overall collaboration with the specific buyer, who has invited them to adopt a RF program and they may do so following an assessment, is positively associated with BSR satisfaction and BS trust:

Hypothesis 4a-b: The higher the supplier's working capital benefit due to the overall collaboration with a buyer, the higher the Buyer-Supplier relationship satisfaction and Buyer-Supplier trust, as perceived by suppliers.

3.3 Antecedents of Reverse Factoring Program Attractiveness (Ex-ante SCF program adoption assessment by Suppliers): Hypotheses

The third major principle of my conceptual model is that BSR quality (as captured by BSR satisfaction and BS trust and driven by the four, common, non-finance and finance related antecedents), among its potential relational and performance outcomes and/or impact, is associated with the SCF program adoption assessment suppliers conduct, following SCF program adoption invitation and presentation by the buyer. More specifically, I argue that the invited

suppliers are assessing the RF program on an ex-ante basis, where they assess the **attractiveness level of a RV program** before they adopt and/or maintain it, and on an ex-post basis, where they assess the **risk of opportunistic behavior from the buyer**, following a potential adoption.

BSR quality in general, as reviewed by Athanasopoulou (2009), has been shown to provide various performance as well as relational benefits. For example, it has been shown to be positively associated with higher operational performance (Fynes et al., 2004; 2005; Nyaga & Whipple, 2011), market and financial performance (Carr & Pearson, 1999; Autry et al., 2008), as well as capabilities development (Corsten & Kumar, 2005). Moreover, Auh and Shih (2005) show that higher BSR quality leads to more loyal customers in a business-to-business (B2B) context, while Narasimhan and Jayaram (1998) found that higher BSR quality leads to superior operational performance. Additionally, Krause et al. (1998) in their study of reactive and strategic supplier development found that not only did the strategic focus on supplier development bring operational benefits such as shorter order cycle times, higher quality levels, and increased delivery reliability, but it is also important as a source of competitive advantage to firms with more certainty and continuity within the supply base. Moreover, the link between BSR quality and performance is very apparent in Uzzi's work (1997) where he indicated that relationships within the apparel industry are characterized by trust and personal ties, rather than contracts, which makes expectations more predictable. Furthermore, embedded BSRs (characterized by trust, well-communicated information sharing and joint problem-solving attributes) lead to many advantages over contractual BSRs,

including the ability to adapt to unforeseen changes, identifying and producing coordinated solutions to organizational problems, reducing monitoring costs or producing better economic outcomes (Fynes et al., 2008; Shang et al., 2016).

Regarding the **RF program attractiveness** level, as perceived by the suppliers' side, a recent literature review on the general subject of attraction / attractiveness (Mortensen, 2012) divides relevant research into three areas: **(1)** attractiveness in the development of BSRs; **(2)** buyer attractiveness to suppliers; and **(3)** attractiveness in portfolio and key account management. Moreover, a general definition of attractiveness within the above context is the following: *the perception of the ability and likelihood of one entity (in my case, the buyer through the RF program offering) to contribute to the other entity's business (in my case, the supplier who is considering the adoption of the RF program offered) in a mutual relationship* (adapted based on Makkonen et al., 2016). In relation to the first research area, BSR development related studies link attractiveness with concepts such as perceived or expected rewards and benefits (e.g., Dwyer et al., 1987; Harris et al., 2003; Huttinger et al., 2012) as well as value (Wilkinson et al., 2005; Hald et al., 2009). These studies encompass tangible, intangible, macro-microeconomic, and social entities as sources of rewards, costs and value that drive the level of attractiveness. Dwyer et al. (1987) and Hald et al. (2009) emphasized past experienced outcomes gained in mutual interaction and the relative performance of the current BSR with regard to other potential relationships and actors. In addition to past outcomes and performance, Harris et al. (2003) adopted a more dynamic perspective by placing an explicit emphasis on the BSR's potential future and its expected outcomes. In relation to the second

research area, attractiveness is used as a buyer's marketing / interaction strategy that aims to increase supplier dedication to the buyer, compared to the supplier's other customers, and it is linked with concepts such as supplier satisfaction and preferred customer status (Schiele et al., 2012), as well as the supplier's direct and indirect value (e.g. Smals & Smits, 2012). Therefore, supplier satisfaction and value, and the preferred customer status are considered the intended outcomes of a buyer's actions when trying to build attractiveness in the eyes of the supplier (e.g. Schiele et al., 2012; Huttinger et al., 2012).

Regarding the link between **supplier-perceived BSR satisfaction** and **SCF program attractiveness** in particular, research findings derived by the examination of generic buyer/customer attractiveness, indicate that a buyer is perceived as attractive when a supplier has a positive expectation towards the BSR (Schiele et al., 2012). As such, reaching a high level of supplier satisfaction is positively associated with suppliers' wiliness to contribute their best (Wong, 2000) or make any relational investments that improve the BSR (Pulles et al., 2016). Consequently, as supplier-perceived generic buyer attractiveness is determined by: **(1)** a buyer's ability to provide higher economic benefits (Harris et al., 2003); **(2)** potential value creation for suppliers (Mortensen, 2012); **(3)** the level of different costs of servicing/collaborating with a specific buyer (Ramsay & Wagner, 2009); and **(4)** the buyer's level of operational excellence in areas such as risk sharing and forecast reliability (Ramsay & Wagner, 2009; Tanskanen & Aminoff, 2015), as well as operational processes and procedures (Huttinger et al., 2014; Tanskanen & Aminoff, 2015), a SCF program attractiveness should be positively associated with BSR satisfaction, as perceived by the suppliers. This

argument is further supported by the examination of other types of adoption by suppliers, such as the technology adoption of electronic data interchange (EDI), where the suppliers' adoption assessment is driven by positive BSRs (Clemons & Row, 1988; Premkumar & Ramamurthy, 1995; Premkumar et al., 1997**;** Huttinger et al., 2012), among other critical parameters such as: **(1)** relative advantage offered by such an adoption; **(2)** compatibility with existing supplier operations and adoption complexity (Tornatzky & Klein, 1982; Grover, 1993; Premkumar et al. 1994; Rogers, 1995); **(3)** as well as all types of adoption cost (Bouchard, 1993; Sriram et al., 2000; Huttinger et al., 2012). In the case of a potential SCF program adoption, one of the major relative advantages highlighted is the net (after all types of adoption costs) financial benefit of improved and relatively cheaper supplier liquidity, compared to the state where there is no SCF program adopted and the supplier may be facing limited access to external short-term financing, higher weighted average cost of capital or credit risk due to the agreed upon payment terms and conditions with the specific buyer or even a repeated delay of invoice payments (Hofmann & Kotzab, 2010).

For the case of **invoice payment delays** specifically, according to Wong (2000), Soetanto & Proverbs (2002), Maunu (2003), and Essig & Amann (2009), timely payment of the goods or services by the buyer, payment practices and receiving method of goods directly influence the satisfaction of suppliers, while Verhoef et al. (2001) have argued that a problematic payment policy followed by the buying firm can result to cross-selling by the suppliers. On the contrary, a beneficial or at least consistent payment/finance policy improves a buyer's overall reputation/image in the suppliers' market (Maunu, 2003) and it leads to more

satisfied suppliers and better coordination and corporate image (Meena & Sarmah, 2012). Considering the above, I argue that any invoice payment delays (measured as the days a buyer is delaying, on average during a fiscal year, in paying invoices to the supplier) that may increase both the supplier's weighted average financing cost as well as the credit risk, should have a moderating impact on the hypothesized positive association between BSR satisfaction and SCF program attractiveness, in the sense that payment delays make the program's supplier-perceived relative advantage/benefit even higher. Based on the above research findings and indications, within the context of a RF program adoption invitation by a large buyer and potential adoption by the invited suppliers, my 5th hypothesis is the following:

Hypothesis 5a-b: The level of Buyer-Supplier relationship satisfaction has a significant positive effect on Reverse Factoring program attractiveness, as perceived by suppliers. This effect is positively moderated by the buyer's payment delay per invoice, in such a way where for any given level of Buyer-Supplier relationship satisfaction, a higher level of average invoice payment delay by the buyer increases the supplier-perceived Reverse Factoring program attractiveness.

The research conducted regarding the SCF program attractiveness highlights that the suppliers' potential adoption assessment is influenced by the financial status of the supplier's company, such as the account receivables' volume (Iacono et al., 2015), and the respective net (after costs) financial improvement such an adoption could provide in relation to the company's working

capital goals (Liebl et al., 2016; Vliet et al., 2015), besides any other external factors such as competition intensity and interest rates' level (Iacono et al., 2015), especially in periods of macroeconomic financial crisis. According to the empirical research conducted by Campello et al. (2010), following the 2008 financial crisis, due to the reduced ability to borrow and the scarcity of relatively cheap external financing, small-to-medium enterprises were underinvesting. As a result, they had to investigate across their financial supply chain for opportunities to improve working capital management and subsequently cash flow optimization in order to enhance their net cash position (Lekkakos & Serrano, 2016). Considering that a potential RF program adoption could unlock more than 10% of the supplier's working capital (Lekkakos & Serrano, 2016), then for suppliers where their cash position is relatively weaker, the RF program should be perceived as more attractive.

From a finance theory perspective, the argument of cash constrained suppliers considering the RF program as relatively more attractive (compared to non-cash constraint suppliers), can be further supported by the pecking order theory of capital structure (Myers & Majluf, 1984) which implies that due to asymmetric information and signaling problems associated with external funding, companies prefer to employ internal financing first, if that is available (e.g. retained earnings), and then when external financing is necessary, debt (short or long-term) is preferred over equity which is considered the last option due its relatively higher cost (Sunder & Mayers, 1999; Harrison & Widjaja, 2014). Furthermore, according to additional empirical research regarding pecking order theory, results indicate that companies' market to book ratio and profitability are

negatively correlated with the level of debt (Rajan & Zingales, 1995). These findings support the theory in the sense that more profitable companies, which have the option of financing their operations and investments internally, use less external financing in the form of debt, compared to less profitable companies. This argument is further supported by research studies conducted by Titman & Wessels (1988); Graham (2000); Antoniou et al. (2008); De Jong et al. (2008); and Akdal (2010), among others. During the period where our primary research was taking place (2009), the Polish economy was recording an average estimated cost of equity of 11.3%, derived by an average market risk premium of 5.7% (Fernandez & Campo, 2010) and an average risk-free rate of 5.6% (Michalak, 2012) based on a CAPM estimation (Sharpe, 1964; Lintner, 1965). Moreover, the average bank interest rate charged (for short and long-term bank financing) to the sample of the Polish suppliers surveyed was approximately 5.5%, while their respective average cash ratio (measured as cash divided by short-term debt) was at 8.5% with the indicative average cash holdings ratio of Polish companies being within the range of 6% to 11% (Dudley & Zhang, 2016). Therefore, one would expect from the suppliers to act according to the pecking order theory and finance their operations initially with available (internal) cash, then, for those relatively more cash constrained suppliers, to use the least expensive, short or long-term, form of bank debt and, as a last resort, to use additional shareholders' equity which was the most expensive source of financing at the time.

Furthermore, one would also expect that suppliers who were not able to cover their financing needs through internal cash holdings, they would be

interested in potentially adopting a SCF program as it would be allowing them to reduce the net cost of external financing (provided by the bank due to the SCF program adoption), their second most preferred option, according to the pecking order theory and available information about the alternative financing sources' cost at the time. It should also be noted that, on a microeconomic level, as Itzkowitz (2013) indicates, suppliers in relatively stronger BSR relationships (as measured by the percentage of sales to the major buyers) hold more cash than firms not in such BSRs, ceteris paribus. This suggests that strong BSRs induce greater risk to suppliers which makes them hold a higher level of cash to offset that perceived risk. Finally, on a macroeconomic level, research results show that the effect of trust on cash holdings is strongest in firms located in countries with weak institutions as well as in firms with high information asymmetries and low levels of private trust between insiders and outside shareholders (Dudley & Zhang, 2016). Based on the research findings above, within the context of a RF program adoption invitation by a large buyer and potential adoption by the invited suppliers, my 6th hypothesis relates to suppliers' cash ratio and it is the following:

Hypothesis 6: The higher the level of a supplier's cash ratio, the lower the level of supplier perceived RF program attractiveness.

3.4 Antecedents of Buyer Opportunistic Behavior (Ex-post SCF program adoption assessment by Suppliers): Hypotheses

As presented in detail in the previous section, based on the third major principle of my conceptual model, **BR trust**, as the second major examined element of BSR quality besides BSR satisfaction, is associated with the SCF program adoption assessment process suppliers conduct. More specifically, I

argue that, besides the ex-ante assessment invited suppliers conduct, they are also assessing the RF program adoption on an ex-post basis, where they consider what is the **risk of opportunistic behavior from the buyer**, following a potential adoption. In other words, they not only consider how attractive the RF program is (ex-ante assessment) but also if and to what extent the behavior of the buyer will become opportunistic following potential adoption (ex-post assessment) in terms of demands such as further price reduction, product codes' supply exclusivity, further extension of invoices' payment period, and/or any other requests which may be negatively altering or violating any commercial agreements in place before the RF program adoption.

Concerning the **risk of buyer opportunistic behavior**, as the major ex-post assessment criterion driven by the examined antecedents of BS trust and supplier financial distress signaling fear, there are certain aspects which need to be highlighted. The potential control and reduction of opportunistic behavior in long-term inter-firm exchanges, such as BSRs, depends mainly in two types of perspectives: the economic perspective and the social perceptive (Luo, 2006; 2007). Economic perspective is fundamentally based on TCE (Williamson, 1985; 2005), which assumes that the participants in an economic transaction pursue self-interest on the basis of net benefit calculation. Because of that, opportunistic behavior is controlled by economic forces such as contractual governance (where responsibilities, rights, and penalties are defined) and managerial governance (where behavior and commitment is monitored by both sides). However, this approach, according to Luo et al. (2015), is incomplete as it does not fully address the risk of opportunism because firm behavior is also influenced by social norms,

since in long-term economic exchanges, transactions become gradually embedded in the social structure of the BSR (Granovetter, 1985). Because of that, social perspective, derived by SCT which states that actors in a socially embedded exchange follow social principles, dictates that potential opportunistic behavior could be controlled through social forces such as fairness / justice, trust, and dependency (Luo, 2006). This indicates that BS trust is associated with buyer opportunistic behavior as without sufficiently strong social forces, the collaborating entities may not reach cooperative resolutions to potential pressures, conflicts and/or disputes (Lumineau & Oxley, 2012), all of which affect the perception of potential or actual opportunistic behavior, if not resolved in a mutually satisfactory approach. This is especially valid in BSRs, where commitment to cooperation by each side may depend on different exchange characteristics (Kim et al., 2010). Furthermore, Luo (2006) differentiates between two forms of opportunistic behavior: strong and weak. Strong form of opportunistic behavior includes those actions that "*violate contractual norms (terms, clauses, and conditions) that are explicitly codified in the main body of a contract as well as in its various supplements signed in later stages*", whereas a weak form opportunism involves those behaviors that "*violate relational norms not spelled out in a contract but embedded in the common understanding of all members in a specific relationship, which consequently impair another party's interests*". A typical strong form of buyer opportunistic behavior relates to the trade credit terms and payment conditions and more specifically to the amount of each supplier's invoices which have not being paid on time by the buyer, based on the contractual agreement between them. Consequently, the **level of a**

buyer's overdue payments' amount to each of his suppliers (measured as a percentage of each supplier's sales) should play a moderating role between supplier perceived BS trust and risk of buyer opportunistic behavior. Based on the research insights concerning opportunistic behavior and its risk (the definition of which is provided in previous section), within the context of a RF program adoption invitation by a large buyer and potential adoption by the invited suppliers, my 7th hypothesis is the following:

Hypothesis 7a-b: The supplier's perceived Buyer-Supplier trust is negatively associated to the level of the supplier's perceived risk of opportunistic behavior by the buyer, following potential Reverse Factoring program adoption. This association is positively moderated by the level of overdue payments by the buyer, in such a way where for any given level of supplier's perceived Buyer-Supplier trust, a higher level of overdue payments increases the supplier perceived risk of opportunistic behavior by the buyer.

Both buyers and suppliers are monitoring their collaboration not only for any signals of weak or strong form of opportunistic behavior but also for **signals of operational or financial inefficiencies and problems which could affect their own operational or financial condition** (Connelly et al., 2011). Those signals could be produced through finance-related indicators such as trade credit terms' changes (Summers & Wilson, 2003), co-investments' level (Anderson & Weitz, 1992; Roden & Lawson, 2014), corporate leverage level (Ross, 1977) and/or operational indicators such as productivity recorded, on-time delivery, quality of services/products sold, and other (Jones at al., 2014). Within this context,

suppliers who are collaborating with a large buyer would not wish to provide any signal of financial distress which could negatively affect their collaboration or, even worse, trigger an opportunistic behavior by the buyer. Furthermore, such a potential, false or true, financial distress signal may also negatively impact suppliers' reputation and position in the market in relation to their suppliers, other clients, investors, competitors, banks, etc.

Over the years and depending on the focus of finance research studies, **financial distress** has been defined in many different ways. However, a typical definition states that for a company which is considered financially distressed, it is reasonably unlikely that it will be able to pay all of its debts as they fall due and payable within the immediately ensuing six months, or reasonably likely that it will become insolvent within the immediately ensuing six months (Deloitte, 2014). Other definitions of corporate financial distress are focusing on: **(1)** bankruptcy status driven by recorded operational performance (Frydman et al., 1985; Theodossiou et al., 1996; Ko et al., 2001; Altman, 2000; Platt & Platt, 2002); **(2)** layoffs, restructurings, or missed dividend payments (Lau, 1987; Hill et al., 1996); **(3)** interest coverage status (Asquith et al., 1994); **(4)** cash flow shortage for covering current maturities of long-term debt (Whitaker, 1999); **(5)** negative net operating income (Hofer, 1980); or **(5)** negative change in stock price (John et al., 1992). As Platt & Platt (2002) indicate, the major issue with all available definitions is that companies which are actually recording such a performance may not actually be in financial distress, as there may be other reasons as well, temporary and/or circumstantial, which cause that. Moreover, contrary to the bankruptcy event where the specific time of occurrence can be precisely

pinpointed through the respective filings, the point in time where a financial distress period is beginning, is difficult to be accurately identified.

In terms of the major reasons of corporate financial distress, these are the following: **(1)** high interest expenses, **(2)** poor operating performance in comparison to the other companies in an industry, and/or **(3)** and industry downturn (Asquith et al., 1994). According to one of the most famous finance theories, the trade-off theory, a company's capital structure is determined by trading off the tax benefit of leverage with the increased probability of incurring direct and indirect costs of financial distress and, ultimately, bankruptcy as a consequence of higher leverage (Hertzel et al., 2008). Direct costs of financial distress, which are relatively easier to measure, include legal, administrative and advisory fees that the company must pay. Indirect costs, such as opportunity costs, are incurred when a company can no longer carry on its daily operations as usual, which may include negative impact on company's reputation, lower demand for its products/services, lower pricing demanded by buyers, higher production or distribution costs imposed and tighter credit terms by suppliers, slower decision-making process in terms of investments, higher turnover in management positions, and other (Liou & Smith, 2007; Hertzel et al., 2008).

Concerning BSRs specifically, economic links to suppliers and buyers (customers) during financial distress are also central to theoretical and empirical work on capital structure. For example, in discussions of the trade-off theory, the actions of suppliers and customers of financially distressed companies are often cited as a source of indirect costs that can arise with forthcoming bankruptcy. Suppliers of financially distressed companies can impose costs by failing to

supply trade credit, backing away from entering into long-term contracts, delaying shipments, sourcing new customers and/or shifting sales away from the distressed company to other existing customers. On the other side of the supply chain, customers of distressed companies (buyers), may become distrustful of provided products' or services quality, have doubts about the continuity of supply and serviceability, and ultimately could reduce purchasing orders in terms of products' volume, value or importance (Hertzel et al., 2008).

Regarding financial distress and trade credit in particular, as Molina & Preve (2009) indicate, companies tend to increase the use of trade credit from their suppliers when they start facing profitability problems in a pre-financial distress situation, and provide fewer trade credit to their buyers (customers) when they face cash flow problems and enter full financial distress. In other words, they try to improve their working capital, by enchasing their current assets and current liabilities' management, with the end-target of improving their cash position. This argument is further supported by Shenoy & Williams (2017) who found that suppliers with a higher probability of financial distress, as measured by the Altman Z-score (1968), or greater financial constraints, as measured by the Hadlock & Pierce index (2010), have lower amounts of trade credit outstanding towards their buyers.

Finally, in relation to SCF arrangements in particular (such as RF), research results indicate that the negative relationship of financial distress and trade receivables could also arise if the distressed supplier sells its trade receivables through a factoring arrangement instead of directly reducing its trade receivables towards its buyer/s. When the financially distressed supplier sells its trade

receivables through a factoring mechanism, he drops the trade receivables from its balance sheet in exchange for cash (hence, enhancement of current assets). This effect on its balance sheet and the need for cash is the same as if the supplier directly cuts its trade credit to his buyers. Therefore, as it is argued by Molina & Preve (2009), the relation between financial distress and account receivables could be the same whether the supplier uses a factoring arrangement to collect the account receivables faster or directly reduces trade credit to his buyers (customers).

Therefore, considering the importance of a supplier being or perceived as financially distressed by its buyer as well as the potential implications of such a company status or perception (translated in an increase of any of the presented direct and indirect costs), suppliers who are invited to adopt a RF program may have a well justified fear that a RF program adoption could be perceived by the buyer as a signal of supplier financial distress. Consequently, considering that one of the most important potential implications of such a signal to the buyer is that his behavior may become opportunistic, following a potential RF program, the argument is that the fear of supplier financial distress signaling is positively associated with supplier-perceived risk of buyer opportunism. However, this association should be moderated by the **liquidity status of the supplier**. As current ratio is considered one of the three most widely used liquidity ratios (along with "*Working capital / Total Assets*" ratio and "*Quick*" ratio measured as current assets – inventory / current liabilities), measured as current assets (comprised mainly by cash & cash equivalents, accounts receivable, inventory, marketable securities, prepaid expenses and other liquid assets that can be readily converted

to cash) divided by current liabilities (comprised mainly by short term debt, accounts payable, and accrued liabilities) [Altman, 1968; 2000; Richards & Laughlin, 1980; Platt & Platt 2002], I use it as the liquidity moderator in my 8th and final hypothesis which is the following:

Hypothesis 8a-b: The supplier's fear of signaling financial distress to the buyer in case of a RF program adoption, is positively associated to the supplier's perceived risk of opportunistic behavior by the buyer, following potential RF program adoption. This association is negatively moderated by the supplier's current ratio, in such a way where for any given level of a supplier's fear of signaling financial distress, a higher current ratio reduces the supplier's perceived risk of opportunistic behavior by the buyer.

3.5 Control Variables: Supplier Company-Specific & Buyer-Supplier Collaboration-Specific

In an effort to also test in the conceptual framework and hypotheses developed for characteristics which are either supplier-company specific or buyer-supplier collaboration-specific, I have selected certain important control variables for the four major "RF program assessment framework" elements. So, regarding the two examined ex-ante RF program assessment elements (BSR satisfaction and RF Program Attractiveness) as well as the investigated ex-post ones (BS Trust and Risk of Buyer Opportunism), the supplier company-specific control variables tested for any association are: **(1)** the size of the supplier's company (measured by sales); **(2)** the age (measured by the years the company

is operating); and **(3)** the current ratio (measured by current assets divided by current liabilities).

Company size has been chosen as there is a significant number of research studies which indicate that there is an association between company size and capital structure (e.g. Hutchinson, 1995; Berger & Udell, 1998; Romano et al., 2000) as well as cash conversion cycle, measured as the length of time between cash payment for purchase of resalable goods and collection of accounts receivable generated by sale of these goods (Moss & Stine, 1993). Moreover, as Chittenden et al. (1996) note, the pecking order theory is particularly relevant to smaller businesses mainly because the costs associated with external finance are usually higher for smaller companies than they are for larger companies.

Regarding **company age**, it has been included as a control variable as there is evidence that a company's life cycle is linked with its capital structure (e.g., Berger & Udell, 1998; Romano et al., 2000). More specifically, as Dollinger (2007) indicates, sources of capital depend, to some extent, on whether a company is developing or maturing. In addition, Berger & Udell (1998) found that smaller companies in high-growth, high-risk sectors rely mostly on equity, whereas smaller companies in low-growth sectors rely mostly on debt finance. Furthermore, Bates (1991) found that when compared with older, more established companies, younger firms rely less on profits derived from sales. However, as companies grow and mature, different types of debt arrangements (first short-term, then long-term) become important until a firm is ready to enter

the financial markets and obtain outside equity (Van der Wijst, 1989; Berger & Udell, 1998).

Concerning **current ratio**, it has been chosen as one of the most representative company liquidity indicators (Altman, 1968; Richards & Laughlin, 1980). As Platt & Platt (2002) indicate, a company is more likely to suffer financial distress if it is recording a lower current ratio, while smaller firms with faster cash conversion cycle tend to have higher current ratios (Moss & Stine, 1993). Based on the findings above, I am testing those three chosen control variables for any effect on the major four elements of either the ex-ante or ex-post SCF program adoption assessment procedure by the suppliers, according to the conceptual framework proposed.

In relation to the strategic framework's element of RF program attractiveness in particular, two additional control variables have been tested: **(4)** supplier company leverage (measured as long-term debt to equity) and **(5)** bank financing cost (measured as the bank interest rate paid). Regarding **leverage**, as Rajan & Zingales (1995) indicate, the most relevant measure depends on the objective of the analysis. For example, the agency problems which are associated with debt (Jensen & Meckling, 1976; Myers, 1977) largely relate to how a company has been financed in the past, and more specifically on the relative claims on firm value held by debt and equity. Thus, this could be captured by the ratio of long-term debt to equity. Moreover, according to Platt & Platt (2002), a company which records a higher long-term debt to shareholders' equity ratio is more likely to suffer financial distress which means that, in such a case, its need for cheaper financing is increasing. Based on the above findings, this ratio is

included in order to test if the level of a supplier's company long-term leverage has any association with the RF program attractiveness. The fifth control variable has been chosen on the premise that besides the level of short term liquidity and/or long-term leverage a supplier's company is recording, the **cost of bank financing** (measured as the interest rate charged by the bank for any financing provided) should be an additional indicator to control for (Elliehausen & Wolken, 1993) based on the argument that a higher bank interest rate paid (which increases the weighted average cost of capital) should be positively associated with the supplier perceived RF program attractiveness.

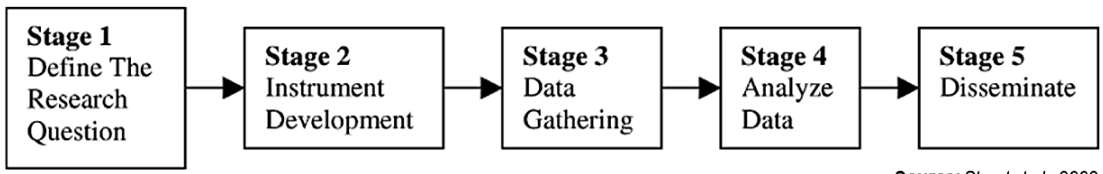
Besides the above five supplier company-specific control variables, the examined ex-ante and ex-post RF program assessment elements have also been tested in relation to three Buyer-Supplier Collaboration-Specific control variables which are the following: **(1)** the supplier's **sales dependency** to the specific buyer, measured as a percentage of total supplier sales contributed by the buyer (Zaefarian et al., 2016); **(2)** the **invoice payment delays** towards the supplier, measured as the days a buyer is delaying, on average during a fiscal year, in paying invoices to the supplier, based on agreed payment terms and conditions (Pike et al., 2005; Fabbri & Klapper, 2008; Seifert et al., 2013); and **(3)** the level of a buyer's **overdue payments' amount** towards the supplier, measured as a percentage of supplier sales (Pike et al., 2005; Fabbri & Klapper, 2008; Seifert et al., 2013). The main reason behind their choice is to check whether buyer (customer) dependency as well as major BS collaboration problems (which typically involve any supplier invoice payment delays in terms of duration and amount) are associated with any of the major ex-ante (BSR satisfaction and RF

Program Attractiveness) and ex-post (BS Trust and Risk of Buyer Opportunism) "RF program assessment framework" elements.

4.1 Research Methodology: Approach & Framework

The research methodology followed, in terms of framework, is based on five major process stages, as presented in **Exhibit 14** (Stuart et al., 2002). In the **first stage** of my research, I identified the phenomenon observed, highlighted the importance of my research focus area from an academic and business perspective, defined the derived research questions I would focus on, presented the theories which could support the derived research questions and examined hypotheses, and indicated the potential contribution of my research.

Exhibit 14: Research Methodology Framework - Five Major Process Stages



Source: *Stuart et al., 2002*

Then, during the **second stage**, the case was identified (a large global diversified retail and wholesale / cash & carry supermarket group that is offering a RF program to its suppliers who are operating in different sectors) upon which the research focused on. As case-based research represents the intersection of theory, structures and events, it is considered a scientific approach that attempts to ground theoretical concepts with reality. Moreover, according to Handfield and Melynk (1998), case study research is considered an appropriate research tool when the purpose is to empirically identify and describe critical variables as well as linkages between variables and causal understanding, as it is my research

case. Therefore, my case study, which is singular (one large buyer offering a RF program to his suppliers) and cross-sectional (many of the examined byer's suppliers, operating in different sectors, being invited to adopt a RF program offered), follows an empirical research design consisting of two instruments. Firstly, a supplier survey, the main instrument, which was developed and distributed to a representative sample of 200 suppliers[3] of Metro Group in Poland (on the sales divisions of Makro and Real) who have been invited to collaborate with the group's standard supply chain finance provider called MIAG in order to adopt, or not, a RF program, managed by MIAG and provided by Metro Group. Secondly, relevant (secondary source), available information (extracted by MIAG database), regarding the commercial and financial status of the suppliers replied as well as any other related transactional data recorded. The final questionnaire used was composed of 131 questions / items (71 of which were Likert items, based on a 7-level Likert scale), categorized in 6 sections and 35 subsections, as presented in **Exhibit 15 (in Appendix B)**. The number of variables collected in the database, derived by these two sources, is 180, composed of 131 items from survey questions replies and 49 items from secondary source data, as presented in **Exhibit 16 (in Appendix C)**.

[3] **N=200 with a response rate of 56.5%**: 113 suppliers who have either adopted or not the reverse factoring program offered by METRO Group, managed by the Group's standard SCF provider.

4.2 Research Methodology: Case Examined (Metro Group & its SCF Provider)

Regarding the selected case, Metro Group, otherwise known as Metro AG, it is a German global diversified retail and wholesale / cash & carry supermarket group based in Düsseldorf which was established in 1964 by founders Ernst Schmidt and Wilhelm Schmidt-Ruthenbeck. Currently it has the largest market share in the German market, and is one of the most globalized retail and wholesale corporations as it is the 4th largest retailer in Europe (after Carrefour, Schwarz Gruppe - Lidl & Kaufland - and Tesco) and the 7th largest globally[4]. Moreover, based on the consolidated financial statements as of fiscal year 2014 / 2015, as presented in **Exhibits 17a-e (in Appendix A)**, the group recorded sales of €59.2 bl. with a gross profit of €11.6 bl. (19.6% gross profit margin), €259 ml. earnings before taxes (4.4% EBT margin), €27.7 bl. of total assets (out of which €5.4 bl. in inventory, €702 ml. in trade receivables and €4.4 bl. in cash and cash equivalents), trade liabilities (accounts payable towards suppliers, vendors, etc.) of €9.6 bl. and non-current and current borrowings (working capital, bank loans, bonds, etc.) of €7.4 bl. Furthermore, the group operates three main sales divisions which, as of fiscal year 2014 / 2015, have performed as follows: **(1)** "Metro" and "Makro[5] Cash & Carry" which is a leading international player in

[4] **Ranked by 2013 group turnover in USD**. Source: *Global Powers of Retailing – Highlights. Deloitte Touche, 2015*.

[5] **Makro is an international brand of warehouse clubs (also called cash & carries)**: Its stores are not open to the general public (except in Belgium, Brazil & South Africa), but only to businesses which have to be registered members in order to gain entry to the stores. The first store opened in Amsterdam in 1968. In the following years more stores opened in the Netherlands and in several other European countries and, in 1971, South Africa. In the 1970s and 1980s Makro extended its operations to the Americas and Asia and then also expanded to the US in the mid-1980s. In 1989, Kmart bought the American locations, and converted most of them to Pace

wholesale trade that accounts for 50% of the group's sales (€29.7 bl.) with more than 760 wholesale stores in 26 countries, 112.836 employees, 20.000 food related and 30.000 non-food related stock keeping units; **(2)** "Media Markt" and "Saturn" which are consumer electronics retail chains that represent 37% of sales (€21.7 bl.), operating 808 and 199 stores in 14 and 5 countries respectively, with 64.935 employees in total and 100.000 stock keeping units; and **(3)** "Real" which is a hypermarket retail chain that accounts for 13% of the group's turnover (€7.7 bl.), operating 265 stores in Germany and 34 elsewhere, with 36.063 employees and 80.000 stock keeping units approximately.

In relation to the Polish subsidiaries more specifically, as of fiscal year 2014 / 2015, the group generated €1.56 bl. from the sales division of "Metro" and "Makro" (5.3% of the sales division global turnover) by operating 41 stores with 5.981 employees, and €977 ml. from the sales division of "Media Markt" and "Saturn" (4.5% of the sales division global turnover) by operating 79 stores with 5.035 employees. Compared to fiscal year 2009, where our survey took place, the group's turnover has been reduced by -9.6% (€65.5 bl.) influenced by global macroeconomic events as well as tougher competition. In relation to the Polish market in specific, in 2009 the sales division of "Metro" and "Makro" followed the same trend with the group sales by generating €1.83 bl. (-14.8% compared to the fiscal year of 2014-2015) and operating 29 stores with 7.026 employees. Moreover, the Polish sales division of "Media Markt" and "Saturn" generated approximately €830 ml. (-15% compared to the fiscal year of 2014-2015) by operating 53 stores with 5.225 employees, while "Real" sales division generated

Warehouse in 1990, while in 1998 Makro owner SHV Holdings sold the Makro stores in Europe to Metro AG.

€1.32 bl. in 2009, by operating 54 stores with 11.021 employees (a figure which cannot be compared to the fiscal year of 2014 / 2015 as during the period 2009 - 2015 the group decided to restructure its Polish operations). From the analysis above, it can be concluded that the selected company is considered representative of a large multinational supermarket group, while its Polish subsidiaries, where this research is based upon, are considered representative of the group's operations in terms of sales divisions and activities as well as financial performance. Furthermore, in comparison to the Top-10 retailers in 2009, as presented in **Exhibit 17f**, Metro Group is not only representative of globally leading retailers in terms of size and geographic coverage, but it was also recording a level of cumulative average sales growth (as measured by a 5Y CAGR of 3%), profitability (as measured by a net profit margin of 0.80%), and liquidity (as measured by the "Net Cash / Sales" and Current ratio of 6% and 0.82 respectively) which was within the range recorded by the other three globally leading retailers. As such, at the time, Metro Group's financial position and liquidity could be characterized as positive and broadly in line with the financial condition recorded by the largest competitors within the retailing/supermarket industry.

Exhibit 17f: Top-10 Global Retailers 2009 & Metro Group Comparative Financials

Retail sales rank (FY09)	Name of company	Country of origin	2009 group revenue* (U.S. $mil)	2009 retail sales (U.S. $mil)	2009 group net income* (U.S. $mil)	Dominant operational format	# Countries of operation	2004-2009 retail sales CAGR**
1	Wal-Mart Stores, Inc.	U.S.	408,214	405,046	14,848	Hypermarket/Supercenter/Superstore	16	7.3%
2	Carrefour S.A.	France	121,861	119,887	609	Hypermarket/Supercenter/Superstore	36	3.4%
3	Metro AG	Germany	91,389	90,850	724	Cash & Carry/Warehouse Club	33	3.0%
4	Tesco plc	U.K.	90,435	90,435	3,712	Hypermarket/Supercenter/Superstore	13	10.9%
5	Schwarz Unternehmens Treuhand KG	Germany	77,221e	77,221e	n/a	Discount Store	25	9.8%
6	The Kroger Co.	U.S.	76,733	76,733	57	Supermarket	1	6.3%
7	Costco Wholesale Corp.	U.S.	71,422	69,889	1,086	Cash & Carry/Warehouse Club	9	8.2%
8	Aldi Einkauf GmbH & Co. oHG	Germany	67,709e	67,709e	n/a	Discount Store	18	6.3%
9	The Home Depot, Inc.	U.S.	66,176	66,176	2,661	Home Improvement	5	-2.0%
10	Target Corp.	U.S.	65,357	63,435	2,488	DDS	1	6.8%

Source: *Deloitte, Consumer Business Report, 2011*

Metro AG Group comparative financials:
- 8% market share in terms of Top-10 global retailers' retail sales.
- 3% market share in terms of Top-10 global retailers' net income.
- Net profit margin of 0.80% within a range of 0.07% to 4.2%.
- 5Y (2004-2009) Sales CAGR of 3% within a range of -2% to 10.9%.
- "Net Cash / Sales" ratio of 6% within a range (of the Top-4 global retailers*) of 1.8% to 6.5%.
- Current ratio (current assets / current liabilities) of 0.82 within a range (of the Top-4 global retailers*) of 0.71 to 0.88.

**: According to the consolidated financial statements of 2009 (as presented in the Annual Reports).*

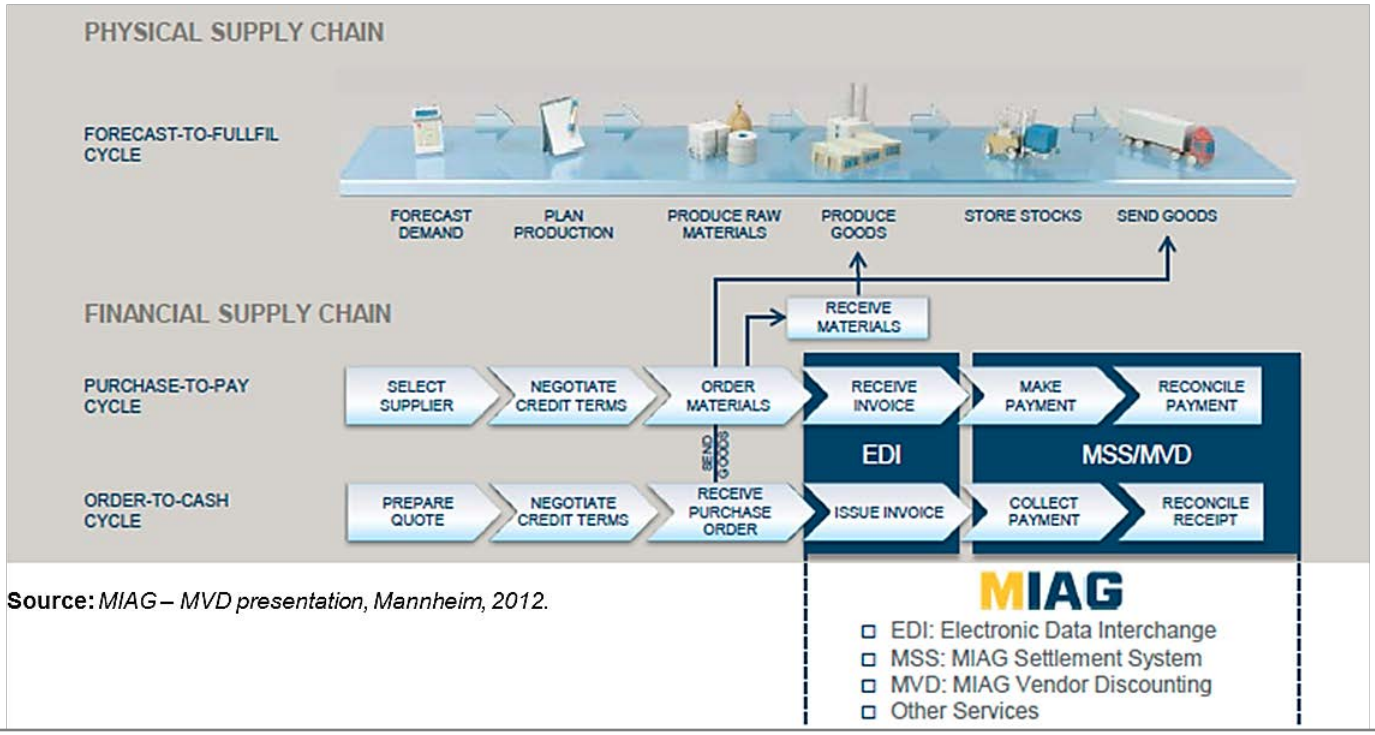
Moreover, in terms of SCF and more specifically Metro group's RF program activity and adoption representation, at the time, its Polish market was one of the strongest countries regarding MIAG's SCF program adoption. Nevertheless, despite MIAG's efforts in inviting and informing selected Polish suppliers regarding MIAG services in general and RF program's cost and benefits specifically, Metro group's local subsidiaries were experiencing the same phenomenon observed on a macro level, which is limited adoption of a RF program offered by a large buyer towards its suppliers (at the time, through MIAG, 491 Polish suppliers were contacted / invited / informed about MIAG services, 159 have signed a service contract or addendum - the precondition to do the KYC process - and only 66 had adopted the RF program offered by Metro group).

Regarding MIAG S.A., Metro's standard SCF provider, it is considered an integral part of the group's operations as the company provides payment

guarantee services, through a services contract, as well as vendor discounting services (also called MIAG Vendor Discount – MVD which is a SCF program that follows the RF principles) towards the group's suppliers worldwide. Moreover, it also handles national and international payment transactions for the group's sales divisions and their affiliated companies. The company was founded in 1974, its headquarters are in Baar, Switzerland, and currently operates in over 18 countries, one of which is Poland since 2007, with more than 85 professionals who provide a highly coordinated and well-balanced range of related services. MIAG has a base of 1.000 to 3.000 suppliers per country on average, it processes payments to more than 50.000 Metro Group suppliers globally, while on an annual basis, the company processes more than €45 bl. worth of annual supplier payments (for its group sales divisions and parent company), handles in excess of 35 ml. open items[6] and issues over 1.5 ml. payment orders and remittance advices. In relation to MIAG's operations and activities specifically, the company's role is to support Metro Group's financial supply chain stream by offering to the group's suppliers services which are triggered by certain procure-to-pay and order-to-cash processes within the group's physical supply chain, as presented in **Exhibit 18**.

[6] **Open item**: A record located in an accounting ledger that keeps track of a particular type of financial activity over a given period of time.

Exhibit 18: MIAG's Role: Supporting the Financial Supply Chain Stream



Source: *MIAG – MVD presentation, Mannheim, 2012.*

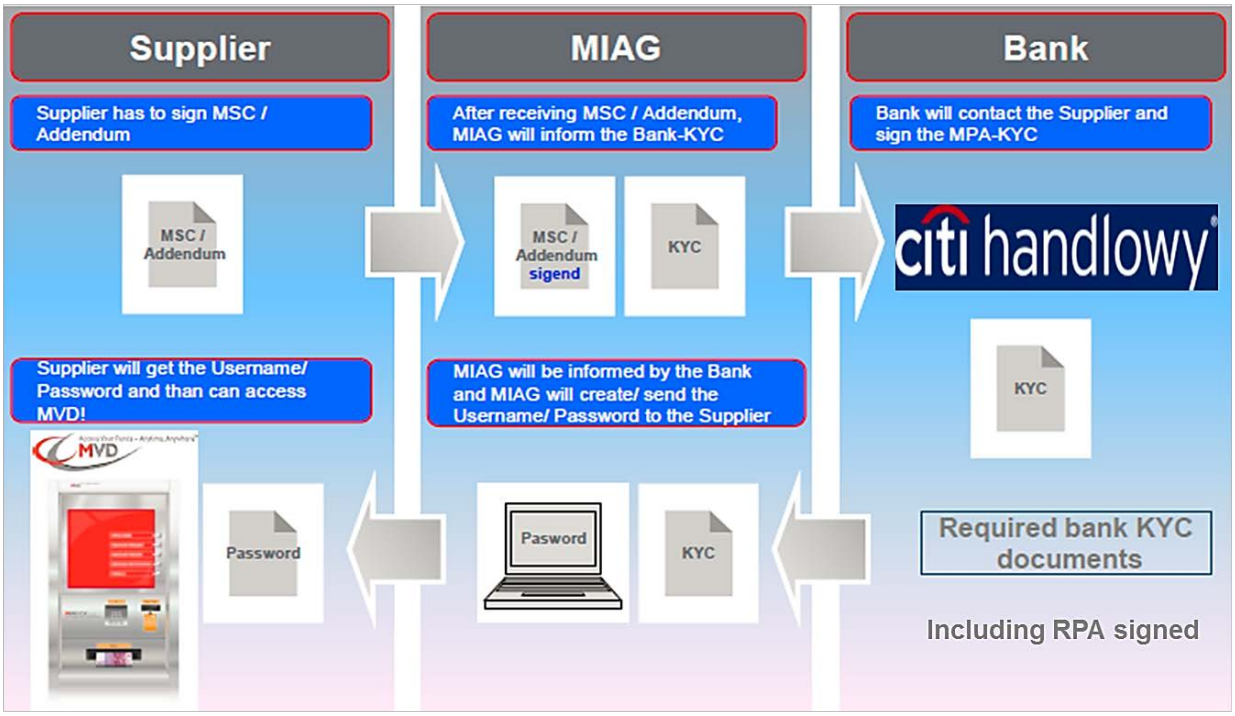
4.3 Research Methodology: SCF Services / Programs offered by SCF Provider (MIAG)

Regarding the specific services offered, through a MIAG service contract (MSC), the company is enabling Metro group suppliers to: **(1)** monitor through an electronic platform offered settlements on VAT-invoices issued by them in respect of payment for goods supplied to the Metro group sales divisions / companies; **(2)** compose reports on forecast of future accounts receivable; **(3)** analyze accounts receivable; **(4)** review and search of content of the internet-platform of MIAG for any additional data relating to settlements; **(5)** save on excel, analyze, forward, or print out, any reports, files, data received, as a result of review and search of content of the internet-platform of MIAG, for subsequent uses (such as required data by another factoring company and / or bank which

offers factoring services to the specific suppliers); **(6)** receive certain support in selling their accounts receivable against Metro group sales divisions / companies to a bank (suppliers' financial agent that offers 3rd party factoring), mostly by providing the suppliers' selected 3rd party financial agent required data / information in a transparent, accurate, and time & cost efficient basis. Additionally, following invitation by Metro group, suppliers are offered to adopt an additional service, offered through MIAG, which is a RF program named MIAG Vendor Discount (MVD). Suppliers adopting the MVD program can access an additional source of working capital financing, complementing their existing credit lines. By intelligently cashing out Metro receivables, suppliers improve their balance sheet ratings by reducing their DSO, a key credit benchmark. Most importantly, Metro / Makro suppliers are able to tap highly competitive financing rates based on Metro / MIAG's credit risk, which are lower compared to the rates suppliers could get on their own. Other MVD program related benefits include: **(1)** access to funds, anytime, anywhere; **(2)** 24/7 availability via MVD electronic platform; **(3)** payments released in a maximum of 1 business day; **(4)** off-balance sheet financing (in the sense that it does not add to the supplier's existing short or long-term debt obligations, as it is the case with bank loans); **(5)** ability to discount individual receivables; **(6)** time saving in invoice resolution; and **(7)** less administrative overhead. In relation to the maximum financing period under MVD, suppliers are able to discount confirmed invoices with a maturity between 5-120 days, while invoices maturing in more than 120 to maximum 180 days may be registered by MIAG, but discounting can only begin once the claim's residual period has fallen to less than120 days. The adoption of the RF program is subject

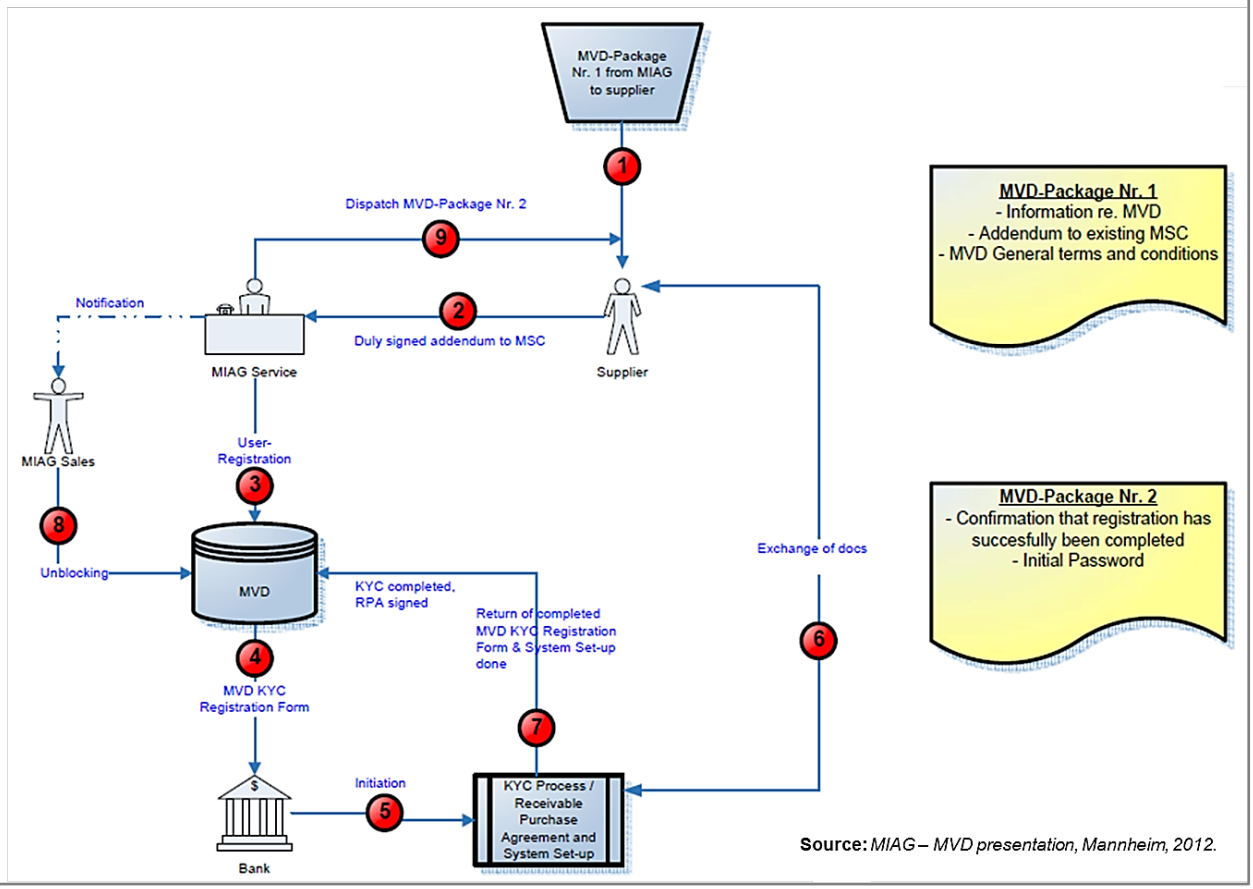
to an initial registration which could be completed following two conditions: **(1)** suppliers must already be using MIAG's services under a MSC, and **(2)** suppliers must be invited by Metro group to adopt such a RF program. If those two conditions hold, and suppliers decide to adopt the offered RF program, then they undertake to provide correct and complete data required by MIAG and for the purposes of the collaborating bank (which in this case is City Handlowy) for completing the registration process, as presented in **Exhibits 19a-b**.

Exhibit 19a: MVD (RF Program) Registration - Required Documents Flow



Source: *MIAG – MVD presentation, Mannheim, 2012.*

Exhibit 19b: Major Registration Process Steps of the MVD (RF program) offered



Source: *MIAG – MVD presentation, Mannheim, 2012.*

Suppliers that are completing the process, log onto the MIAG website their username and password and the MVD platform is initiated on a separate area of the MIAG internet-based platform. Moreover, these suppliers must complete a KYC process with the collaborating bank. The registration process is completed once the Receivable Purchase Agreement (RPA) between each supplier and the collaborating bank has been duly signed by both parties. The RPA sets out the legal parameters governing the MVD relationship between the suppliers and the bank, while MIAG cannot influence the acceptance of the supplier (invited to adopt the offered RF program) as a client of the bank and / or the acceptance of the RPA. This decision is at the exclusive scope of discretion of the bank. In relation to the RF program services per se, MIAG in its capacity as the central

settlement and payment entity of Metro group, gives registered suppliers access to a detailed list of all outstanding receivables and the date on which payment falls due, via the MVD electronic platform which gives suppliers the opportunity to offer specific receivables mentioned on this list to the collaborating bank for sale. Such a sale allows suppliers to reduce the payment targets agreed with the group's sales divisions / companies in order to meet any liquidity needs and/or to optimize their working capital. Regarding the RF program's pre-financing costs (costs charged by MIAG, excluding the ones charged for the RF financing, agreed with the collaborating bank), they comprise an MVD service fee for the usage of the MVD platform determined by MIAG as a percentage of the underlying receivable and are published for each transaction on the electronic platform. The suppliers, by selecting certain receivables and placing the sale offer on the platform, based on the RF program terms and conditions agreed, acknowledge the reported MVD fee as binding. This fee is invoiced by MIAG and deducted from the pre-financing payment and because of that MIAG is authorized to enter into agreements with the group's sales divisions / companies and / or the collaborating bank regarding the collection of the MVD fee and / or deduction from the receivables to be pre-financed.

As far as the RF financing cost agreed between the suppliers and the collaborating bank, it is based on an interest rate plus a market premium for covering the bank's costs and risks. Moreover, the suppliers can pre-calculate the total costs for their account receivables to be pre-financed through the RF program (RF pre-financing and financing costs) on the MVD electronic platform where the receivables selected for pre-calculation are immediately sent to the

bank as an order and they are binding to the suppliers once they have been accepted by the company. Furthermore, the pre-financing of receivables submitted to the bank as an order via the MVD platform is processed by the bank within one working day and confirmed to the suppliers. Then, the total MVD order with all its details is sent to the supplier as a PDF document via e-mail. From the analysis above regarding my case study (Polish Metro group and MIAG), the services offered as well as the processes followed between the group, its suppliers, MIAG, and the collaborating bank, it is clear that Metro group's Polish suppliers, in relation to the RF program, could be divided into three categories: **(1)** those that have not adopted any type of MIAG services; **(2)** those that have signed the MIAG MSC and use the six services presented above; and **(3)** those who have adopted the RF program, named MVD as a seventh service, in addition to the other services offered under MSC.

4.4 Research Methodology: Questionnaire Design (Items, Measures & Description)

The development of the research's primary instrument, the survey, was derived from items which have either been selected and / or adjusted from several sources reviewed (e.g. Heide & John, 1992; Heide & Miner, 1992; Kumar et al.,

Exhibit 20: Metro Group Polish suppliers interviewed during preliminary survey formation

Company	Executive Name	Department / Position	Sector	Size (Turnover)	MVD Program Adopter
1. Expo	Jariusz Bielecki	Finance / Director	Household Appliances	Medium (€20 ml.)	Yes
2. BSG	Robert Sawicki	Finance / Director	Private Label Food	Small (€4 ml.)	Yes
3. Remode	Piotr Szmel	Finance / Director	Fashion	Small (€4 ml.)	Yes
4. Kapp	Hakan Haner	Finance / Director	Household Appliances	Small (€0,5 ml.)	No
5. Nestle	Jolanda Kalinowska	Finance / Senior Manager	Food & Beverage	Large global	No
6. P&G	Marcin Szalapski	Finance / Senior Manager	Beauty, Home Care	Large global	No

1992; 2011; Jap, 1999; 2001; Jap & Shankar, 2000; Wathne & Heide, 2000; Jap & Anderson, 2003; Wathne & Heide, 2004) or developed based on the requirements of my research scope and focus as well as the insights which were generated by a preliminary round of one-to-one supplier interviews where certain related issues were discussed. More specifically, during January of 2009, together with the Metro group's management, the following six suppliers who were collaborating with MIAG in Poland were selected (based on criteria of company size, MVD program adoption and sector), of which three were MVD program adopters and three were non-adopters, as presented in **Exhibit 20**.

Then, during February-April 2009, the interviews with the executive from each of them were conducted, based on an interview questionnaire designed, as presented in **Exhibit 21 (in Appendix A)**. The purpose of these preliminary interviews was to develop a framework for the full-scale survey questionnaire, in terms of sections and groups of items included per section, by better understanding the following: **(1)** major reasons of adoption or not MIAG services and MVD program in particular; **(2)** the relationship with "Metro Cash & Carry" or "Real"; **(3)** the relationship with MIAG; **(4)** the onboarding process and the relationship with the collaborating bank; **(5)** the perceived hard and soft costs and benefits of MIAG services and MVD program; **(6)** the importance of other drivers and factors, such as economic conditions as well as product and company specific parameters, related to MIAG services and MVD program assessment by the suppliers. From the interviews output, the responses were grouped based on the above categories and generated a summarized report which helped in proceeding to the actual development of the survey questionnaire used. Overall,

the interviews indicated a good relationship quality between suppliers and MIAG and a substantial interest in the MVD program offered by Metro group. However, certain barriers to adoption of MVD program were highlighted, grouped in six categories of reasons in favor and against adoption: MVD program specific, relational (between suppliers and MIAG, “Makro” & “Real”, collaborating bank), finance specific, company & product specific, and other important recorded reasons / comments, as presented in **Exhibit 22a-c (in Appendix A)**, with a tentative general conclusion that the adoption of the MVD program could be further improved by: **(1)** better “*selling*” and explaining the MVD program’s net benefits to the suppliers (perceived BSR satisfaction and information exchange related elements); **(2)** aligning goals, instilling trust and signaling righteousness (perceived risk of opportunism related elements); and **(3)** changing or adjusting some of the MVD program hard and soft features (e.g. the discountable amount charged by the collaborating bank, the MIAG electronic platform fees, the on-boarding process, etc.), particularly in light of the changes in the evolving economic climate.

Following the completion of the interviews and based on the analysis of the derived summarized output, the framework of my survey questionnaire was developed which is composed of six sections (see **Exhibit 15 in Appendix B**) as follows: **(1)** introductory text; **(2)** supplier information; **(3)** general relationship with “Makro” or “Real”, in terms of trust, goal congruence, sales & financial dependency, information exchange, credit worthiness, supplier distress signaling, and forced renegotiation / opportunistic behavior by the buyer; **(4)** general relationship with “Makro” or “Real”, in terms of supplier perceived BSR

satisfaction, working capital benefit, credit cost benefit, sales benefit, payments & business disputes issues, and payment terms; **(5)** MIAG services offering & supplier financial information, in terms of supplier perceived MIAG services satisfaction, attractiveness, performance, adoption pressure, economic climate impact, growth prospects impact, supplier's finance function savviness, bank's services attractiveness; and **(6)** supplier's financial condition.

Following the questionnaire's framework, I focused on the selection and development of the items included, adjusted and / or generated, the selection of items' scale measurement, the items' grouping per survey section / subsection, and the respective item codification. In relation to the selection of scale measurement used, it has been found that 5-point Likert items provide too coarse an estimate of moderator effects (Russell & Bobko, 1992), and they are outperformed consistently by 7-point Likert items in objective rank matches and subjective evaluations (Diefenbach et al., 1993). Moreover, 5-point items are more likely than 7-point items to cause attempts to violate the prescribed boundaries of an item (Finstad, 2010). Consequently, the 5-point items are more prone to contribute to inaccurate measures through subtle but repeated data loss, especially when utilized in an electronic, non-moderated format (as it is the format of my survey questionnaire). Additionally, 7-point Likert items have been shown to be more accurate, easier to use, and a better reflection of a respondent's true evaluation. When one considers previous research and how it stands on the balance between sensitivity and efficiency (Russell & Bobko, 1992; Diefenbach et al., 1993), the 7-point item scale may represent an optimum balance in survey development since it is sensitive enough to minimize interpolations and compact

enough to be responded to efficiently. Consequently, in light of these advantages (even when compared to higher-order items), it was decided to use 7-point item scale (1 "*strongly disagree*" to 7 "*strongly agree*") as it appears to be a reliable scale measurement solution for electronic questionnaires which is more likely to reflect a respondent's true subjective evaluation of such a questionnaire item than a 5-point item scale.

Regarding the items per se (grouped in each of the six sections of the questionnaire) in terms of selection or adjustment, generation, and codification, the first section is an introductory text providing information of how to answer the survey, where to send the replies and until when, assuring that all answers are confidential, and offering an incentive for replaying. The second section is composed of items related to typical supplier information, such as company name, respondent's name & contact details, years with the company and respondent's function (items 1_G_R_T to 14_L_S_T).

The third section includes the following eight groups of items related to: **(1) supplier perceived trust level** items (15_L_TB_R7 to 17_L_TB_R7) which have been adapted based on the items used and / or research findings by Morgan and Hunt (1994) in terms of successful development of relational exchanges, Zaheer et al. (1998) in terms of performance effects of inter-organizational and interpersonal trust, Geyskens et al. (1999) regarding the relationship of trust to non-economic satisfaction, conflict and commitment, Kwon and Suh (2004) concerning the social exchange and transaction cost factors affecting the level of trust, Johnston et al. (2004) in terms of the effects of supplier trust on cooperative relationship behavior, and Corsten and Kumar (2005) in terms of the moderating

effect of trust to supplier economic performance, perceived equity and capability development; **(2) supplier perceived goal congruence** items (18_L_GC_R7, 21_L_GC_R7, 27_L_GC_R7), modified based on the items used and/or research findings by Jap (1999, 2001) in terms of goal congruence effects on coordination efforts and idiosyncratic investments; **(3) supplier perceived dependence to the buyer** items (19_L_VD_R7, 25_L_VD_R7, 26_L_VD_R7), adapted based on the items used and / or research findings by Provan and Skinner (1989) in terms of the effect of inter-organizational dependence in BSRs opportunism, Kumar et al. (1995) concerning the effects of perceived interdependence on BSR conflict, trust and commitment, Joshi and Arnold (1997) concerning the impact of buyer dependence on buyer opportunism in BSRs, and Corsten and Felde (2005) regarding the relationship between dependence and trust and its impact on performance factors such as innovation, purchasing cost reduction and financial performance; **(4) information exchange** items (22_L_IE_R7, 23_L_IE_R7, 24_L_IE_R7), adjusted based on the items used and / or research findings by Heide and Miner (1992) in terms of the impact of information exchange on buyer-seller collaboration, Lusch and Brown (1996) regarding wholesaler and supplier information exchange level (relational behavior) and interdependency; **(5)** items related to the **supplier perceived credit worthiness of the buyer** (20_L_JO_R7, 28_L_JO_R7, 29_L_JO_R7), developed based on the research findings by Summers and Wilson (2002, 2003) in terms of the trade credit terms offered by small firms as well as the customer relationship motivations for credit terms' formation and granting; **(6) supplier perceived risk of distress signaling** items (30_L_DS_R7, 34_L_DS_R7, 38_L_DS_R7), developed based on the

research conducted by Platt and Platt (2002) concerning the prediction of corporate financial distress, Wilner (2000) regarding the exploitation of relationships (in the form of preferential trade credit terms) in cases of financial distress, Hertzel et al. (2008) in terms of the inter-firm linkages of financial distress along the supply chain, Sun and Li (2009) concerning financial distress early warning based on group decision making, and Molina and Preve (2009) in terms of trade receivables policy of distressed firms and its effect on the financial distress costs; **(7) supplier perceived risk of opportunistic behavior** (in the form of forced renegotiation by the buyer) items (31_L_FR_R7, 32_L_FR_R7, 33_L_FR_R7), adapted based on the items used and / or research findings by Wathne and Heide (2000) concerning the development of a conceptual framework of governance strategies for managing different forms of opportunism, Baiman and Rajan (2002) regarding the role of information and opportunism in the choice of BSRs, Jap and Anderson (2003) in terms of ex-post opportunism measures, Morgan et al. (2007) concerning focal supplier opportunism in supermarket retailer category management, and Hawkins et al. (2008) regarding antecedents and consequences of opportunism in BSRs; **(8)** items of **supplier perceived risk of lock-in situation / financial dependence** to the buyer (35_L_FL_R7, 36_L_FL_R7, 37_L_FL_R7), modified based on the items used and / or research findings by Buchanan (1992) regarding the role of dependence and symmetry in attaining organizational goals, Kumar et al. (1995), and Wathne and Heide (2000) concerning the supplier's fear of lock-in situation in relation to the buyer.

The forth section includes the following two groups of items related to: **(1) BSR satisfaction**, as perceived by suppliers, items (39_L_REL_R7 to 41_L_REL_R7), adapted based on the research items used and / or research findings by Jap (2001) in terms of collaboration satisfaction as a major relationship quality outcome of relationship conditions, Benton and Maloni (2005) concerning the effect of power relationships and supply chain performance to supplier satisfaction, and Essig and Amann (2009) in terms of the supplier satisfaction construct exploration as a factor of BSR quality; **(2) supplier perceived financial benefit of collaborating with the buyer** (in terms of working capital, credit cost, payment issues, and sales benefit) items (42_L_CFIN_R7 to 51_L_CFIN_R7), adapted by the items used and / or research findings by Summers and Wilson (2002, 2003) regarding market, firm, customer and demand characteristics affecting trade credit terms offered by small suppliers, and Beck and Kunt (2006) concerning the growth constraint imposed to SMEs by limited access to finance, and the important role of financial and legal institutions as well as innovative financing instruments for relaxing this constraint. Moreover, this section includes financial information in relation to current (2009) and historic (2004-2008) financial terms and conditions' items (52_L_TO_T to 70_L_PT_T), developed by the interviews' output as well as the research conducted by Klapper (2005; 2006) regarding the role of factoring and reverse factoring for financing SMEs, Wilson and Summers (2002), and Berger and Udell (2006) concerning a conceptual framework for analyzing credit availability issues experienced by small suppliers.

The fifth section of the questionnaire includes the following five groups of items related to: **(1) supplier perceived MIAG services attractiveness / competitiveness** items (71_S_MSC_R7 to 79_S_OVR_R7), developed by the interviews output as well as the research conducted by Klapper (2005; 2006) regarding important factoring and reverse factoring parameters considered by SMEs, and Vos et al. (2007) in terms of the observation that financial performance indicators (growth, return on assets, profit margin) are not necessarily determinants of SME financing activities (as might be expected in a "rational" risk–return environment) while social networks are important for SME financing and linked to the perceived SME added utility (also defined as SME "happiness" which relates to attractiveness); **(2) supplier perceived MIAG services adoption pressure** (80_S_VOL_R7 to 82_S_VOL_R7), developed by the interviews' output as well as the research conducted by Berger and Udell (2006) regarding the analysis of SME credit availability issues, Beck and Kunt (2006), concerning the observation that financial and legal institutions as well as innovative financing instruments play an important role in relaxing the growth constraint imposed to SMEs by limited access to finance, Kalish (1985) concerning a two-stage adoption process of new products, and Hart and Saunders (1997) regarding the importance of inter-firm relationship characteristics, such as power and trust, to the adoption and use of electronic data interchange; **(3) supplier perceived economic and business climate conditions** (83_S_CRI_R7 to 88_S_CRI_R7), developed by the interviews' output as well as the research conducted by Kumar et al. (1992) concerning the importance of environmental variables (economy, industry, market) to the

assessment of reseller performance from the perspective of the supplier, and Natarajarathinam et al. (2009) regarding the management of supply chains under different sources and scales of crisis; **(4) supplier perceived collaborating bank reputation** items (89_S_BAN_R5 to 92_S_BAN_R5), developed based on the research conducted by Weiss et al (1999) concerning reputation management as a motivation for deciding on sales unit structure, and De la Torre et al. (2010) regarding the finding that all types of banks are catering to SMEs, while large, multiple-service banks have a comparative advantage in offering a wide range of products and services on a large scale, through the use of new technologies, business models, and risk management systems; **(5) supplier perceived MIAG services performance** items (93_S_MIA_R7 to 103_S_MIA_R7) developed based on the research conducted by Klapper (2005; 2006), Berger and Udell (2006), and De la Torre el al. (2010) in relation to performance factors such as access, cost, and quality of services provided.

Finally, the sixth section of the questionnaire includes items related to corporate activity and financial status figures, such as company age, number of employees, percentage of export sales, existence of other factoring arrangement, percentage of financing cost for production, bank funding interest rate charged, sales level, accounts receivable, inventory, cash, long-term liabilities, accounts payable, short-term debt, equity, retained earnings, etc. (104_S_FOU_T to 131_S_FIN_T), which are typical indicators in relation to the corporate performance and financial condition of a supplier who may or may not have a SCF arrangement (Smith & Schnucker, 1994; Soufani, 2002; Summers & Wilson, 2002; Shepherd & Gunter, 2006)

4.5 Research Methodology: Sample of Suppliers & Data Collection

During the **third stage** of the implemented research methodology framework, the final survey was distributed to a sample of 200 suppliers of Metro Group in Poland (on the sales divisions of “Makro” and “Real” which, as previously stated, have been invited to collaborate with the group’s standard supply chain finance provider called MIAG in order to adopt, or not, a RF program, managed by MIAG and provided by Metro group) and the data gathering took place during the period of June – December 2009 where the collection of supplier responses was completed with a response rate of 56.5% (113 suppliers who have either adopted or not the RF program offered by Metro group, managed by the group’s standard SCF provider). Survey data was then matched with respective additional archival data per supplier, extracted from the MIAG database, and compiled as well as filtered in a SPSS Statistics database, where all relevant information per supplier is included. As presented in **Exhibit 23a-c (in Appendix C)**, our sample is composed of suppliers who are operating in 26 subsectors, with an average annual turnover of €38.6 ml. (2008 figures in EUR), average number of employees of 371, and an average company age of 18 years. Therefore, the suppliers’ sample cannot be considered sector biased as all retail sectors are represented to some degree, with the strongest representation being in the sector of dairy products (10.6% of the companies’ sample), meat products (8.8%), edible grocery (7.1%), detergents (7.1%), office suppliers (7.1%), and household products (7.1%). Furthermore, it can also be considered as representative of suppliers’ size and company maturity as the range of turnover is between €80k and €227 ml., the range of employees is between 5 and 2.250 employees and

the range of company age is between 2 and 99 years. However, all three company indicators (sales, no. of employees, company age) indicate a high level of kurtosis (>+3.0) which means that our company sample tends to have heavy distribution tails on each of these three indicators. Moreover, our sample of responding suppliers includes 39 suppliers who have not adopted any type of MIAG services offered (No adoption group), 46 suppliers who have adopted MIAG services (MSC group) excluding the RF one, and 28 suppliers who have also adopted the RF program offered by Metro group (MVD group) and provided by MIAG (therefore, 39 non MIAG services adopters and 74 MIAG services adopters or, alternatively, 85 suppliers who have not adopted the RF program offered and 28 suppliers who have adopted it). Note that as full anonymity has been agreed with Metro Group in relation to the respondents and companies, in the respective exhibits the names are not revealed.

Regarding major financial and operational indicators in relation to these three groups of suppliers ("no adoption", "MSC services adoption", "MVD service adoption" group), a typical descriptive statistics analysis, as presented in **Exhibit 23d-f**, revealed the following. Firstly, there is statistically significant difference between the three groups' age, size (measured by sales), and "*sales to current assets*" ratio which is considered an indicator of operational efficiency. As such, it seems that suppliers' companies which adopt the RF program are younger compared to the ones in the other two groups. This can be potentially explained under the logic that younger companies have a shorter bank credit history and thus a relatively lower access to bank financing which makes the RF program a beneficial source of financing. Secondly, suppliers' companies which adopt the

RF program are smaller compared to the ones in the other two groups. This can be potentially explained under the logic that smaller companies have a relatively higher financing cost (due to relatively higher operational and/or financial risk) which makes the RF program a beneficial source of financing. Thirdly, suppliers' companies which adopt the RF program record a lower operational efficiency compared to the ones in the other two groups. This can be potentially explained under the logic that operationally less efficient companies (which produce less sales per unit of current assets) have a relatively higher operational risk, and consequently lower financial performance, which makes the RF program a beneficial source of financing. Fourthly, statistical results indicate that there is no statistically significant difference, among the three supplier groups, on the following major financial and operational indicators: supplier current ratio, bank interest rate charged to supplier, supplier long-term debt to equity, supplier cash ratio, percentage of supplier turnover contributed by Metro group, average payment delay by Metro group, overdue payments by Metro group as a percentage of supplier sales, disputes' frequency between the supplier and Metro group.

4.6 Research Methodology: Statistical Methodology

In relation to the **fourth stage** of the implemented research framework (data analysis), the statistical method, applied for depicting and testing the conceptual research model as well as the related hypotheses, that I use is: **(1)** SPSS Statistics for database development / filtering (e.g. multiple imputation and expectation maximization for missing values analysis), preliminary testing, such

as descriptive statistics, reliability analysis (cronbach's alphas), factor dimension reduction for Confirmatory Factor Analysis (CFA) of examined constructs, bivariate correlation tables, automatic linear modeling, multiple regression analysis, and one-way anova tests; **(2)** SPSS Amos Structural Equation Modeling (SEM) which is a valuable tool for testing and advancing Operations Management theory (Shah & Goldstein, 2006); and **(3)** SPSS PROCESS (Hayes, 2012), provided as an add-in for SPSS, for the required statistical testing of the three moderators' effects between specific related constructs, as presented in the conceptual model. More specifically, it is a computational procedure that implements moderation or mediation analysis, using a path analysis framework similar to the approach described by Edwards and Lambert (2007) and Preacher et al. (2007). Moreover, as Hayes (2012) indicates, it provides many of the capabilities of existing programs and tools while expanding the number and complexity of models that combine moderation and mediation, all in a single, easy-to-use point-and-click SPSS interface.

Regarding SEM, it is considered to be one of the most appropriate technical methods for my research (along with the standard multiple regression statistical analysis) mainly due to the fact that it is a powerful multivariate technique that includes specialized versions of other analysis methods such as: **(1)** causal modeling or path analysis, which hypothesizes causal relationships among variables and tests the causal models with linear equation systems; **(2)** confirmatory factor analysis, an extension of factor analysis in which specific hypotheses about the structure of the factor loadings and intercorrelations are tested; **(3)** second order factor analysis, an extension of factor analysis in which

the correlation matrix of the common factors is itself factor analyzed to provide second order factors; **(4)** covariance structure models, which hypothesize that a covariance matrix has a particular form; and **(5)** correlation structure models, which hypothesize that a correlation matrix has a particular form (Schumacker & Lomax, 2010; Blunch, 2013). In addition, SEM method's main advantages compared to multiple regression analysis is that it is more flexible on the assumptions (particularly by allowing interpretation in the face of multicollinearity), it uses CFA to reduce measurement error by having multiple indicators per latent variable, and allows one to test entire models and to test them overall, versus focusing on individual coefficients (Iacobucci, 2009; 2010; Fabrigar et al., 2010). Moreover, SEM includes the ability to test models with multiple dependent variables and model mediating variables and error terms (Bagozzi & Yi, 1998; Iacobucci, 2010). Finally, it could test coefficients across multiple between-subjects groups and handle difficult data such as longitudinal with auto-correlated error, multi-level data, non-normal data, incomplete data, as well as relatively small sample sizes (Nachtigall et al., 2003; Allison, 2003; Gao et al., 2008; Iacobucci, 2010).

Therefore, by using both SPSS Statistics and SPSS Amos software platform, I designed and tested my conceptual model in terms of constructs' development (by utilizing sets of items from the 180 available variables) as well as multiple regression analysis, path analysis and model fit. Finally, in addition to the above software platforms, for the literature review and references, IE business school's electronic library platform was used, along with "Mendeley"

desktop software for compiling, filtering, categorizing, and tracking my bibliography.

4.7 Research Methodology: Missing Data Analysis

During the preliminary stage of my data analysis, I conducted research on how to treat missing data, where necessary and applicable, and based on the research findings (Kamakura & Wedel, 2000; Carter, 2006; Dong & Peng, 2013; Field, 2013) there are six main methods of handling them. These are: **(1)** Mean replacement (e.g. replace missing values with the average generated); **(2)** Listwise deletion (complete-case analysis) which is an ad hoc method of dealing with missing data in that it deals with the missing data before any substantive analyses are done. This method is considered the easiest and simplest method of dealing with missing data (Brown, 1983) and it involves removing incomplete cases (record with missing data on any variable) from the dataset. This means the researcher removes all the records that have missing data on any variable. Depending on the sample size and number of variables, a major disadvantage is a potential significant reduction in the sample size available for data analysis (Carter, 2006). Moreover, Listwise deletion assumes that the data are missing completely at random (MCAR) which means that the probability of obtaining a particular pattern of missing data is not dependent on the values that are missing and the probability of obtaining the missing data pattern in the sample is not dependent on the observed data (Rubin, 1976). An advantage in using Listwise deletion is that all analyses are calculated with the same set of cases; **(3)** Pairwise deletion (available-case analysis) which uses all available data. This means for

each pair of variables it calculates the covariance estimates from all cases with complete observations on both variables (Wothke, 2000). This method also assumes that the data are MCAR. Cases are removed when they have missing data on the variables involved in that particular computation (Kline, 1998). This can be problematic in that each element of the covariance matrix could be based on different groups of subjects. For example, if 300 subjects had complete scores for variables X1 and X2 then the effective sample size for the covariance between X1 and X2 is 300. Likewise, if 200 subjects had complete scores on X1 and X3 then the sample size for this covariance would be only 200. Kline (1998) points out, as a disadvantage point, that it would be impossible to derive some of these covariances if they were calculated using data from all subjects, as in listwise deletion (Carter, 2006). However, listwise and pairwise deletion are considered the most common techniques of handling missing data (Peugh & Enders, 2004); **(4)** Multiple imputation which is a statistical technique that requires three steps: (a) imputation which results in m complete data sets (impute the missing entries of the incomplete data sets, not once, but m times, and then imputed values are drawn for a distribution that can be different for each missing entry); (b) analysis of each of the m completed data sets which results to m analyses; (c) pooling where an integration of the m analysis results into a final result. Simple rules exist for combining the m analyses, presented in the following pages, and Rubin (1987) has shown that if the method to create imputations is following the defined rules, then the resulting inferences can be statistically valid; **(5)** Full-Information Maximum Likelihood (FIML) method, one option available by SEM platforms to deal with the missing data problem, which "*uses all of the information of the*

observed data, including mean and variance for the missing portions of a variable, given the observed portion(s) of other variables" (Wothke, 2000). This method assumes multivariate normality and maximizes the likelihood of the model with the observed data. There are two structural equation modeling programs, such as SAP Amos (Arbuckle, 1995) and Mx (Neale, 1994), that implement the FIML method for dealing with missing data and using them do not require the same level of technical expertise (Arbuckle, 1995) as do the methods presented by Dempster et al. (1977) and Muthen et al. (1987). Moreover, both SAP Amos and Mx maximize the case-wise likelihood of the observed data (computed by minimizing the function), are not limited by the number of missing-data patterns, and do not require complex steps to accommodate missing data; **(6)** Expectation-Maximization method which is based on an algorithm presented by Dempster et al. (1977) for computing maximum likelihood estimates from missing data sets. Each iteration of this algorithm consists of an expectation step followed by a maximization step. They assume a family of sampling densities f (x|ϕ) depending on parameters ϕ and they then derive their corresponding family of sampling densities g (y|ϕ). The EM algorithm attempts to find a value of ϕ which maximizes g (y|ϕ) given an observed y, but it does this by making use of the related family f(x|ϕ) (Carter, 2006). Certain researchers, such as Schafer and Olsen (1998), claim that with the development of the EM algorithm, statisticians have stopped viewing missing data as a "*nuisance*" and have reevaluated it as a source of variability to be averaged over. Furthermore, Schafer and Olsen (1998) note that multiple imputation methods resemble other methods of ad-hoc case deletion because they address the missing-data issue at the beginning, before

substantive analyses are run. They argue that unlike other ad-hoc methods, multiple imputations do not have to be MCAR but instead need only meet the less rigorous assumption that the missing data are missing at random (MAR). Data are missing at random when probability of obtaining a particular pattern of missing data is not dependent on the values that are missing (Rubin, 1987). Finally, Schafer and Olsen (1998) also state that multiple imputation techniques are statistically defensible and incorporate missing-data into all summary statistics.

Based on the above research for missing data analysis, it was decided to implement the forth method presented which is Multiple Imputation (MI). Based on this method, in the respective analysis of data patters, I had to check for monotonicity, in other words rigid patters of increasing or decreasing missing data (if the data are monotone, then all missing cells and nonmissing cells in a chart will be contiguous; that is, there will be no "*islands*" of nonmissing cells in the lower right portion of the respective generated chart and no "*islands*" of missing cells in the upper left portion of the chart). The main reason that we don't want to record monotonicity (missing values not missing at random) is because that would indicate that there is a certain type of bias in the missing values (a specific set of questions most subjects didn't answer, for example). Another important issue to decide on is how to group the variables for pattern analysis as well as MI. Dong & Peng (2013) indicate that it is better to include variables that correlate with the variables of the missing values, (correlation of 0.40 and above). Moreover, it is more powerful to define subscales of items, where the MIs will take place, because the correlation of the items within a specific subset should be higher than the correlations of the items across subsets. An additional important

issue to consider is how many imputations to do. So, if by estimating the λ function, you get λ=0.1, 0.5, 0.7, 0.9 then m should be 20, 40, 100 or more than 100 respectively. A rule of thumb is to do as many imputations as the maximum percentage of missing values. Furthermore, another main issue to decide upon is how to pool the imputed missing values to a single value for each missing value. This can be done with Rubin's (1987) or Schafer's (1997) method. As a simpler approach, a researcher can take the average of all x estimated values (from the x imputed values), round the variables which have been estimated to the closest integer, limit the range of estimations within the Likert scale used (e.g. 1-7), and set the preferences for rounding. Therefore, as indicated, regarding the MI process followed, I applied it in different groups of variables (where, based on our conceptual model and theory, fit together / correlate) and chose in SPSS the automatic choice of MI method applied based on the existence or not of monotonicity of missing values per group of variables. Moreover, I chose 100 imputations per variables' group (in order to follow the rule of thumb of at least as many or more imputation as the maximum percentage of missing values per variable analyzed) with minimum-maximum constraints of a 1-7 Likert scale and without rounding in order to allow for more variance on the MI process. We then applied Rubin's (1987) method for averaging & rounding, where applicable & necessary (Wayman, 2003; Graham, 2009), the final pooled data from those 100 imputations per variable. From the 180 variables in total, there are 70 unselected / unused variables, that have been excluded by the MI process because they are either text / information (like zip code, date, city, company, name, etc.) or their missing percentage is more than 72.6% (up to 100% on certain variables, with

the average percentage of missing values of those 70 non-selected variables to be at 52.6%).

4.8 Research Methodology: Confirmatory Factor Analysis

Following the missing data analysis, I then continued with the confirmatory factor analysis (CFA), for examining the constructs presented in my conceptual model (9 constructs in total, supported by the examined theories and related research, plus additional ones which were pre-examined but not included in the research focus and conceptual model, by also considering the feedback received by the defense proposal committee members) and also checking for any reliability and validity issues. It is important to be concerned with a test's reliability for two reasons. First, reliability provides a measure of the extent to which an examinee's score reflects random measurement error. The second reason to be concerned with reliability is that it is a precursor to test validity. That is, if test scores cannot be assigned consistently, it is impossible to conclude that the scores accurately measure the domain of interest. Validity refers to the extent to which the inferences made from a test are justified and accurate. Ultimately, validity is the psychometric property about which we are most concerned. Therefore, reliability analysis is often viewed as a first step in the test validation process. If the test is unreliable, one needn't spend the time investigating whether it is valid, it will not be (Wells & Wollack, 2003). On the contrary, if the test has adequate reliability, then a validation study would be worthwhile. Internal consistency reliability type is mainly tested by Cronbach's alpha (1951), a measure of item homogeneity, and for checking improvements in adding or subtracting items the Spearman-

Brown prophecy formula (Spearman, 1910; Brown, 1910) can be used (to predict the anticipated reliability of a longer or shorter test / questionnaire), given a value of Cronbach's alpha for an existing test / questionnaire. Cronbach's alpha ranges from 0 to 1.00, with values close to 1.00 indicating high consistency. Professionally developed high-stakes standardized tests can have internal consistency coefficients of 0.90 or higher which is considered excellent. Lower-stakes standardized tests could have internal consistencies of 0.80 or higher which are considered good, standardized tests which have internal consistencies of at least 0.70 are considered acceptable, while standardized tests which have internal consistencies between 0.60 and 0.70 are considered questionable but potentially acceptable (Cortina 1993; Wells & Wollack, 2003; Drost, 2011).

Regarding the actual **CFA analysis**, there are three prerequisites before conducting factor analysis. Firstly, in order to conduct a reliable factor analysis, the sample size needs to be big enough (Tabachnik & Fidell, 2001; Costello & Osborne, 2005; Field, 2013). The smaller the sample, the bigger the chance that the correlation coefficients between items differ from the correlation coefficients between items in other samples (Field, 2013). A common rule of thumb is that a researcher needs, at least, 10-15 participants per item. Yet, it largely depends on the proportion of variance in a dataset a factor explains how large a sample needs to be. If a factor explains lots of variance in a dataset, variables correlate highly with that factor, i.e. load highly on that factor. Moreover, a factor with four or more loadings greater than 0.6 "*is reliable regardless of sample size*" (Field, 2013). In order to determine whether my sample size is adequate, I use the **Kaiser-Meyer-Okin measure of sampling adequacy (KMO)** which can signal in advance

whether the sample size is large enough to reliably extract factors (Field, 2013). The KMO "*represents the ratio of the squared correlation between variables to the squared partial correlation between variables*" (Field, 2013). When the KMO is approaching 0, it is difficult to extract a factor, since the amount of variance just two variables share (partial correlation) is relatively large in comparison with the amount of variance two variables share with other variables (correlation minus partial correlation). When the KMO is approaching 1, a factor or factors can probably be extracted, since the opposite pattern is visible. Therefore, KMO values up to 0.6 are considered mediocre, values between 0.6 and 0.8 are relatively good, values between 0.8 and 0.9 are great, and values above 0.9 are superb (Field, 2013).

Secondly, another prerequisite for factor analysis is that the variables are measured at an interval level (Field, 2013). A Likert scale is assumed to be an interval scale (Rattray & Jones, 2007), although the item scores are discrete values. That hinders the check of the next condition: **the data should be approximately normally distributed** to be able to generalize the results beyond the sample (Field, 2013) and to conduct a maximum likelihood factor analysis to determine validly how many factors underlie the dataset (Costello & Osborne, 2005). Normality tests seem not to be able to test normality of distribution in a set of discrete data. If an item in the questionnaire is far from normally distributed, it could be indicated by both the levels of skewness and kurtosis where all variables should be within the range of + or -2.0 as a rule of thumb (George & Mallery, 2013).

Thirdly, the final step before a factor analysis can be conducted is generating the correlation matrix and checking whether the variables do not correlate too highly or too lowly with other variables (Field, 2013). If variables correlate too highly ($r > 0.8$ or $r < -.8$), "*it becomes impossible to determine the unique contribution to a factor of the variables that are highly correlated*" (Field, 2013). If a variable correlates lowly with many other variables ($-0.30 < r < 0.30$), the variable probably does not measure the same underlying construct as the other variables. Both the highly and lowly correlating items could be considered for elimination. There is one objective test to determine whether the items do not correlate too lowly: **Bartlett's test** (1937) (r: > -0.50 or 0.50) However, that test tests a very extreme case of non-correlation: all items of the questionnaire do not correlate with any other item. If the Bartlett's test gives a significant result, we can assume that the items correlate anyhow. If the Bartlett's test gives a significant result and the items correlate at most with a third of the items too lowly, items are not to be excluded, before the factor analysis is conducted (Dyer & Keating, 1980; Field, 2013).

Considering the above pre-CFA analysis principles, I conducted a test in terms of normality, sample size adequacy, and correlation levels in all 46 items which were initially investigated. From those, by also considering the suggestions by the dissertation committee during the defense proposal, 35 items were utilized which are related to the 9 constructs my research is focusing in (as such 11 items, which resulted to 6 constructs, were pre-examined but were not used due my improved research focus). As presented in **Exhibit 24a-d (in Appendix A)**, all items' skewness and kurtosis level does not indicate extreme variations from

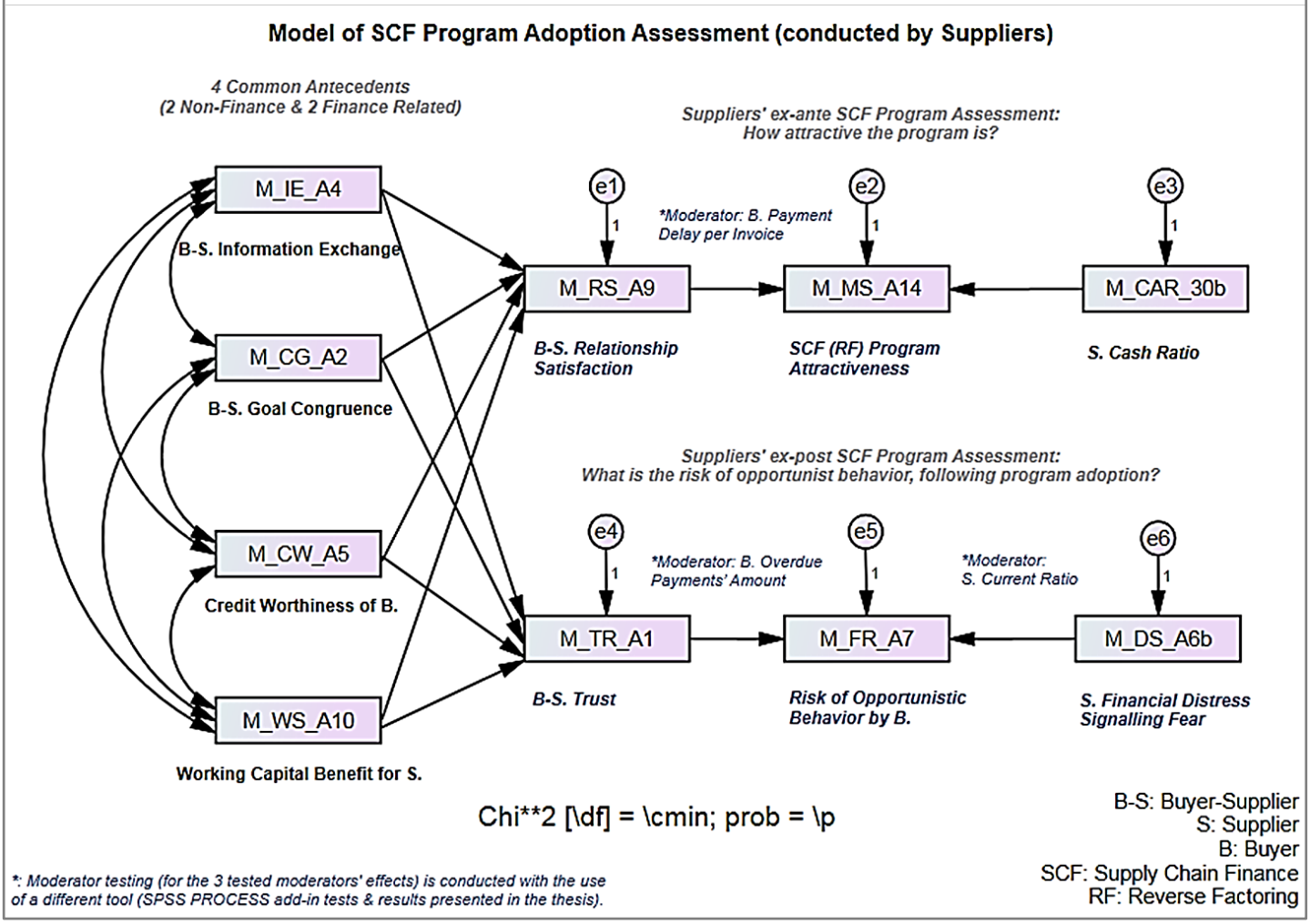
normal distribution, excluding one item ("*22b. MI_BDISPUTES_ 53CAT"*). Moreover, in terms of sample size adequacy, the KMO test of the 35 items utilized indicates a value of 0.785 (higher than 0.70 which is considered a good level) and the Bartlett's test of sphericity is significant (Chi-Square: 2857,002, df: 595, p<0.05). Moreover, the 35 utilized items' diagonals of the anti-image matrix are all recording values which are higher than 0.50. Following the pre-CFA analysis, I tested the internal consistency reliability by measuring the Cronbach's alpha generated for the construct's predefined set of items. The results indicate, in **Exhibits 25a-f (in Appendix A)**, the alphas of all constructs presented in the conceptual model are higher than 0.70, except two ("*buyer credit worthiness*": 0.692, and "*financial distress signaling fear*": 0.541), while they don't indicate extreme variations from normality, based on skewness and kurtosis levels, excluding one construct where kurtosis is slightly higher that +2.0 (*14. MI_MIAG_SATTRACTIVENESS_AV_71-79*).

5.1 Structural Equation Model Framework and Model Fit Tests Results

Following the CFA analysis and the results derived by it, I developed and tested my conceptual model by using two alternative methods: **(1)** SPSS Amos software, which is considered a widely accepted and comprehensive SEM platform, where all our hypotheses could be tested and modified, where necessary, as presented in **Exhibit 26a**; and **(2)** SPSS Statistics typical multiple regression analysis (of 4 different multiple regressions, as indicated by the conceptual model) in order to cross check and verify the statistical results of the examined hypotheses by two different methods, test both in terms of model fit as

well as independent regressions, and be able to check moderators' (through SPSS PROCESS add-in, as previously indicted) as well as control variables' test results. Regarding "*SPSS Amos*" SEM platform, one of the main reasons that this type of statistical analysis, as offered by this platform, has become so widely used is due to its ability to "*simultaneously estimate multiple dependence relationships, similar to multiple regression equations, while also incorporating multiple measures for each concept*" (Hair et al., 2014). Therefore, the SEM model which is developed, based on the respective conceptual model designed, tests the relationships among the constructs this research is focusing on, and generates the respective unstandardized and standardized estimates, as presented in **Exhibits 26b-c (in Appendix A)**. Note that the SEM platform was not used for control variables' testing as well as moderators' testing, as these tests were conducted through SPSS Statistics platform and the indicated add-in.

Exhibit 26a: Conceptual Model Development (9 constructs, 4 Quantitative Variables – 8 Hypotheses) in SPSS AMOS



In relation to the specific hypotheses' testing, the path coefficient results for the eight suggested hypotheses tested are presented in summary in **Exhibit 26d** (standardized regression weights/coefficients) and in more detail in **Exhibits 27a-d in Appendix A**. Note that for a hypothesis to be supported, the parameter estimate should be significant and have the predicted sign while the structural model with the path coefficient results for the various hypotheses tested is given in the following notation: **: Significant at 0.001 level (two-tailed); **: Significant at 0.01 level (two-tailed), ***: Significant at 0.05 level (two-tailed), n.s: Not significant*. More specifically, the statistical results for each of the eight hypotheses suggested, indicate that following:

Information Exchange – Related Hypothesis: Supported

Hypothesis 1a-b: As suggested, Buyer-Supplier information exchange has a significant positive effect on both Buyer-Supplier relationship satisfaction and Buyer-Supplier trust, as perceived by suppliers. The standardized regression weights are +0.462 and +0.518 respectively with t values of +5.919 and +7.811 respectively. The relationship of BS information exchange to both BSR satisfaction and BS trust is positive and statistically significant at p <0.050, two-tailed (p=0.000 in both).

Goal Congruence – Related Hypothesis: Partially supported

Hypothesis 2a-b: Buyer-Supplier goal congruence has a significant positive effect only on Buyer-Supplier trust and not on Buyer-Supplier relationship satisfaction, as perceived by suppliers. The standardized regression weights are +0.271 and +0.078 respectively with t values of +4.047 and +0.985 respectively. The relationship of BS goal congruence to BSR satisfaction is positive but statistically insignificant at p <0.050, two-tailed (p=0.327), while to BS trust is positive and statistically significant at p <0.050, two-tailed (p=0.000).

Buyer Credit Worthiness – Related Hypothesis: Supported

Hypothesis 3a-b: As suggested, a buyer's credit worthiness level has a significant positive effect on both Buyer-Supplier relationship satisfaction and Buyer-Supplier trust, as perceived by suppliers. The standardized regression weights are +0.150 and +0.144 respectively with t values of +1.997 and +2.254 respectively. The relationship of a buyer's credit worthiness level to both BSR

satisfaction and BS trust is positive and statistically significant at p <0.050, two-tailed (p=0.048 and p=0.026 respectively).

Supplier Working Capital Benefit – Related Hypothesis: Supported

Hypothesis 4a-b: As suggested, the higher the supplier's working capital benefit due to the overall collaboration with a buyer, the higher the Buyer-Supplier relationship satisfaction and Buyer-Supplier trust, as perceived by suppliers. The standardized regression weights are +0.347 and +0.118 respectively with t values of +5.430 and +2.165 respectively. The relationship of a supplier's working capital benefit (as perceived by the supplier, due to the overall collaboration with a buyer), to both BSR satisfaction and BS trust is positive and statistically significant at p <0.050, two-tailed (p=0.000 and p=0.033 respectively).

BSR Satisfaction – Related Hypothesis: Supported, based on negative association

Hypothesis 5a-b: An opposite association than the one suggested by the hypothesis is supported and this is surprising but interesting. More specifically, the level of BSR satisfaction has a significant negative effect on RF program attractiveness, as perceived by suppliers. The standardized regression weight is -0.248 with a t value of -2.673. The relationship of supplier perceived BSR satisfaction to RF program attractiveness is negative and statistically significant at p <0.050, two-tailed (p=0.009). Moreover, based on the moderator test results presented in **Exhibit 28a (in Appendix A)**, as suggested, this relationship is positively moderated by the buyer's payment delay per invoice, in such a way

where for any given level of BSR satisfaction, a higher level of average invoice payment delay by the buyer increases the supplier-perceived RF program attractiveness ($\Delta R^2 = 0.0480$, $F(1,109) = 5.9878$, $p = 0.016$ [$p<0.050$]).

Supplier Cash Ratio – Related Hypothesis: Not supported (negative association recorded but not statistically significant)

Hypothesis 6: It is suggested that the higher the level of a supplier's cash ratio, the lower the level of supplier perceived RF program attractiveness. Despite the fact that the direction of the relationship between a supplier's cash ratio and the RF program attractiveness is negative as suggested (standardized regression weight of -0.040 with a t value of -0.435), it is statistically insignificant (p=0.664, two-tailed, [p<0.050]).

Buyer-Supplier Trust – Related Hypothesis: Supported

Hypothesis 7a-b: As suggested, the supplier's perceived Buyer-Supplier trust is negatively associated to the level of the supplier's perceived risk of opportunistic behavior by the buyer, following potential RF program adoption. The standardized regression weight is -0.230 with a t value of -2.672. The relationship of supplier perceived BS trust to the risk of opportunistic behavior by the buyer is negative and statistically significant at p <0.050, two-tailed (p=0.009). Moreover, based on the moderator test results presented in **Exhibit 28b (in Appendix A)**, as suggested, this association is positively moderated by the level of overdue payments by the buyer, in such a way where for any given level of supplier's perceived BS trust, a higher level of overdue payments increases the supplier

perceived risk of opportunistic behavior by the buyer (ΔR^2 = 0.0365, F(1,109) = 4.3099, p = 0.040 [p<0.050]).

Supplier Financial Distress Signaling Fear – Related Hypothesis: Supported

Hypothesis 8a-b: As suggested, the supplier's fear of signaling financial distress to the buyer in case of a RF program adoption, is positively associated to the supplier's perceived risk of opportunistic behavior by the buyer, following potential RF program adoption. The standardized regression weight is +0.394 with a t value of +4.589. The relationship of the supplier's fear of signaling financial distress to the supplier's perceived risk of opportunistic behavior by the buyer is positive and statistically significant at p <0.050, two-tailed (p=0.000). Moreover, based on the moderator test results presented in **Exhibit 28c (in Appendix A)**, as suggested, this association is negatively moderated by the supplier's current ratio, in such a way where for any given level of a supplier's fear of signaling financial distress to the buyer, a supplier's higher current ratio reduces his perceived risk of opportunistic behavior by the buyer (ΔR^2 = 0.0983, F(1,109) = 14.2885, p = 0.000 [p<0.050]).

In terms of the overall model fit, as presented in **Exhibit 26d (in Appendix A)**, the results of the structural equation modelling indicate that the model is recursive with 10 exogenous and 6 endogenous variables, 55 distinct sample moments and 28 distinct parameters which were estimated. The degrees of freedom are (55 - 28) = 27, the minimum was achieved, and the model, based on

the first model fit test which is the Chi-square test result divided by the degrees of freedom (33,584 / 27 = 1.244) as well as the probability level (0.178 > 0.050), indicate an acceptable model fit. It is important to note that unlike in standard hypothesis testing, in this SEM model fit test we are hoping to obtain a probability value of the Chi-square test that is above our criterion of 0.050, as we do, because that suggests that the implied and sample moments are statistically the same. In contrast, a probability value below 0.050 would strongly suggest that the differences were real and that the model should be rejected (IBM, 2014). Moreover, as noted by Anderson and Gerbing (1988), even though there are no consistent standards for what is considered an acceptable model fit using the "*Chi-Square / DoF*" measure, according to Byrne (1989) and Hooper et al. (2008), a ratio lower than 2.00 represents an acceptable model fit and as such my model satisfies the benchmark (1.24 < 2.00).

Furthermore, in relation to the additional model fit tests' (Hooper et al., 2008; IBM, 2014) results, as presented in **Exhibit 26e (in Appendix A)**, the goodness of fit index (GFI = 0.946) fulfils the recommended cut-off point (GFI > 0.80) (Seyal et al., 2002), the adjusted GFI for the number of degrees of freedom in the model (AGFI = 0,891) is very close to the acceptable range (=> 0.900), while the parsimonious GFI (PGFI = 0,465), which combines parsimony and goodness of fit measure into one index by taking into account the number of parameters in the model, is also very close to the recommended cut-off point (PGFI => 0,500) for the model to be acceptable (Hooper et al., 2008; IBM, 2014). In addition, the comparative fit index result (CFI = 0.983) fulfils the minimum specified cut-off point (=> 0.900), indicating a good model fit (Bentler & Bonett, 1980; Bentler,

1990), while the parsimonious normed fit index (PNFI = 0,552), which is the NFI modified to take into account the number of parameters, fulfils the minimum specified cut-off point (=> 0.500), and the parsimonious CFI (PCFI = 0,590), which is the CFI modified to consider the number of parameters, also fulfils the minimum specified cut-off point (=> 0.500) for the model to be acceptable (Hooper et al., 2008; IBM, 2014).

Moreover, in terms of Noncentrality Parameter test (NCP = 6,58), which is calculated by subtracting the degrees of freedom from the Chi-square value, the result is not departing to a great extent from zero (the model fits perfectly if NCP equals to 0) (Hooper et al., 2008; IBM, 2014). In relation to population discrepancy test (F0 = 0,059), which is defined as "*(Chi-Square – DoF) / N*" and gives an idea about how far off the Chi-square is from its expected value, independent of sample size, the result is very close to 0 (when F0 is 0 this means that the model is not misspecified) (Hooper et al., 2008; IBM, 2014). Regarding the "P of Close Fit" test (PCLOSE), developed by Browne & Cudeck (1992) which indicates whether the root mean square error of approximation (RMSEA) value is significantly different from 0.05, for my model the result is 0,508 and as such we do not reject the null hypothesis that RMSEA <= 0.05 and thus we have another indication that the model fits (Hooper et al., 2008; IBM, 2014). Moreover, Consistent Akaike Information Criterion value (CAIC = 193,951), which is computed as "*Cmin + 2*q*", where Cmin is the Chi-square value and q is the number of parameters estimated, by also considering the sample size for more consistent results, indicates a better fit (smaller value) compared to the extreme cases of an independent (481,104) and saturated model (315,006), while the

Expected Cross Validation Index value (ECVI = 0,800), which is actually another representation of the Akaike Information Criterion, except for a scaling factor (ECVI = AIC/N = Fmin + 2*q /N), also indicates a better fit (smaller value) compared to the extreme cases of an independent (3,963) and saturated model (0,982) (Hooper et al., 2008; IBM, 2014).

5.2 Multiple Regressions testing, Moderators' testing and Statistical Results

Following the completion of the structural equation modeling, along with the review and interpretation of the respective statistical results regarding each suggested and examined hypothesis as well as the overall model fit, in an effort to cross verify the results in relation to the eight examined hypotheses, I developed four multiple regressions which capture in full the conceptual model designed and examined. The dependent variable on each of the four multiple regressions is the one of **(1)** BSR satisfaction, **(2)** BS trust, **(3)** RF program attractiveness and **(4)** risk of buyer opportunistic behavior respectively, while the independent variables are the ones presented and examined for each dependent variable of my conceptual model, along with the appropriate control variables (among the five supplier company-specific and three buyer-supplier collaboration-specific ones) examined for each of the four major elements of the conceptual model. More specifically, as presented in **Exhibit 27a-b**, in terms of the four examined hypotheses (information exchange, goal congruence, buyer credit worthiness and supplier perceived working capital benefit due to the collaboration with the specific buyer) related to BSR satisfaction and BS trust, the

statistical results verify the ones generated by the SEM analysis while the six control variables tested (supplier sales, company age, supplier current ratio, percentage of supplier turnover contributed by Metro, invoice payment delays by buyer, level of overdue payments by buyer) are statistically not significant, excluding the case of the control variable of overdue payments by the buyer to the BS trust, where it seems that the there is a statistically significant negative relationship between the two (b=-0.170, t=-3.151, p=0,002). It should be noted that the control variables were tested in a separate multiple regression per dependent variable in order to check the impact of those, besides the impact generated by the examined independent variables. In addition, based on the standardized coefficient results, information exchange and supplier perceived working capital benefit (due to the collaboration with the specific buyer) seem to have the most important impact to BSR satisfaction, while the non-finance related antecedent seems to have a stronger impact compared to the finance related one. As for the BS trust, information exchange and goal congruence seem to have the most important impact, while the two finance related antecedents seem to have a weaker impact compared to the two non-finance related ones. Moreover, the percentage of "BSR satisfaction" and "BS trust" variation explained by the four major independent variables, as measured by squared multiple correlation (adjusted R^2), is 59.9% and 71.0% respectively (R^2=0.599, F(4,108)=42.762, p=0.000 and R^2=0.710, F(4,108)=69.437, p=0.000 respectively). These R^2 results, which are verified by the SEM analysis and the respective statistical results (see **Exhibit 26c-d in Appendix A**), are considered high but also indicate that there could be certain other important antecedents,

besides the ones examined in this research, that drive these two critical BSR quality elements, within the context of a RF program adoption invitation by a large buyer and the assessment for potential adoption by the invited suppliers.

Exhibit 27a: Conceptual Model Results – SPSS Multiple Regression Tests on 4 Major DVs & Control Variables

DV: BSR Satisfaction

Model Summary[c]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	,783[a]	,613	,599	,78994	,613	42,762	4	108	,000	
2	,800[b]	,640	,605	,78405	,027	1,271	6	102	,277	1,907

a. Predictors: (Constant), 10. MI_WCAPITALS_AV_42_46_50, 4. MI_INFO_EXCHANGE_AV_22_23_24, 5. MI_CREDIT_WORTHINESS_AV_20_28_29, 2. MI_GOAL_CONGRUENCE_AV_18_21_27

b. Predictors: (Constant), 10. MI_WCAPITALS_AV_42_46_50, 4. MI_INFO_EXCHANGE_AV_22_23_24, 5. MI_CREDIT_WORTHINESS_AV_20_28_29, 2. MI_GOAL_CONGRUENCE_AV_18_21_27, 65MI - Turnover % (999 missing values), 25. MI_CRATIO_124_125_126/128_129, 68MI - Overdue payments (% total turnover / 999 mv), 128MI - Sales revenue (PLN) 2008, 118MI - Company, years since foundation, 67MI - Payment delays (days average / 999 mv)

Coefficients[a]

Model	4 IVs & 6 CVs	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	,317	,334		,949	,345					
	4. MI_INFO_EXCHANGE_AV_22_23_24	,378	,064	,462	5,919	,000	,669	,495	,354	,589	1,697
	2. MI_GOAL_CONGRUENCE_AV_18_21_27	,071	,072	,078	,985	,327	,536	,094	,059	,576	1,736
	5. MI_CREDIT_WORTHINESS_AV_20_28_29	,133	,067	,150	1,997	,048	,536	,189	,120	,637	1,570
	10. MI_WCAPITALS_AV_42_46_50	,363	,067	,347	5,430	,000	,525	,463	,325	,877	1,140
2	(Constant)	,292	,374		,781	,437					
	4. MI_INFO_EXCHANGE_AV_22_23_24	,373	,066	,456	5,670	,000	,669	,490	,337	,546	1,832
	2. MI_GOAL_CONGRUENCE_AV_18_21_27	,081	,073	,088	1,110	,270	,536	,109	,066	,564	1,775
	5. MI_CREDIT_WORTHINESS_AV_20_28_29	,099	,069	,111	1,434	,155	,536	,141	,085	,591	1,691
	10. MI_WCAPITALS_AV_42_46_50	,388	,071	,371	5,468	,000	,525	,476	,325	,769	1,300
	128MI - Sales revenue (PLN) 2008	-1,806E-11	,000	-,002	-,038	,969	-,028	-,004	-,002	,929	1,076
	118MI - Company, years since foundation	,005	,004	,089	1,272	,206	-,026	,125	,076	,716	1,396
	25. MI_CRATIO_124_125_126/128_129	,155	,119	,080	1,301	,196	,176	,128	,077	,936	1,068
	65MI - Turnover % to Metro	,391	,477	,051	,819	,414	,133	,081	,049	,922	1,084
	67MI - Payment delays (days, on average)	-,005	,005	-,082	-1,137	,258	-,175	-,112	-,068	,679	1,472
	68MI - Overdue payments (as a % total turnover)	-,541	,483	-,073	-1,120	,265	-,013	-,110	-,067	,842	1,187

a. Dependent Variable: 9. MI_RSATISFACTION_AV_39_40_41

Exhibit 27b: Conceptual Model Results – SPSS Multiple Regression Tests on 4 Major DVs & Control Variables

DV: BS Trust

Model Summary[c]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	,849[a]	,720	,710	,7659	,720	69,437	4	108	,000	
2	,866[b]	,749	,725	,7456	,029	1,991	6	102	,074	2,171

a. Predictors: (Constant), 10. MI_WCAPITALS_AV_42_46_50, 4. MI_INFO_EXCHANGE_AV_22_23_24, 5. MI_CREDIT_WORTHINESS_AV_20_28_29, 2. MI_GOAL_CONGRUENCE_AV_18_21_27

b. Predictors: (Constant), 10. MI_WCAPITALS_AV_42_46_50, 4. MI_INFO_EXCHANGE_AV_22_23_24, 5. MI_CREDIT_WORTHINESS_AV_20_28_29, 2. MI_GOAL_CONGRUENCE_AV_18_21_27, 65MI - Turnover % (999 missing values), 25. MI_CRATIO_124_125_126/128_129, 68MI - Overdue payments (% total turnover / 999 mv), 128MI - Sales revenue (PLN) 2008, 118MI - Company, years since foundation, 67MI - Payment delays (days average / 999 mv)

Coefficients[a]

Model	4 IVs & 6 CVs	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	-,306	,324		-,945	,347					
	4. MI_INFO_EXCHANGE_AV_22_23_24	,483	,062	,518	7,811	,000	,781	,601	,398	,589	1,697
	2. MI_GOAL_CONGRUENCE_AV_18_21_27	,284	,070	,271	4,047	,000	,687	,363	,206	,576	1,736
	5. MI_CREDIT_WORTHINESS_AV_20_28_29	,146	,065	,144	2,254	,026	,595	,212	,115	,637	1,570
	10. MI_WCAPITALS_AV_42_46_50	,140	,065	,118	2,165	,033	,369	,204	,110	,877	1,140
2	(Constant)	-,374	,356		-1,051	,296					
	4. MI_INFO_EXCHANGE_AV_22_23_24	,518	,063	,556	8,283	,000	,781	,634	,411	,546	1,832
	2. MI_GOAL_CONGRUENCE_AV_18_21_27	,309	,069	,295	4,465	,000	,687	,404	,221	,564	1,775
	5. MI_CREDIT_WORTHINESS_AV_20_28_29	,127	,065	,125	1,946	,048	,595	,189	,096	,591	1,691
	10. MI_WCAPITALS_AV_42_46_50	,128	,067	,108	1,904	,060	,369	,185	,094	,769	1,300
	128MI - Sales revenue (PLN) 2008	5,318E-10	,000	,061	1,188	,238	-,003	,117	,059	,929	1,076
	118MI - Company, years since foundation	-,003	,004	-,045	-,762	,448	-,006	-,075	-,038	,716	1,396
	25. MI_CRATIO_124_125_126/128_129	,010	,113	,005	,088	,930	,055	,009	,004	,936	1,068
	65MI - Turnover % to Metro	,067	,454	,008	,148	,883	,120	,015	,007	,922	1,084
	67MI - Payment delays (days, on average)	,008	,005	,102	1,696	,093	-,090	,166	,084	,679	1,472
	68MI - Overdue payments (as a % of total turnover)	-1,447	,459	-,170	-3,151	,002	-,038	-,298	-,156	,842	1,187

a. Dependent Variable: 1. MI_TRUST_AV_15_16_17

In terms of the other four examined hypotheses (two related to supplier perceived RF program attractiveness and two related to risk of opportunistic behavior by the buyer), as presented in **Exhibit 27c-d**, the statistical results verify

the ones generated by the SEM analysis while the six control variables (supplier sales, company age, supplier current ratio, percentage of supplier turnover contributed by Metro, invoice payment delays by buyer, level of overdue payments by buyer) as well as the additional two tested specifically for the RF program attractiveness (supplier long-term debt to equity and interest rate charged by the bank) are statistically not significant. In addition, based on the standardized coefficient results, it is verified that BSR satisfaction is negatively associated to RF program attractiveness (b=-0.248, t=-2.673, p=0,009), while the supplier' company cash ratio seems to be statistically insignificant (b=-0.040, t=-0.435, p=0,664). In addition, it is also verified that the supplier perceived risk of opportunistic behavior by the buyer has a statistically negative association to BS trust (b=-0.230, t=-2.672, p=0,009) and statistically positive association to the supplier's fear of financial distress signaling (towards the buyer and the market) in case of a RF program adoption (b=0.394, t=4.589, p=0,000). As such, it seems that in relation to the ex-ante supplier assessment process, BSR satisfaction is surprisingly negatively affecting the supplier perceived RF program attractiveness, while in relation to the ex-post supplier assessment, it seems that the supplier's fear of financial distress signaling has a stronger impact compared to the BS trust, as perceived by the supplier. Furthermore, the percentage of supplier perceived "RF program attractiveness" and "risk of opportunistic behavior by the buyer" variation explained by the respective independent variables, as measured by squared multiple correlation (adjusted R^2), is 4.8% and 17.9% respectively (R^2=0.048, F(2,110)=3.812, p=0.025 and R^2=0.179, F(2,110)=13.188, p=0.000 respectively). These R^2 results, which are verified by

the SEM analysis and the respective statistical results (see **Exhibit 26c-d in Appendix A**), are considered significant but relatively low. Consequently, there should be additional, potentially more impactful antecedents, besides the ones examined in this research, that drive the RF program attractiveness, as a major element of an ex-ante RF program adoption assessment made by the invited supplier, as well as the risk of opportunistic behavior by the buyer, as a major element of an ex-post RF program adoption assessment made by the invited supplier, both within the context of the proposed assessment framework process followed by suppliers.

Exhibit 27c: Conceptual Model Results – SPSS Multiple Regression Tests on 4 Major DVs & Control Variables

DV: SCF (RF) Program Attractiveness **Model Summary[c]**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	,255[a]	,065	,048	,90537	,065	3,812	2	110	,025	
2	,356[b]	,127	,041	,90856	,062	,904	8	102	,517	1,631

a. Predictors: (Constant), 30b. MI_CASHR_126/129, 9. MI_RSATISFACTION_AV_39_40_41

b. Predictors: (Constant), 30b. MI_CASHR_126/129, 9. MI_RSATISFACTION_AV_39_40_41, 128MI - Sales revenue (PLN) 2008, 118MI - Company, years since foundation, 68MI - Overdue payments (% total turnover / 999 mv), 125MI - Interest rate charged by bank (cat.<3% - >11%), 65MI - Turnover % (999 missing values), 67MI - Payment delays (days average / 999 mv), 28c. MI_LTDER_127/130_131, 25. MI_CRATIO_124_125_126/128_129

Coefficients[a]

Model	2 IVs & 8 CVs	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	5,488	,317		17,309	,000					
	9. MI_RSATISFACTION_AV_39_40_41	-,184	,069	-,248	-2,673	,009	-,251	-,247	-,246	,991	1,009
	30b. MI_CASHR_126/129	-,414	,950	-,040	-,435	,664	-,064	-,041	-,040	,991	1,009
2	(Constant)	5,791	,451		12,851	,000					
	9. MI_RSATISFACTION_AV_39_40_41	-,186	,072	-,250	-2,593	,011	-,251	-,249	-,240	,924	1,082
	30b. MI_CASHR_126/129	,443	1,243	,043	,356	,722	-,064	,035	,033	,584	1,714
	128MI - Sales revenue (PLN) 2008	-1,150E-10	,000	-,020	-,213	,832	-,008	-,021	-,020	,950	1,053
	118MI - Company, years since foundation	,004	,005	,097	,941	,349	,057	,093	,087	,808	1,238
	25. MI_CRATIO_124_125_126/128_129	-,009	,201	-,006	-,044	,965	-,125	-,004	-,004	,440	2,271
	28c. MI_LTDER_127/130_131	-,028	,022	-,174	-1,286	,201	-,158	-,126	-,119	,469	2,134
	125MI - Interest rate charged by bank	-,027	,081	-,034	-,339	,735	-,040	-,034	-,031	,856	1,168
	65MI - Turnover % to Metro	-,653	,575	-,114	-1,135	,259	-,149	-,112	-,105	,853	1,173
	67MI - Payment delays (days, on average)	-,009	,005	-,172	-1,581	,117	-,077	-,155	-,146	,720	1,389
	68MI - Overdue payments (as a % total turnover)	-,137	,557	-,025	-,246	,806	-,060	-,024	-,023	,850	1,177

a. Dependent Variable: 14. MI_MIAG_SATTRACTIVENESS_AV_71-79

Exhibit 27d: Conceptual Model Results – SPSS Multiple Regression Tests on 4 Major DVs & Control Variables

Risk of Buyer Opportunistic Behavior — **Model Summary[c]**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	,440[a]	,193	,179	1,29664	,193	13,188	2	110	,000	
2	,466[b]	,217	,157	1,31367	,024	,528	6	104	,786	1,401

a. Predictors: (Constant), 6b. MI_DISTRESS_SIGNAL_AV_30_34, 1. MI_TRUST_AV_15_16_17

b. Predictors: (Constant), 6b. MI_DISTRESS_SIGNAL_AV_30_34, 1. MI_TRUST_AV_15_16_17, 128MI - Sales revenue (PLN) 2008, 68MI - Overdue payments (% total turnover / 999 mv), 25. MI_CRATIO_124_125_126/128_129, 118MI - Company, years since foundation, 65MI - Turnover % (999 missing values), 67MI - Payment delays (days average / 999 mv)

Coefficients[a]

Model	2 IVs & 6 CVs	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	3,682	,467		7,884	,000					
	1. MI_TRUST_AV_15_16_17	-,231	,086	-,230	-2,672	,009	-,197	-,247	-,229	,993	1,007
	6b. MI_DISTRESS_SIGNAL_AV_30_34	,350	,076	,394	4,589	,000	,376	,401	,393	,993	1,007
2	(Constant)	3,770	,557		6,775	,000					
	1. MI_TRUST_AV_15_16_17	-,241	,089	-,239	-2,704	,008	-,197	-,256	-,235	,961	1,040
	6b. MI_DISTRESS_SIGNAL_AV_30_34	,334	,083	,376	4,037	,000	,376	,368	,350	,868	1,152
	128MI - Sales revenue (PLN) 2008	-5,362E-10	,000	-,061	-,698	,487	-,083	-,068	-,061	,980	1,021
	118MI - Company, years since foundation	-,006	,007	-,086	-,867	,388	-,153	-,085	-,075	,770	1,299
	25. MI_CRATIO_124_125_126/128_129	,190	,199	,085	,955	,342	,132	,093	,083	,943	1,060
	65MI - Turnover % to Metro	,552	,805	,062	,685	,495	-,015	,067	,059	,910	1,099
	67MI - Payment delays (days, on average)	,002	,008	,027	,260	,796	,036	,025	,023	,701	1,426
	68MI - Overdue payments (as a % total turnover)	-,192	,791	-,022	-,243	,809	,028	-,024	-,021	,881	1,135

a. Dependent Variable: 7. MI_FRENEGOTIATION_AV_31_32_33_36_37

In relation to moderation testing, three moderators were examined and tested, the results of which are presented in **Exhibits 28a-c** and indicated in the three related hypotheses in the previous section (5.1). These moderators are the following: **(1)** in Hypothesis 5a-b the moderating effect of the buyer's payment delay per invoice, between BSR satisfaction and RF program attractiveness; **(2)** in Hypothesis 7a-b the moderating effect of overdue payments by the buyer,

between Buyer-Supplier trust and the supplier's perceived risk of buyer opportunistic behavior; and **(3)** in Hypothesis 8a-b the moderating effect of the supplier's current ratio, between the supplier's fear of signaling financial distress to the buyer (in case of a RF program adoption) and the supplier's perceived risk of opportunistic behavior by the buyer (following potential RF program adoption). In terms of the first moderator tested, the results (**Exhibit 28a**) indicate that the relationship is positively moderated by the buyer's payment delay per invoice, in such a way where for any given level of BSR satisfaction, a higher level of average invoice payment delay by the buyer increases the supplier-perceived RF program attractiveness ($\Delta R^2 = 0.0480$, $F(1,109) = 5.9878$, $p = 0.016$ [$p<0.050$]). Concerning the second moderator tested, the results (**Exhibit 28b**) indicate that the association is positively moderated by the level of overdue payments by the buyer, in such a way where for any given level of supplier's perceived BS trust, a higher level of overdue payments increases the supplier perceived risk of opportunistic behavior by the buyer ($\Delta R^2 = 0.0365$, $F(1,109) = 4.3099$, $p = 0.040$ [$p<0.050$]). Finally, regarding the third moderator tested, the results (**Exhibit 28c**) indicate that the association is negatively moderated by the supplier's current ratio, in such a way where for any given level of a supplier's fear of signaling financial distress to the buyer, a supplier's higher current ratio reduces his perceived risk of opportunistic behavior by the buyer ($\Delta R^2 = 0.0983$, $F(1,109) = 14.2885$, $p = 0.000$ [$p<0.050$]).

5.3 Research Results and Business Insights

The results of this research provide certain insights from an academic as well as business perspective. More specifically, in terms of the academic perspective, the findings indicate that BSR quality, as measured by BSR satisfaction and BS trust, plays in important role in the ex-ante and ex-post adoption assessment process which is followed by suppliers in relation to SCF programs offered by large retailers. As such, the major principles of AT are applicable within the specific context since the results indicate that the level of information exchange (which, based on the principal-agent stream of the theory, affects the level of information asymmetry between suppliers and buyers), and goal congruence (where the absence of it needs to be addressed as a major challenge for reaching an optimal behavior oriented contract between suppliers and buyers) are important drivers of BSR quality.

Furthermore, the findings indicate that the risk of opportunism through any potential violation of the contractual or relational agreement between suppliers and buyers (which, based on TCE theory, is considered a potential source of transaction costs, depending on the future outcome of any violating behavior from each party and the probability of occurring) is considered an important element within the context of the ex-post adoption assessment process, followed by suppliers who are invited to adopt a SCF program.

Moreover, based on the perspective of SCT, the research findings indicate that BSR satisfaction and BS trust (which are explained by the relational aspect of the theory that refers to the relationships suppliers and buyers have developed with each other through a history of interactions, leading to a BSR of trust,

obligation and reciprocity, prior to any RF program adoption and following that), goal congruence (which is explained by the cognitive aspect of the theory that represents the perceived or actual shared goals, norms, vision and values developed between suppliers and buyers) and information exchange (which is explained by the structural aspect of the theory stating that a set of social interaction ties exists between suppliers and buyers that results from the extent of social processes and activities implemented between them for coordinating and structurally forming the BSR) are all considered important within the context of the SCF program adoption process followed by invited suppliers. Considering the above, based on the principles of the three theories examined and the theoretical support they provide, the theoretical framework of adoption assessment process suggested, as well as the respective research results derived, contribute towards a better understanding of the BSR quality importance, within the context of SCF programs' adoption process, followed by invited suppliers as well as the antecedents of such an adoption decision.

Regarding the insights generated from the business perspective, the research results seem to be supporting the suggested and examined strategic framework of supplier assessment process of RF programs offered by large retailers for the following reasons. Firstly, the findings indicate that **suppliers could be making a 2-stage assessment of a RF program offered to them** based on **program attractiveness** and **risk of buyer opportunistic behavior**, following potential adoption. This assessment is positively driven by BSR quality through **BSR satisfaction**, on an ex-ante level of supplier assessment, and **BS trust**, on an ex-post level of supplier assessment. Moreover, both finance and

non-finance related elements matter in the 2-stage assessment process conducted by the suppliers but **information exchange seems to be the most important one for both levels of supplier assessment**. Therefore, buyers when they are designing and developing their RF program adoption strategy, they should consider providing accurate, frequent, detailed, and in-depth information about the RF program specifics, while promoting it and in written through the RF program contracts.

Secondly, in terms of strategic actions related to the level of RF program adoption, buyers could **improve BSR satisfaction** by mainly improving **information exchange** and **working capital benefits** as well as their **credit worthiness** towards their supplier due to their collaboration. However, surprisingly so, it seems that the higher the supplier perceived BSR satisfaction, the less attractive a RF program is to suppliers. Most probably this could be explained on the basis of social capital which has been generated through the interaction between the two parties and the suppliers' perception that in case where an informal arrangement of financial support is needed, the buyer will help in some way or form. As such, there is no need of going through the RF program adoption process which may seem to invited suppliers as complex, time consuming, and with a low net benefit. Therefore, if buyers want to improve their strategy in terms of ex-ante RF program adoption assessment by the suppliers, and consequently increase program adoption, they should **maintain such an optimum level of BSR satisfaction whose net benefits are not perceived as higher than the ones of a RF program**. So, within the context of a RF program adoption assessment by the invited suppliers, it seems that too much of a good

thing (being BSR satisfaction) has the opposite effect from the one expected. Therefore, the notion of an equilibrium point of BSR satisfaction which needs to be found and implemented, seems to be more appropriate when it comes to the adoption strategy followed and the success of SCF programs.

Thirdly, regarding the ex-post program assessment process (as presented in the suggested strategic framework), buyers could **improve BS trust**, as perceived by the suppliers, by mainly improving **information exchange** and **BS goal congruence** as well as **buyer credit worthiness** and **working capital benefits,** as perceived by suppliers. Therefore, designing a RF program adoption strategy that clearly communicates the mutual benefits of such a program to the invited suppliers and, as such, leads to a higher level of BS goal alignment, is critical. Moreover, buyers that follow all trade credit terms and conditions agreed upon and communicate the overall credit rating/worthiness to their suppliers, could improve the RF program adoption assessment of the suppliers. This point is also highlighted by the **moderating effect of the level of buyer overdue payments** (both in term of overdue period as well as amount) to the ex-ante and ex-post adoption assessment process, which indirectly affects the supplier perceived RF program attractiveness as well as the risk of buyer opportunistic behavior respectively.

Fourthly, considering the points above, when buyers design, implement or adjust their RF program adoption strategy, they should consider that there is **a trade-off between BSR satisfaction and BS trust** when it comes to the suppliers' assessment process. As such, through appropriate actions, they should try to maintain the 1st one on an optimum level and improve the 2nd one

as much as possible. Moreover, when designing such a strategy and subsequently promoting such RF programs' offerings & contracts, the buyers should be making an effort in minimizing supplier perceived adoption pressure, as well as the impression that in case of adoption this will be considered as **a financial distress signal by the supplier**. In addition to that, buyers should assure the invited suppliers in any feasible way that adopting such a program, will not **lead to any buyer opportunistic behavior** and that all agreed upon RF program terms and conditions (such as payment terms and conditions) as well as other previous agreements, will not be renegotiated without suppliers' consent.

Finally, there are certain business insights generated from the financial point of view. More specifically, the perception that **cash constraint suppliers** should be more attracted to RF programs (a notion which is theoretically supported by the famous Pecking Order theory within the field of finance) is not confirmed by the research results. However, despite the inconclusiveness in this research point due to lack of statistical significance, I believe that buyers, when promoting such RF programs, could at least highlight that such programs are not indented for such companies only. Furthermore, the research findings indicate that **suppliers with more payment problems experienced (with the buyer who is inviting them to adopt such a RF program) and better liquidly**, will assess the RF program more positively, as the perceived RF program attractiveness will be relatively higher, ceteris paribus BSR satisfaction, and their perceived risk of buyer opportunism will be relatively lower, ceteris paribus fear of financial distress signaling. From a macroeconomic point of view, the answer which could be provided in relation to the relatively low market share of RF programs, compared

to the global factoring market, is that the RF submarket may be relatively smaller due to a negative assessment of RF program from suppliers because of **low BS trust and potentially high perceived risk of buyer opportunism,** following such an adoption (ceteris paribus all other important financial, legal and operational factors related to RF programs). Furthermore, an additional potential reason of that phenomenon could also be the invited suppliers' **false perceptions about what kind of financial signal such a program adoption may give** to the buyer and the market, as well as any **false "translation" or understanding of what a very positive BSR satisfaction could offer** to the supplier in times where he may be in need of some kind of financial support. Therefore, suppliers may be mistakenly thinking that their strong ties and positive collaboration with the specific large buyer offering such a RF program is, in a way, a guarantee that if they ever need some form of financial backing, this buyer will be able to help them and as such there is no need for them to adopt the RF program offered. Considering all the above business insights, I am hoping that the strategic framework suggested and examined could be used as a practical guide/tool by the buyers who wish to design a RF program adoption strategy and subsequently develop and promote a RF program to their suppliers with the end-target of achieving the highest possible adoption rate and, through that, increase the mutual net benefits such supply chain finance programs can provide to both invited suppliers and large retailers.

5.4 Research Limitations and Future Research

As in most empirical research studies conducted, there are certain limitations which need to be acknowledged as well as specific directions for future research initiatives which could be suggested on the specific subject within the wider academic field of SCF. More specifically, it should be acknowledged that, even though our sample of suppliers examined (113 suppliers) is considered both statistically acceptable and representative of the wider industry of consumer goods & services, the research findings should be further supported, or not, by additional similar future research which will not only enhance our understanding in relation to the suppliers' RF program adoption process but it could also identify and highlight differences due to research context (e.g. RF programs offered by other major retailers to suppliers with dissimilar financial status, in different countries, and under diverse macroeconomic or microeconomic conditions).

This research focus was based on a representative sample of companies (113 suppliers) that are operating in various subsectors within the wider consumer goods and services' industry. As such, there was no research focus on a specific subsector or suppliers of specific product categories since there was rather limited representation per subsector within the available sample and, in any case, this was not one of the major purposes of this empirical research. Therefore, considering that my research findings should be viewed from the point of view of a representative sample of consumer goods and services suppliers that are collaborating with a major supermarket group which is larger than them (as measured by sales or total assets) and in a relatively better credit rating/working capital cost status (as measured by the average interest rate charged for working

capital lending by banks), future research could be conducted by examining any potential differences in a RF program's adoption assessment process followed by suppliers who are: (**1**) collaborating with one or more supermarkets or other type of retailers which are not included in the 15 largest globally, or are in a different financial condition, and some of them offer a RF program (I would assume that in such a case, a supplier's assessment will be based not only on the RF program's different net benefit derived by the working capital cost variance, but also on the comparison between different RF programs offered); (**2**) operating within different subsectors of product categories which may result to different characteristics in relation to a supplier's financial and/or operational status and performance (e.g. suppliers from a consumer goods and services' subsector with a relatively higher average inventory/sales ratio compared to another subsector, or a lower product life cycle, or a higher level of required capital expenditures, etc.)

Furthermore, in relation to the suppliers' responses to the questionnaire, it should be noted that all possible measures were taken to reduce as much as possible any answer bias. More specifically, prior to their replies, suppliers were informed that anonymity of their answers is guaranteed and that Metro group is not involved in the process of collecting and analyzing survey results. However, despite all precautions taken place, there is a possibility that certain suppliers may have been biased, due to a potential false signaling perception or fear that their answers will not be kept anonymous. Having said that, the fact that I have collected and analyzed replies from suppliers who belong in all three groups of SCF services offered by Metro group (those who haven't adopt any service, those

who have adopted only factoring related services and those who have adopted the full package of RF services) which are utilized and analyzed in combination with quantitative data, mitigates this possibility.

Regarding the research results, considering that there is a certain level of BSR quality components' variation (BS Satisfaction and BS Trust) which is not explained by the common finance and non-finance related antecedents I focused on and examined, there should be certain additional antecedents that affect BSR quality and subsequently the adoption assessment process followed by invited suppliers (as depicted by the suggested RF program supplier assessment framework). As such, future research could be conducted focusing on the examination of other common finance and non-finance drivers which may have a significant impact to the major BSR quality components, as perceived by suppliers who have been invited to adopt and assess a RF program offered by a major retailer.

Moreover, considering the variation explained by the examined drivers of the suppliers' ex-post and ex-ante RF adoption assessment process (based on the elements of RF program attractiveness and the risk of buyer opportunism following a potential adoption), it becomes clear that additional antecedes (such as, for example, a RF program's quantitative costs and net benefits offered), could be further examined in order to better understand and explain the adoption assessment process followed by invited suppliers. More specifically, in relation to the ex-ante FR program assessment process, considering that the examined driver of "supplier cash ratio" was not supported from my findings in terms of the relation's significance but only in terms of its direction, I believe that further

research could be conducted related to this ex-ante RF program adoption assessment antecedent as the notion that cash constraints suppliers should find RF programs more attractive, is considered an important hypothesis for further exploration not only from the academic perspective but also from the professional perspective.

6. Conclusion

The focus of this empirical research study, which is positioned within the intersectional research area of BSRs and SCF, is on the RF program assessment process suppliers follow in order to decide if they are going to adopt, or not, such a program, which is offered by a major retailer they are collaborating with. More specifically, by utilizing the research findings, a two-stage RF program adoption assessment framework has been developed which is based on an ex-ante supplier assessment of a RF program's attractiveness (ex-ante assessment component) and an ex-post supplier assessment of the risk of buyer opportunism, following potential adoption (ex-post assessment component). This assessment is driven by two critical BSR quality components (BSR satisfaction / BS trust and their common finance and non-finance antecedents) along with the additional important drivers of the suppliers' cash ratio, which could make such a RF program more or less attractive, and their fear of financial distress signaling, in case they adopt such a program. Furthermore, within each stage of supplier assessment, there are certain examined finance related moderators (buyer payments' delay, buyer overdue payments and supplier current ratio), affecting the impact of BSR quality or finance related drivers to each level's major assessment component.

The testing results of the adoption assessment framework suggested, provide certain insights from an academic as well as business point of view. More specifically, in terms of the academic perspective, the findings indicate that BSR quality seems to be important to the suppliers' assessment and decision for adopting a RF program. As such, and in alignment with major principles of AT,

the level of information exchange and goal congruence are important drivers of the supplier perceived BSR quality. Furthermore, the risk of buyer opportunism, which is based on the principles of TCE theory and is considered a potential source of transaction costs (in case of any potential violation of the contractual or relational agreement), is considered an important element of the suppliers' ex-post adoption assessment. Furthermore, in alignment with the perspective of SCT, the research findings indicate that BSR satisfaction and BS trust (explained by the relational aspect of the theory), goal congruence (explained by the cognitive aspect of the theory) and information exchange (explained by the structural aspect of the theory) are all considered important within the context of a SCF program adoption process followed by invited suppliers.

In terms of the insights generated from the business perspective, the research results seem to be supporting the suggested strategic framework of supplier assessment process. As such, this framework could be considered by large retailers as a guide or tool when they design, implement and promote such SCF programs to their suppliers. More specifically, the findings indicate that both finance and non-finance related drivers matter in the 2-stage assessment process conducted by the suppliers but information exchange seems to be the most important one for both levels of supplier assessment. Therefore, buyers when they design and develop their RF program adoption strategy, they should consider providing accurate, frequent, detailed, and in-depth information about the RF program's specifics, while promoting it and in written (through the RF program's contract).

Secondly, in terms of strategic actions related to the level of RF program adoption, buyers could improve BSR satisfaction by mainly improving information exchange and working capital benefits as well as their credit worthiness towards their supplier due to their collaboration. However, the higher the supplier perceived BSR satisfaction, the less attractive a RF program is to suppliers and this could be explained by SCT in the sense that suppliers who are very satisfied, may believe that in case where an informal arrangement of financial support is needed, the buyer will help in some way or form, due to the social capital generated through the collaboration so far, and therefore there is no need of going through a RF program adoption process (which may seem to suppliers as complex, time consuming, and with a low net benefit). Therefore, if buyers want to improve their strategy in terms of ex-ante RF program adoption assessment by the suppliers, and consequently increase program adoption, they should maintain such an optimum level of BSR satisfaction whose net benefits are not perceived as higher than the ones of a RF program.

Thirdly, regarding the ex-post program assessment process, buyers could improve BS trust, as perceived by the suppliers, by mainly improving information exchange and BS goal congruence as well as buyer credit worthiness and working capital benefits, as perceived by suppliers. Therefore, designing a RF program adoption strategy that clearly communicates the mutual benefits of such a program to the invited suppliers and, as such, leads to a higher level of BS goal alignment, is critical. Moreover, based on the tested moderators' results, buyers that follow all trade-credit terms and conditions agreed upon and communicate

the overall credit rating/worthiness to their suppliers, could improve the RF program adoption assessment conducted by the suppliers.

Fourthly, considering the points above, when buyers design, implement or adjust their RF program adoption strategy, they should consider that there is a trade-off between BSR satisfaction and BS trust when it comes to the suppliers' assessment process. Moreover, buyers should be making an effort in minimizing supplier perceived adoption pressure, as well as the impression that in case of adoption this will be considered as a financial distress signal by the supplier, and should assure the invited suppliers in any feasible way that adopting such a program, will not lead to any buyer opportunistic behavior (negatively affecting all agreed upon RF program, or other, terms, conditions and agreements).

Furthermore, there are certain business insights generated from the financial perspective. More specifically, the perception that cash constraint suppliers should be more attracted to RF programs (an argument which is theoretically supported by the finance theory of Pecking Order) is not confirmed by the research results. However, despite the inconclusiveness in this point due to lack of statistical significance, buyers, when promoting such RF programs, could at least highlight that such programs are not indented for such companies only. Furthermore, the findings indicate that suppliers with more payment problems experienced (with the buyer who is inviting them to adopt such a RF program) and better liquidly, will assess the RF program more positively. Finally, from a macroeconomic point of view, in relation to the relatively low market share of RF programs compared to the global factoring market, my findings indicate that the RF submarket may be relatively smaller due to a negative assessment

of RF programs from suppliers because of low BS trust and potentially high perceived risk of buyer opportunism, following such an adoption (ceteris paribus all other important financial, legal and operational factors related to RF programs). Furthermore, an additional potential reason of that phenomenon could also be the invited suppliers' false perceptions about what kind of financial signal such a program adoption may give to the buyer and the market as well as any false understanding of what a very positive BSR satisfaction could offer to the supplier in times where he may be in need of some kind of financial support.

Considering the above academic and business insights, I am hoping that I have managed to provide certain interesting answers to the initially stated research questions regarding: **(1)** the way the exposure and invitation to SCF programs, such as RF, is related to the drivers and quality of a BSR; **(2)** the important drivers of invited suppliers' assessment process regarding a potential RF program adoption, and **(3)** the identified RF market phenomenon (of low market share in comparison to the global factoring market) which is occurring within supply chains and specifically between large retailers and suppliers.

Finally, I hope that through the strategic framework suggested and examined, I have contributed towards a better academic understanding of this specific subject of SCF programs' adoption and provided a practical guide to be used by buyers who wish to design a RF program adoption strategy and subsequently develop and promote a RF program to their suppliers with the end-target of achieving the highest possible adoption rate and subsequently increase the mutual net benefits such SCF programs can provide to both invited suppliers and large retailers.

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Appendix A: Exhibits

Exhibit 11: Focus of different Organizational Theory Perspectives in relation to Supply Chain Management

Organizational Theory (OT) Perspective	Typical Supply Chain: Focus, Findings & Questions	Key researchers on interdisciplinary (OT-SCM) perspective
Agency theory	- Constructs of contracts as well as incentive compatibility, goals & risk preferences. - Agents (e.g. suppliers, vendors) are risk averse and generally more so than risk neutral principals (e.g. buyers, retailers). - Interests / goals of supply chain members only partially aligned (conflicts of interest often arise within typical supply chains). - Under what conditions a supply chain member (supplier or buyer) is likely to attempt to exploit other members? - Strong potential for opportunism. Guide investigation of the effects of such opportunistic behavior on supply chain effectiveness and reveal how the risk of opportunism within supply chains can be prevented or minimized.	Morgan, Kaleka & Gooner Ketchen & Hult Zsidisin & Ellram
Transaction cost economics (TCE)	- Focus on transaction costs (direct and/or opportunity) as the basis of "make" (own production - hierarchies) or "buy" (outsourcing - markets) decisions. - Opportunism undermines trust (short term costs are a primary consideration). - Focus on constructs related to asset specificity, environmental & behavioral uncertainty, contracts and monitoring. - Low adaptation, performance evaluation & monitoring costs in relation to hierarchies and market transactions.	Holcomb & Hitt Ireland & Webb McCarter & Northcraft Morgan, Kaleka & Gooner
Social capital theory	- Mix of shared and firm-level goals, values, and experiences limit shared sense making and performance. - Relational capital refers to the trust, obligation, and identification present between actors in a relationship - Cognitive capital represents the shared goals, norms, vision and values between actors - Structural capital is the configuration of linkages between people and units	Krause, Handfield & Tyler, Ireland & Webb, Nahapiet & Ghoshal, Tsai & Ghoshal
Resource dependence theory	- Each member tries to avoid becoming dependent on others and tries to make others dependent on it.	Crook & Combs Ireland & Webb
Institutional theory	- Rely heavily on industry recipes & "best practices" to guide supply chain management activities. - When should supply chain practices mimic industry "best practices" versus reflect the participants' unique characteristics?	Rogers, Purdy, Safayeni & Duimering
Game theory	- Some members use free riding, hold up, and leakage to benefit themselves and to the loss of the supply chain.	McCarter & Northcraft
Network theory	- Strong and weak ties formed between firms on a case-by-case basis rather than strategically. - The importance of the structural location of the network as well as the level of trust and cooperation. - The importance of social capital development and its implications.	McCarter & Northcraft Morgan, Kaleka & Gooner
Strategic choice	- Strategic decisions made with concern for the firm as the primary driver. This approach constrains firms to be using a generic strategy such as prospector or low-cost leader. - By linking to specialist firms with complementary strategies and capabilities, each major competitor in an industry can create its own supply chain. Overall, industry performance improves as each supply chain becomes more efficient.	Miles & Snow
Resource-based view	- Assumes that unique resources reside within firms. Supply chain management is thus a tool to complement these resources. - Are certain supply chain practices or characteristics rare, valuable, and difficult to imitate? - By incorporating the ideas and expertise of their supply chain partners, leading firms can direct the network towards innovation as well as cost reduction. Overall, the industry can be innovative as well as efficient.	Holcomb & Hitt Miles & Snow
Knowledge-based view	- Assumes that different types of knowledge reside within firms. Supply chain management is thus a tool to complement these types of knowledge. - To what extent does knowledge exchange facilitates intensive supply chain action and improved outcomes? - In the future, groups of firms in complementary markets will form collaborative networks in which knowledge is created and shared for business purposes. These multi-firm network organizations will be able to pursue strategies of continuous innovation and will grow across as well as within industries.	Holcomb & Hitt Miles & Snow

Sources: *Ketchen & Hult, 2007; Miles & Snow, 2007; Ketchen & Giunipero, 2004; Morgan, Kaleka & Gooner, 2007.*

Exhibit 17a: Metro Group - Consolidated Financial Statements / Income Statement

Income statement
for the financial year from 1 October 2014 to 30 September 2015
Source: *Annual Report 2014 / 2015 – Consolidated Financial Statements of Metro AG*

€ million	2013/14[1]	2014/15
Sales	**59,937**	**59,219**
Cost of sales	–48,176	**–47,577**
Gross profit on sales	**11,761**	**11,642**
Other operating income	1,298	**1,275**
Selling expenses	–10,513	**–10,221**
General administrative expenses	–1,326	**–1,467**
Other operating expenses	–143	**–518**
Earnings before interest and taxes EBIT	**1,077**	**711**
Result from associates and joint ventures	9	**2**
Other investment result	78	**0**
Interest income	48	**62**
Interest expenses	–434	**–344**
Other financial result	–242	**–172**
Net financial result	**–541**	**–452**
Earnings before taxes EBT	**536**	**259**
Income taxes	–539	**–480**
Profit or loss for the period from continuing operations	**–3**	**–221**
Profit or loss for the period from discontinued operations after taxes	185	**935**
Profit or loss for the period	**182**	**714**
Profit or loss for the period attributable to non-controlling interests	55	**42**
from continuing operations	(54)	**(42)**
from discontinued operations	(1)	**(0)**
Profit or loss for the period attributable to shareholders of METRO AG	127	**672**
from continuing operations	(–57)	**(–263)**
from discontinued operations	(184)	**(935)**
Earnings per share in € (basic = diluted)	**0.39**	**2.06**
from continuing operations	(–0.18)	**(–0.80)**
from discontinued operations	(0.57)	**(2.86)**

Exhibit 17b: Metro Group - Consolidated Financial Statements / Income Statement per Sales Division

Source: *Annual Report 2014 / 2015 – Consolidated Financial Statements of Metro AG*

	Continuing operations of the group					
	METRO Cash & Carry		Media-Saturn		Real	
€ million	**2013/14**	**2014/15**	**2013/14**	**2014/15**	**2013/14**	**2014/15**
External sales (net)	30,513	**29,690**	20,981	**21,737**	8,432	**7,735**
Internal sales (net)	47	**11**	2	**2**	0	**7**
Sales (net)	30,560	**29,701**	20,983	**21,738**	8,432	**7,743**
EBITDAR	1,654	**1,621**	1,234	**1,261**	404	**327**
EBITDA	1,460	**1,424**	537	**595**	172	**142**
Depreciation/amortisation/impairment losses	557	**462**	295	**267**	153	**583**
Reversals of impairment losses	1	**13**	1	**7**	0	**0**
EBIT	904	**975**	244	**336**	19	**–441**
Investments	441	**750**	244	**256**	172	**241**
Segment assets	11,578[3]	**11,375**	5,124[3]	**5,296**	3,121	**2,760**
thereof non-current	(7,999)	**(7,780)**	(1,542)	**(1,464)**	(2,083)	**(1,736)**
Segment liabilities	5,676[3]	**5,646**	5,597[3]	**5,674**	1,042	**1,484**
Selling space (1,000 m²)	5,576	**5,468**	3,070	**3,034**	2,145	**2,031**
Locations (number)	766	**764**	986	**1,007**	311	**293**

Exhibit 17c: Metro Group - Consolidated Financial Statements / Balance Sheet - Assets

Balance sheet as of 30 September 2015

Source: *Annual Report 2014 / 2015 – Consolidated Financial Statements of Metro AG*

Assets

€ million	30/9/2014	30/9/2015
Non-current assets	**15,572**	**13,207**
Goodwill	3,671	**3,301**
Other intangible assets	380	**464**
Property, plant and equipment	10,025	**7,955**
Investment properties	223	**170**
Financial investments	71	**117**
Investments accounted for using the equity method	95	**184**
Other financial and non-financial assets	272	**292**
Deferred tax assets	835	**724**
Current assets	**12,584**	**14,449**
Inventories	5,946	**5,439**
Trade receivables	560	**702**
Financial assets	1	**6**
Other financial and non-financial assets	2,981[1]	**3,435**
Entitlements to income tax refunds	223	**202**
Cash and cash equivalents	2,406	**4,415**
Assets held for sale	467[1]	**250**
	28,156	**27,656**

Exhibit 17d: Metro Group – Consolidated Financial Statements / Balance Sheet – Equity & Liabilities

Equity and liabilities

Source: *Annual Report 2014 / 2015 – Consolidated Financial Statements of Metro AG*

€ million	30/9/2014	30/9/2015
Equity	**4,999**	**5,172**
Share capital	835	**835**
Capital reserve	2,551	**2,551**
Reserves retained from earnings	1,602	**1,793**
Non-controlling interests	11	**–7**
Non-current liabilities	**6,921**	**6,841**
Provisions for pensions and similar obligations	1,684	**1,270**
Other provisions	478	**492**
Borrowings	4,453	**4,731**
Other financial and non-financial liabilities	176	**206**
Deferred tax liabilities	130	**142**
Current liabilities	**16,236**	**15,643**
Trade liabilities	10,075[1]	**9,550**
Provisions	615	**628**
Borrowings	2,615	**2,635**
Other financial and non-financial liabilities	2,528	**2,488**
Income tax liabilities	198	**148**
Liabilities related to assets held for sale	205[1]	**194**
	28,156	**27,656**

Exhibit 17e: Metro Group – Consolidated Financial Statements / Balance Sheet – Cash Flow

Cash flow statement[1]
for the financial year from 1 October 2014 to 30 September 2015
Source: *Annual Report 2014 / 2015 – Consolidated Financial Statements of Metro AG*

€ million	2013/14[2]	2014/15
EBIT	1,077	711
Depreciation/amortisation/impairment losses/reversal of impairment losses of assets excl. financial investments	1,151	1,465
Change in provisions for pensions and other provisions	19	104
Change in net working capital	3	–305
Income taxes paid	–383	–547
Reclassification of gains (–) / losses (+) from the disposal of fixed assets	–101	–214
Other	–12	381
Cash flow from operating activities of continuing operations	1,754	1,595
Cash flow from operating activities of discontinued operations	254	251
Cash flow from operating activities	2,008	1,846
Corporate acquisitions	0	–251
Investments in property, plant and equipment (excl. finance leases)	–762	–986
Other investments	–365	–619
Disposals of subsidiaries	–89	66
Disposal of long-term assets	522	389
Gains (+) / losses (–) from the disposal of fixed assets	101	214
Cash flow from investing activities of continuing operations	–593	–1,187
Cash flow from investing activities of discontinued operations	–122	1,972
Cash flow from investing activities	–715	785
Dividends paid		
to METRO AG shareholders	0	–319[3]
to other shareholders	–86	–45[4]
Redemption of liabilities from put options of non-controlling interests	–1	0
Proceeds from long-term borrowings	3,372	3,537
Redemption of borrowings	–4,255	–3,624
Interest paid	–406	–334
Interest received	47	59
Profit and loss transfers and other financing activities	–23	8
Cash outflow for financing of discontinued operations	0	0
Cash flow from financing activities of continuing operations	–1,352	–718
Cash flow from financing activities of discontinued operations	–96	121
Cash flow from financing activities	–1,448	–597
Total cash flows	–155	2,034
Currency effects on cash and cash equivalents	–1	–25
Total change in cash and cash equivalents	–156	2,009
Cash and cash equivalents as of 1 October	2,564	2,408
Cash and cash equivalents shown under IFRS 5 assets	0	2
Cash and cash equivalents as of 1 October	2,564	2,406
Total cash and cash equivalents as of 30 September	2,408	4,417
Cash and cash equivalents shown under IFRS 5 assets	2	2
Cash and cash equivalents as of 30 September	2,406	4,415

Exhibit 21: Metro Group Polish suppliers collaborating with MIAG – Interview Questions

Name:_____
Company:_____
Position:_____
Time/Date:_____

General Motivation of MIAG Services Adoption or Non-Adoption:

- Which elements of the MIAG programme did you join?
- Why did you join? Short term cash (flow) issues? Need for credit? Exhaustive use of existing credit lines? Working Capital issues? Balance sheet issues?
- What were your payment terms? Do you offer early payment discounts?
- What other reasons to join influenced you (customer –related, competitor related) to join?
- What were some considerations that you made you hesitate to join?

Role of Metro Cash & Carry or Real:

- Overall, how is your relationship with Metro CC or Real?
- How has joining the programme influenced your relationships with Metro CC or Real?
- Has Metro exerted any pressure to join? Has Metro's buying department approached your to re-negotiate the purchasing price?

Role of MIAG:

- What in your own word is the role of MIAG in the Metro Group?
- Overall, how is your relationship with MIAG?
- How has joining the programme influenced your relationships with MIAG?
- Does MIAG keep its promises?

MIAG On-Boarding:

- Overall, how did you like the on-boarding process?
- Banks: How did you like working with Citibank? Did you have to change your banking partner to join the programme? How has joining the programme influenced your relationships with your bank? Have you still pledged parts or all of your accounts receivables to some financial institution?
- Contracts and Documentation: Were the contracts easy to understand?
- Internal Processes: Which internal processes did you have to adapt? At what cost?
- Internal Barriers: How did your CFO/Treasurer and Sales People react?

Cost and Benefits of Programme

- Overall, were the concepts that MIAG proposed easy to understand?
- How intensively do you use the programme?
- What in your own words are the cost & benefits of the programme? Flexible working capital? Access to capital to grow? Reduced capital cost (how much compared to internal capital cost)? Credit line untouched? (What is your credit rating? What is your cost of capital?)
- Do you see disadvantages in joining the programme? How satisfied are you? Who benefits most?

Other questions:

- How have recent economic trends influenced your decision to join and use the programme?
- Have you talked to other suppliers why they joined or not joined? What did they say?

Exhibit 22a: Metro Group Polish suppliers – Six Interviews' Output Summary

1. MVD Service-Specific Reasons

In favor of MVD Program Adoption:

- (+) Close full invoices (Expo)

Against MVD Program Adoption:

- (-) MSC: MSC as prerequisite when Metro unlikely to default (P&G, Expo)
- (-) Per Invoice Fee when many deliveries (P&G, Kapp)
- (-) Average attractive interest rates (Several)
- (-) Discountable amount (80%) further reduced by promotional allowances (Remode, Kapp, BSG)
- (-) Only for non-disputed invoices (P&G)
- (-) Invoices with claim cannot be discounted (Nestle)
- (-) Should be also for export in Euros (Expo, Remode)
- (-) Not available for export from Poland to other Eastern Countries (Kapp, Remode)
- (-) True cost of MVD unclear (Remode)
- (-) Not well explained (Nestle)

2a. MIAG Relationship-Specific Reasons

In favor of MVD Program Adoption:

- (+) MIAG have very professional people (All)
- (+) MIAG is helpful, honest, competent (Half)
- (+) MIAG Systems are easy to use
- (+) On-boarding is easy. Legalese is not an issue (Overall)
- (+) Close Ffll invoices (Expo)

Against MVD Program Adoption:

- (-) MIAG is virtual, far away (Kapp)

2b. Makro/Real Relationship-Specific Reasons

In favor of MVD Program Adoption:

- (+) Good relationship with Makro/Metro (All)
- (+) Readiness to support MIAG (P&G)

Against MVD Program Adoption:

- (-) Opportunistic Behaviour (Remode, Kapp, BSG)
- (-) Fear of Forced Renegotiation (Remode, Kapp, BSG)
- (-) Some invoices still open despite MVD, MSC (BSG)
- (-) Avoid Penalties (Expo, BSG)

2c. Collaborating Bank (Citi) Relationship-Specific Reasons

In favor of MVD Program Adoption:

No comments

Against MVD Program Adoption:

- (-) Bank involvement increases cost (Overall)
- (-) Bank involvement reduces margin for Makro/Real (P&G)
- (-) (Traditional) Factoring reduces payment transparency between supplier and MIAG (P&G)
- (-) Reputation banks in general and Citi specifically (Remode)

Exhibit 22b: Metro Group Polish suppliers – Six Interviews' Output Summary

3. Finance-Specific Reasons

In favor of MVD Program Adoption:

- (+) No alternative source of funds (Remode)
- (+) Credit might be cheaper but MVD is pay as you go (Remode, Expo)
- (+) Low Equity (BSG)
- (+) No need for Credit (Kapp)

Against MVD Program Adoption:

- (-) Own credit cost lower (Nestle, P&G)
- (-) Short payment terms already (P&G)
- (-) Intercompany Pooling (P&G, Nestle)

4. Product & Company-Specific Reasons

In favor of MVD Program Adoption:

- (+) Import in volatile currencies (Remode)
- (+) Seasonal goods (Remode, Kapp)
- (+) Unstable, unpredictable Sales (BSG)
- (+) Small Company (BSG, Expo, Remode)
- (+) Fast Growing requiring working capital turnaround (BSG)
- (+) Manufacturer have pledges and get credit easier than distributors (Kapp)
- (+) Readiness to support MIAG (P&G)

Against MVD Program Adoption:

No comments

5. Other Specific Reasons

In favor of MVD Program Adoption:

No comments

Against MVD Program Adoption:

- (-) Avoiding Precedent (P&G)
- (-) Factoring not well regarded (P&G)
- (-) Complexity of adding a payment channel (P&G)
- (-) Administrative Process, Paperwork (Kapp)
- (-) Direct Debit Preferred (P&G)
- (-) Accounting issues resolved (P&G)

Exhibit 22c: Metro Group Polish suppliers – Six Interviews' Output Summary

6. Important Comments

In favor of MVD Program Adoption:

- (+) "We appreciate very much that Metro is offering these kinds of services. They are very proactive with this. We see MVD as a potential cooperation item. Overall, we see it very positive that Metro is thinking about this, and that they have the capabilities for this when nobody else is doing it. I think it is a competitive advantage for Metro." (**BSR satisfaction**)
- (+) "MVD was the first time Metro wanted to give something back. When MVD came, I realized that for the first time Metro was helping us. When a company is taking from you something all your life and then offers something at first you don't believe it. It is a very wise idea, it is the best idea that Metro had for its suppliers." (**BSR satisfaction**)
- (+) "I liked the MVD program. It was giving us what we needed; proper factoring, without recourse, with a platform, where we could close invoices completely. Easy to use, practical. From my personal point of view: the best system." (**BSR satisfaction**)

Against MVD Program Adoption:

- (-) "When I first heard about MVD I thought it was another way of Metro extracting money from us. My first thought was therefore very negative." (**Risk of opportunism, Trust**).
- (-) "Once a supplier has started to work with MVD it will become harder to switch to a normal bank." (**Lock-in situation**).
- (-) "When I first saw MVD I thought they are trying to get you to from two different sides; you avoid them one side of the bowl but then they get you on the other side." (**Risk of opportunism, trust**)
- (-) "Metro sometimes changes agreed contracts, i.e. you agree to a fixed contribution but then they take away business and the fixed cost must be spread across less volume." (**Opportunistic behavior**).
- (-) "Negotiations with Makro are not very effective." (**BSR satisfaction element**).
- (-) "Initially, we were afraid that Metro could come back and say: if you can afford this financing cost, you still have a too high margin, and we want something from that; but so far it didn't happen." (**Risk of opportunism, Trust**).
- (-) "Perhaps, suppliers are sometimes simply sick of Metro. They might think this is just another trick. The amount of conditions we pay for Metro is much higher than at other retailers. A per cent here and there. And Metro knows this." (**BSR satisfaction, Trust**)
- (-) "MIAG is a professional financing services provider but they don't sell it professionally." (**Information quality**)
- (-) "MIAG should come now during the crisis (2009) and make a better point in favor of it. MIAG seems a much better offer now than last year". (**Information quality, Macroeconomic conditions**)

Exhibit 23a: Basic characteristics of responders' sample size (113 Suppliers)

N/N	Sector	Respondent Name	Position	Company Name (Metro Group Supplier)	Company Age	Sales in Eur. (2008)	No. of Employees	MIAG Services Adoption (No, MSC, MVD)
1	Sport	Full anonymity of respondents and companies has been agreed with Metro Group	Co-owner	Full anonymity of respondents and companies has been agreed with Metro Group	7	43.234.820 €	461	MVD
2	Sweets / Confectionary		Co-owner		9	28.184.783 €	103	No adoption
3	Children's wear		Finance Manager		14	79.365 €	15	MSC
4	Household products		General Manager		5	31.050.551 €	6	MSC
5	Dairy		Procurement		19	186.243 €	24	MSC
6	Office		Head of Finance		18	23.548.490 €	140	No adoption
7	Office		Head of Finance		18	24.371.862 €	140	No adoption
8	Meat		National Director / Key Account		16	126.888.733 €	1.267	MSC
9	Meat		National Director / Key Account		16	126.888.733 €	1.267	MSC
10	Electronics / RTV		Key Account Manager		15	30.712.829 €	17	No adoption
11	Deep Frozen		Vice Sales Director		17	132.275 €	100	No adoption
12	Men's Wear		Chief Accountant		5	29.402.945 €	11	MSC
13	Seasonal Articles		Co-owner		18	29.257.889 €	439	MVD
14	Men's Wear		CEO		5	38.923.851 €	429	No adoption
15	Office		Key Account Manager		20	24.772.318 €	402	No adoption
16	Office		Key Account Manager		20	26.967.548 €	416	No adoption
17	Leather goods		Sales Director		17	1.288.271 €	101	MSC
18	Detergents		Finance Director		26	52.079.069 €	578	MSC
19	Edible Grocery		Key Account Manager		10	12.023.115 €	93	MSC
20	Canned Goods		Key Account Manager		20	43.115.075 €	479	No adoption
21	Fresh Fish		C-level		7	3.115.873 €	12	No adoption
22	Fresh Fish		C-level		7	3.115.873 €	12	No adoption
23	Dairy		CEO		2	41.534.353 €	422	MSC
24	Dairy		CEO		2	41.629.519 €	426	MSC
25	Bakery		Finance Director		19	30.484.458 €	395	MSC
26	Edible Grocery		President		14	12.306.356 €	192	MVD
27	Edible Grocery		President		14	12.306.356 €	192	MVD
28	Seasonal Articles		CEO / VICE DIRECTOR		7	31.518.556 €	20	MVD
29	Delicatessen		Owner		9	33.071.856 €	50	MVD
30	Home Electrics / White Goods		Board Member		3	435.450 €	17	MVD
31	Underwear / Hosiery		Key Account Manager		28	56.707.792 €	594	MSC
32	Edible Grocery		Key Account Manager		20	41.752.185 €	449	MVD
33	Detergents		Key Account		13	60.701.796 €	550	No adoption
34	Edible Grocery		Finance Manager / Key Account		26	48.666.361 €	613	MVD
35	Beers / Soft Drinks		Manager Reconciliation & Debt Re		13	61.022.592 €	1.200	MVD
36	Meat		Vice Director		17	1.084.656 €	41	MVD
37	Home Electrics / White Goods		Chief Accountant		23	65.705.301 €	713	No adoption
38	Sport		Co-owner		7	44.432.678 €	387	MVD
39	Meat		Member of Board		13	77.006.562 €	44	MSC
40	Meat		CEO / Chief Accountant		22	55.425.952 €	350	MSC
41	Meat		CEO / Chief Accountant		22	55.425.952 €	350	MSC
42	Home improvement		Key Account Manager		79	36.433.437 €	538	No adoption
43	Home improvement		Key Account Manager		79	36.830.406 €	521	No adoption
44	Sweets / Confectionary		Finance Manager		16	40.410.747 €	409	No adoption
45	Household products		Owner / Key Account Manager		18	36.427.405 €	520	MVD
46	Household products		Owner / Key Account Manager		18	31.004.313 €	435	MVD
47	Edible Grocery		Bottled Oil Manager		13	28.062.422 €	160	MSC
48	Edible Grocery		Bottled Oil Manager		13	24.818.017 €	160	MSC
49	Office		COO		18	32.564.100 €	50	No adoption
50	Office		COO		18	31.173.113 €	50	No adoption
51	Electronics / RTV		President		8	2.116.402 €	14	MVD
52	Beers / Soft Drinks		Sales Director / Key Account		5	27.141.385 €	100	MSC
53	Home textiles		Finance Manager		17	43.422.731 €	285	MVD
54	Seasonal Articles		CEO		5	2.228.307 €	10	MVD
55	Men's Wear		Board Member		5	39.346.827 €	10	MSC
56	Underwear / Hosiery		Owner		20	29.398.842 €	11	MSC
57	Electronics / RTV		Chief Accountant		15	30.480.911 €	40	MVD
58	Toiletries		Owner		3	370.370 €	8	MVD

Exhibit 23b: Basic characteristics of responders' sample size (113 Suppliers)

N/N	Sector	Respondent Name	Position	Company Name (Metro Group Supplier)	Company Age	Sales in Eur. (2008)	No. of Employees	MIAG Services Adoption (No, MSC, MVD)
59	Spirits		Finance Director		11	119.048 €	10	MVD
60	Dairy	Full anonymity of respondents and companies has been agreed with Metro Group	Deputy Trade Director Key Accoun	Full anonymity of respondents and companies has been agreed with Metro Group	28	54.893.518 €	506	No adoption
61	Dairy		Key Account Manager		21	30.589.421 €	418	No adoption
62	Dairy		Key Account Manager		17	33.771.669 €	431	No adoption
63	Fruits / Vegatables		Trade Director		2	3.174.603 €	9	MSC
64	Toiletries		Co-Owner, Finance Director		19	60.231.129 €	499	MVD
65	Dairy		Chief Accountant		18	31.625.988 €	58	MSC
66	Dairy		Chief Accountant		18	32.810.258 €	58	MSC
67	Home improvement		President, Owner		32	57.900.978 €	599	No adoption
68	Household products		Key Account Executive - Consume		18	55.428.849 €	1.000	No adoption
69	Seasonal Articles		Finance Director		8	36.505.992 €	397	MSC
70	Household products		Finance Manager		20	39.299.616 €	451	No adoption
71	Household products		C-level		6	236.327 €	40	MVD
72	Household products		C-level		6	236.327 €	40	MVD
73	Sweets / Confectionary		Procurement		10	2.032.804 €	63	MSC
74	Sweets / Confectionary		Procurement		10	2.032.804 €	63	MSC
75	Dairy		President		6	41.584.358 €	15	MSC
76	Dairy		President		6	36.382.008 €	15	MSC
77	Detergents		Finance Manager		9	31.252.959 €	386	MSC
78	Detergents		Finance Manager		9	34.048.902 €	327	MSC
79	Office		Financial Director		18	4.063.216 €	370	No adoption
80	Meat		National Director / Key Account		59	66.075.873 €	715	MSC
81	Meat		National Director / Key Account		59	65.500.308 €	722	MSC
82	Sweets / Confectionary		Sales Director		17	48.808.038 €	500	No adoption
83	Toiletries		C-level		28	61.469.328 €	580	MSC
84	Home improvement		CEO		99	33.943.931 €	694	No adoption
85	Beers / Soft Drinks		Finace Director / Treasurer / Credi		9	226.620.794 €	2.000	No adoption
86	Beers / Soft Drinks		Finace Director / Treasurer / Credi		9	226.620.794 €	2.000	No adoption
87	Home textiles		Finance Manager		9	578.046 €	232	MVD
88	Home textiles		Finance Manager		9	578.046 €	232	MVD
89	Detergents		Deputy Sales Director		17	840.378 €	176	MSC
90	Detergents		Deputy Sales Director		17	840.378 €	176	MSC
91	Bakery		Owner		18	31.420.560 €	10	MSC
92	Dairy		Finance Director		14	7.936.508 €	20	No adoption
93	Dairy		Finance Director		14	7.936.508 €	20	No adoption
94	Household products		Manager		5	32.872.965 €	5	No adoption
95	Edible Grocery		Chief Accountant		9	34.175.422 €	180	MSC
96	Men's Wear		CEO		3	32.893.873 €	49	MVD
97	Home improvement		C-level		23	13.227.513 €	140	MVD
98	Seasonal Articles		Finance Director		21	555.556 €	23	MSC
99	Spirits		Co-owner		27	19.897.440 €	234	MSC
100	Spirits		Co-owner		27	19.897.440 €	234	MSC
101	Fruits / Vegatables		Finance Manager		17	38.353.488 €	379	MSC
102	Delicatessen		Controlling Specialist		17	10.651.323 €	2.250	MSC
103	Home Electrics / White Goods		Finance Director		19	37.137.600 €	445	No adoption
104	Home improvement		Finance Director		4	146.487 €	14	MVD
105	Meat		National Director / Key Account		26	169.785.479 €	1.569	MSC
106	Meat		National Director / Key Account		25	168.796.349 €	1.570	MSC
107	Sport		Owner		15	41.144.452 €	429	No adoption
108	Sport		Owner		15	35.362.989 €	417	No adoption
109	Office		Accountant		15	31.944.216 €	140	MSC
110	Detergents		Vice Board Member		42	8.691.925 €	149	No adoption
111	Detergents		Vice Board Member		42	8.691.925 €	149	No adoption
112	Sweets / Confectionary		Finance Director		17	168.586.729 €	1.380	No adoption
113	Sweets / Confectionary		Finance Director		17	178.229.250 €	1.534	No adoption

Exhibit 23c: Basic characteristics of responders' sample size (113 Suppliers)

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
118MI - Company, years since foundation	113	2	99	17,60	14,932	3,070	,227	12,030	,451
133MI - No. of employees - 2008	113	5	2250	371,33	454,633	2,132	,227	4,875	,451
Sales_08_EUR	113	79,365	226,620,794	38594881.99	43178327.86	2,569	,227	7,567	,451
Valid N (listwise)	113								

Sector		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Bakery	2	1,8	1,8	1,8
	Dairy	12	10,6	10,6	12,4
	Delicatessen	2	1,8	1,8	14,2
	Deep Frozen	1	,9	,9	15,0
	Meat	10	8,8	8,8	23,9
	Fresh Fish	2	1,8	1,8	25,7
	Fruits / Vegatables	2	1,8	1,8	27,4
	Canned Goods	1	,9	,9	28,3
	Edible Grocery	8	7,1	7,1	35,4
	Sweets / Confectionary	7	6,2	6,2	41,6
	Spirits	3	2,7	2,7	44,2
	Beers / Soft Drinks	4	3,5	3,5	47,8
	Detergents	8	7,1	7,1	54,9
	Toiletries	3	2,7	2,7	57,5
	Office	8	7,1	7,1	64,6
	Electronics / RTV	3	2,7	2,7	67,3
	Home Electrics / White Goods	3	2,7	2,7	69,9
	Household products	8	7,1	7,1	77,0
	Home improvement	6	5,3	5,3	82,3
	Home textiles	3	2,7	2,7	85,0
	Sport	4	3,5	3,5	88,5
	Seasonal Articles	5	4,4	4,4	92,9
	Men's Wear	4	3,5	3,5	96,5
	Children's wear	1	,9	,9	97,3
	Underwear / Hosiery	2	1,8	1,8	99,1
	Leather goods	1	,9	,9	100,0
	Total	113	100,0	100,0	

Adoption Categories

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No adoption	39	34,5	34,5	34,5
	MSC	46	40,7	40,7	75,2
	MVD	28	24,8	24,8	100,0
	Total	113	100,0	100,0	

Exhibit 23d: Major operational / financial indicators of responders' sample size (113 Suppliers)

Descriptives

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
118MI - Company, years since foundation	No adoption	39	27,69	30,631	4,905	17,76	37,62	5	99
	MSC	46	16,63	11,923	1,758	13,09	20,17	2	59
	MVD	28	11,75	6,530	1,234	9,22	14,28	3	26
	Total	113	17,60	20,674	1,945	15,39	23,09	2	99
128MI - Sales revenue (PLN) 2008	No adoption	39	183106331.1	208530850.5	33391660.10	115508449.3	250704212.9	50,000	856,626,600
	MSC	46	152722133.8	149035814.1	21974131.97	108463960.1	196980307.5	300,000	641,789,111
	MVD	28	82807243.79	77967806.68	14734530.48	52574484.50	113040003.1	450,000	230,665,399
	Total	113	145884671.6	163217663.8	15354226.24	115462240.5	176307102.7	50,000	856,626,600
25. MI_CRATIO_124_125_126/128_129	No adoption	39	,3422	,35265	,05647	,2279	,4565	,04	1,95
	MSC	46	,5781	,86369	,12734	,3216	,8346	,01	3,93
	MVD	28	,4648	,49979	,09445	,2710	,6586	,02	1,86
	Total	113	,4686	,64235	,06043	,3489	,5883	,01	3,93
125MI - Interest rate charged by bank (cat.<3% - >11%) (5 categories: 1 lowest, 5 highest)	No adoption	39	3,41	,818	,131	3,15	3,68	2	6
	MSC	46	3,26	1,341	,198	2,86	3,66	1	7
	MVD	28	3,57	1,200	,227	3,11	4,04	2	6
	Total	113	3,39	1,145	,108	3,18	3,60	1	7

Exhibit 23e: Major operational / financial indicators of responders' sample size (113 Suppliers)

Descriptives

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
28c. MI_LTDER_127/130_131	No adoption	39	,5296	,20562	,03293	,4630	,5963	,07	1,56
	MSC	46	2,5841	8,50426	1,25389	,0587	5,1096	,00	41,37
	MVD	28	1,4285	3,95460	,74735	-,1050	2,9619	,01	21,31
	Total	113	1,5887	5,80056	,54567	,5075	2,6699	,00	41,37
26. MI_SCASSETSR_114/124_125_126	No adoption	39	3,7131	1,44524	,23142	3,2446	4,1816	,00	6,08
	MSC	46	3,8027	1,75016	,25805	3,2830	4,3224	,03	9,12
	MVD	28	2,7533	1,80745	,34158	2,0524	3,4541	,03	4,72
	Total	113	3,5117	1,70869	,16074	3,1933	3,8302	,00	9,12
30b. MI_CASHR_126/129	No adoption	39	,0831	,06819	,01092	,0610	,1052	,03	,27
	MSC	46	,0935	,10935	,01612	,0610	,1260	,00	,47
	MVD	28	,0738	,08484	,01603	,0409	,1067	,00	,34
	Total	113	,0850	,09044	,00851	,0682	,1019	,00	,47
65MI - Turnover % (999 missing values)	No adoption	39	,213333	,1876073	,0300412	,152518	,274149	,0100	,8500
	MSC	46	,178043	,1059270	,0156181	,146587	,209500	,0200	,5000
	MVD	28	,245714	,1924006	,0363603	,171109	,320319	,0100	,9000
	Total	113	,206991	,1615764	,0151998	,176875	,237108	,0100	,9000
67MI - Payment delays (days average / 999 mv)	No adoption	39	18,31	24,337	3,897	10,42	26,20	0	100
	MSC	46	15,91	15,950	2,352	11,18	20,65	0	100
	MVD	28	13,32	13,386	2,530	8,13	18,51	0	60
	Total	113	16,10	18,708	1,760	12,61	19,58	0	100
68MI - Overdue payments (% total turnover / 999 mv)	No adoption	39	,134615	,0851576	,0136361	,107010	,162220	,0000	,3000
	MSC	46	,185870	,2068341	,0304960	,124447	,247292	,0000	,9000
	MVD	28	,148929	,1794299	,0339091	,079353	,218504	,0000	,8500
	Total	113	,159027	,1671503	,0157242	,127871	,190182	,0000	,9000
66MI - Dispute frequency (annual / 999 mv)	No adoption	39	4,74	3,552	,569	3,59	5,90	0	12
	MSC	46	4,35	5,069	,747	2,84	5,85	0	30
	MVD	28	5,11	9,327	1,763	1,49	8,72	0	50
	Total	113	4,67	5,972	,562	3,56	5,79	0	50

Exhibit 23f: Statistically significant differences of indicators among 3 supplier groups (ANOVA analysis)

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
118MI - Company, years since foundation	Between Groups	4670,274	2	2335,137	5,946	,004
	Within Groups	43202,275	110	392,748		
	Total	47872,549	112			
128MI - Sales revenue (PLN) 2008	Between Groups	1,676E+17	2	8,379E+16	3,273	,042
	Within Groups	2,816E+18	110	2,560E+16		
	Total	2,984E+18	112			
25. MI_CRATIO_124_125_126/128_129	Between Groups	1,175	2	,587	1,435	,243
	Within Groups	45,038	110	,409		
	Total	46,213	112			
125MI - Interest rate charged by bank (cat.<3% - >11%)	Between Groups	1,705	2	,852	,646	,526
	Within Groups	145,163	110	1,320		
	Total	146,867	112			
28c. MI_LTDER_127/130_131	Between Groups	90,042	2	45,021	1,346	,264
	Within Groups	3678,367	110	33,440		
	Total	3768,409	112			
26. MI_SCASSETSR_114/124_125_126	Between Groups	21,584	2	10,792	3,887	,023
	Within Groups	305,415	110	2,777		
	Total	326,999	112			
30b. MI_CASHR_126/129	Between Groups	,007	2	,003	,423	,656
	Within Groups	,909	110	,008		
	Total	,916	112			
65MI - Turnover % (999 missing values)	Between Groups	,082	2	,041	1,589	,209
	Within Groups	2,842	110	,026		
	Total	2,924	112			
67MI - Payment delays (days average / 999 mv)	Between Groups	407,862	2	203,931	,578	,563
	Within Groups	38792,067	110	352,655		
	Total	39199,929	112			
68MI - Overdue payments (% total turnover / 999 mv)	Between Groups	,059	2	,030	1,061	,350
	Within Groups	3,070	110	,028		
	Total	3,129	112			
66MI - Dispute frequency (annual / 999 mv)	Between Groups	10,336	2	5,168	,143	,867
	Within Groups	3984,549	110	36,223		
	Total	3994,885	112			

Exhibit 24a: Descriptive statistics of defined constructs' items (46 items for 9+6 constructs)

			Information Exchange			Goal Congruence			Buyer Credit Worthiness		
			35MI - OER, info exchange 1	36MI - OER, info exchange 2	37MI - OER, info exchange 3	31MI - OER, goal alignment	34MI - OER, support	40MI - OER, goal combatibility	33MI - OER, dispute	41MI - OER, Creditworthiness	42MI - OER, worrying
Statistic	Mean		4,71	4,76	4,47	4,76	4,16	4,35	4,24	5,39	4,85
	95% Confidence Interval for Mean	Lower Bound	4,37	4,45	4,16	4,43	3,87	4,04	3,88	5,11	4,50
		Upper Bound	5,04	5,07	4,78	5,09	4,44	4,67	4,60	5,67	5,20
	5% Trimmed Mean		4,79	4,82	4,52	4,85	4,18	4,39	4,27	5,51	4,94
	Median		5,00	5,00	4,00	5,00	4,00	4,00	4,00	6,00	5,00
	Variance		3,209	2,773	2,805	3,130	2,332	2,856	3,791	2,258	3,504
	Std. Deviation		1,791	1,665	1,675	1,769	1,527	1,690	1,947	1,503	1,872
	Minimum		1	1	1	1	1	1	1	1	1
	Maximum		7	7	7	7	7	7	7	7	7
	Range		6	6	6	6	6	6	6	6	6
	Interquartile Range		3	2	3	2	2	3	3	3	3
	Skewness		-,394	-,309	-,218	-,457	-,075	-,190	-,225	-,916	-,526
	Kurtosis		-,907	-,788	-,598	-,664	-,353	-,760	-1,191	,322	-,933
Std. Error	Mean		,169	,157	,158	,166	,144	,159	,183	,141	,176
	Skewness		,227	,227	,227	,227	,227	,227	,227	,227	,227
	Kurtosis		,451	,451	,451	,451	,451	,451	,451	,451	,451

			Supplier Working Capital Benefit			Sales Benefit	BSR Satisfaction		
			55MI - ORC, AR or DSO	59MI - ORC, DIO	63MI - ORC, Liquidity	64MI - ORC, Sales	52MI - SR, Relationship success	53MI - SR, Expectations fulfillment	54MI - SR, Relationship outcomes satisfaction
Statistic	Mean		3,55	3,69	3,96	4,12	5,18	3,51	4,47
	95% Confidence Interval for Mean	Lower Bound	3,27	3,43	3,67	3,82	4,91	3,25	4,19
		Upper Bound	3,83	3,95	4,24	4,41	5,45	3,78	4,74
	5% Trimmed Mean		3,50	3,66	3,96	4,13	5,27	3,49	4,50
	Median		4,00	4,00	4,00	4,00	5,00	4,00	5,00
	Variance		2,268	1,984	2,364	2,531	2,076	1,984	2,162
	Std. Deviation		1,506	1,408	1,538	1,591	1,441	1,409	1,470
	Minimum		1	1	1	1	1	1	1
	Maximum		7	7	7	7	7	7	7
	Range		6	6	6	6	6	6	6
	Interquartile Range		2	1	2	2	2	2	1
	Skewness		,312	,256	-,075	-,300	-,736	,021	-,461
	Kurtosis		,028	,331	-,425	-,419	,311	-,183	-,195
Std. Error	Mean		,142	,132	,145	,150	,136	,133	,138
	Skewness		,227	,227	,227	,227	,227	,227	,227
	Kurtosis		,451	,451	,451	,451	,451	,451	,451

: Used in the conceptual model based on research focus

: Pre-examined but not used in the conceptual model (not within research focus, following proposal defense feedback)

Exhibit 24b: Descriptive statistics of defined constructs' items (46 items for 9+6 constructs)

			Risk of Buyer Opportunistic Behavior					Financial Distress Signaling Fear			S. Finance Dependency
			44MI - F, Price concessions force	45MI - F, Payment terms demands	46MI - F, Higher service level	49MI - F, Price renegotiation	50MI - F, Unreasonable requests objection	43MI - F, fin. health signal	47MI - F, Fin. problems signal	51MI - F, Order financing difficulty	48MI - F, Financing replacement
Statistic	Mean		3,84	3,88	3,72	4,13	3,96	3,86	3,26	2,92	3,13
	95% Confidence Interval for Mean	Lower Bound	3,50	3,55	3,43	3,80	3,64	3,50	2,92	2,60	2,83
		Upper Bound	4,18	4,20	4,00	4,47	4,29	4,21	3,59	3,24	3,44
	5% Trimmed Mean		3,82	3,86	3,70	4,15	3,96	3,84	3,17	2,82	3,04
	Median		4,00	4,00	4,00	4,00	4,00	4,00	3,00	3,00	3,00
	Variance		3,403	3,074	2,383	3,188	3,106	3,658	3,228	2,931	2,652
	Std. Deviation		1,845	1,753	1,544	1,785	1,762	1,913	1,797	1,712	1,628
	Minimum		1	1	1	1	1	1	1	1	1
	Maximum		7	7	7	7	7	7	7	7	7
	Range		6	6	6	6	6	6	6	6	6
	Interquartile Range		3	3	1	2	2	3	2	3	2
	Skewness		-,057	-,101	,058	-,069	-,065	,058	,405	,550	,527
	Kurtosis		-,924	-,848	-,427	-,627	-,688	-,976	-,699	-,511	-,185
Std. Error	Mean		,174	,165	,145	,168	,166	,180	,169	,161	,153
	Skewness		,227	,227	,227	,227	,227	,227	,227	,227	,227
	Kurtosis		,451	,451	,451	,451	,451	,451	,451	,451	,451

			RF Program Adoption Pressure			BS Business Disputes		Macroeconomic Climate			S. Growth Prospects
			93MI - AP, Adoption option	94MI - AP, Adoption obligation	95MI - AP, Pressure to adopt MIAG SO	22b. MI_BDISPUTES_53CAT	6MI - ECI, Credit availability access	97MI - ECI, Credit funding cost level	98MI - ECI, Credit limits level	99MI - ECI, Credit insurance level	100MI - ECI, Growth prospects
Statistic	Mean		4,06	3,78	3,97	6,7699	3,64	4,37	3,68	4,16	3,12
	95% Confidence Interval for Mean	Lower Bound	3,66	3,38	3,59	6,6312	3,34	4,04	3,37	3,91	2,83
		Upper Bound	4,46	4,18	4,35	6,9086	3,94	4,70	3,99	4,41	3,42
	5% Trimmed Mean		4,07	3,75	3,97	6,8786	3,60	4,41	3,65	4,17	3,03
	Median		4,00	4,00	4,00	7,0000	4,00	4,00	4,00	4,00	3,00
	Variance		4,559	4,638	4,133	,554	2,608	3,075	2,773	1,832	2,502
	Std. Deviation		2,135	2,154	2,033	,74413	1,615	1,754	1,665	1,353	1,582
	Minimum		1	1	1	1,00	1	1	1	1	1
	Maximum		7	7	7	7,00	7	7	7	7	7
	Range		6	6	6	6,00	6	6	6	6	6
	Interquartile Range		4	4	4	0,00	2	2	2	1	2
	Skewness		-,009	,139	,030	-5,555	,221	-,121	,154	-,031	,716
	Kurtosis		-1,239	-1,283	-1,059	37,355	,051	-,584	-,254	,597	,122
Std. Error	Mean		,201	,203	,191	,07000	,152	,165	,157	,127	,149
	Skewness		,227	,227	,227	,227	,227	,227	,227	,227	,227
	Kurtosis		,451	,451	,451	,451	,451	,451	,451	,451	,451

Exhibit 24c: Descriptive statistics of defined constructs' items (46 items for 9+6 constructs)

			BS Trust		
			28MI - OER, promises	29MI - OER, concern	30MI - OER, responsiveness
Statistic	Mean		4,88	3,97	4,42
	95% Confidence Interval for Mean	Lower Bound	4,58	3,66	4,13
		Upper Bound	5,17	4,28	4,72
	5% Trimmed Mean		4,97	3,99	4,47
	Median		5,00	4,00	4,00
	Variance		2,520	2,776	2,550
	Std. Deviation		1,588	1,666	1,597
	Minimum		1	1	1
	Maximum		7	7	7
	Range		6	6	6
	Interquartile Range		2	2	3
	Skewness		-,829	-,193	-,309
	Kurtosis		,093	-,868	-,613
Std. Error	Mean		,149	,157	,150
	Skewness		,227	,227	,227
	Kurtosis		,451	,451	,451

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,785
Bartlett's Test of Sphericity	Approx. Chi-Square	2857,002
	df	595
	Sig.	,000

For the **35 items utilized (9 constructs)**, following further research focus.

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,695
Bartlett's Test of Sphericity	Approx. Chi-Square	4101,213
	df	1035
	Sig.	,000

For the **46 items (9+6 constructs)** initially examined.

SCF (RF) Program Attractiveness

			84MI - MSC, Attractiveness	85MI - MSC, Fee	86MI - MSC, MVD attractiveness	87MI - MSC, MVD int. rate charged (by Citi)	88MI - MSC, MVD per invoice service fee (by Citi)	89MI - MSC, MVD reserve	90MI - MSC, MVD factor amount	91MI - MSC, Platform fee	92MI - MSC, Overall services cost
Statistic	Mean		4,03	4,99	4,13	4,84	4,71	4,69	4,39	5,09	4,94
	95% Confidence Interval for Mean	Lower Bound	3,75	4,73	3,84	4,60	4,44	4,44	4,16	4,85	4,69
		Upper Bound	4,31	5,25	4,42	5,08	4,97	4,94	4,62	5,33	5,19
	5% Trimmed Mean		4,03	5,07	4,15	4,88	4,74	4,72	4,42	5,16	5,02
	Median		4,00	5,00	4,00	5,00	5,00	5,00	4,00	5,00	5,00
	Variance		2,258	1,937	2,402	1,707	2,048	1,769	1,579	1,635	1,791
	Std. Deviation		1,503	1,392	1,550	1,306	1,431	1,330	1,257	1,279	1,338
	Minimum		1	1	1	1	1	1	1	1	1
	Maximum		7	7	7	7	7	7	7	7	7
	Range		6	6	6	6	6	6	6	6	6
	Interquartile Range		1	2	2	1	2	1	1	2	2
	Skewness		,211	-,429	,185	-,017	-,010	,010	-,033	-,560	-,613
	Kurtosis		,161	,222	-,244	,121	-,474	,207	1,473	,530	,902
Std. Error	Mean		,141	,131	,146	,123	,135	,125	,118	,120	,126
	Skewness		,227	,227	,227	,227	,227	,227	,227	,227	,227
	Kurtosis		,451	,451	,451	,451	,451	,451	,451	,451	,451

Exhibit 24d: Descriptive statistics of potential control variables

Descriptive Statistics

8 Potential Control variables		128MI - Sales revenue (PLN) 2008	118MI - Company, years since foundation	25. MI_CRATIO_124_125_126/128_129	65MI - Turnover % (999 missing values)	67MI - Payment delays (days average / 999 mv)	68MI - Overdue payments (% total turnover / 999 mv)	28c. MI_LTDER_127/130_131	125MI - Interest rate charged by bank (cat. <3% - >11%)	Valid N (listwise)
N	Statistic	113	113	113	113	113	113	113	113	113
Range	Statistic	856,576,600	99	3,92	,8900	100	,9000	41,37	6	
Minimum	Statistic	50,000	2	,01	,0100	0	,0000	,00	1	
Maximum	Statistic	856,626,600	99	3,93	,9000	100	,9000	41,37	7	
Sum	Statistic	16484967894	2174	52,95	23,3900	1819	17,9700	179,52	383	
Mean	Statistic	145884671.6	17,60	,4686	,206991	16,10	,159027	1,5887	3,39	
	Std. Error	15354226.24	1,945	,06043	,0151998	1,760	,0157242	,54567	,108	
Std. Deviation	Statistic	163217663.8	20,674	,64235	,1615764	18,708	,1671503	5,80056	1,145	

Exhibit 25a: 9 Constructs internal consistency reliability - Cronbach's alpha

Correlations

Information Exchange			35MI - OER, info exchange 1	36MI - OER, info exchange 2	37MI - OER, info exchange 3
Spearman's rho	35MI - OER, info exchange 1	Correlation Coefficient	1,000	,719**	,664**
		Sig. (2-tailed)	.	,000	,000
		N	113	113	113
	36MI - OER, info exchange 2	Correlation Coefficient	,719**	1,000	,685**
		Sig. (2-tailed)	,000	.	,000
		N	113	113	113
	37MI - OER, info exchange 3	Correlation Coefficient	,664**	,685**	1,000
		Sig. (2-tailed)	,000	,000	.
		N	113	113	113

**. Correlation is significant at the 0.01 level (2-tailed).

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,869	,870	3

Correlations

Goal Congruence			31MI - OER, goal alignment	34MI - OER, support	40MI - OER, goal combatibility
Spearman's rho	31MI - OER, goal alignment	Correlation Coefficient	1,000	,367**	,553**
		Sig. (2-tailed)	.	,000	,000
		N	113	113	113
	34MI - OER, support	Correlation Coefficient	,367**	1,000	,641**
		Sig. (2-tailed)	,000	.	,000
		N	113	113	113
	40MI - OER, goal combatibility	Correlation Coefficient	,553**	,641**	1,000
		Sig. (2-tailed)	,000	,000	.
		N	113	113	113

**. Correlation is significant at the 0.01 level (2-tailed).

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,748	,751	3

Correlations

Buyer Credit Worthiness			33MI - OER, dispute	41MI - OER, Creditworthiness	42MI - OER, worrying
Spearman's rho	33MI - OER, dispute	Correlation Coefficient	1,000	,338**	,501**
		Sig. (2-tailed)	.	,000	,000
		N	113	113	113
	41MI - OER, Creditworthiness	Correlation Coefficient	,338**	1,000	,464**
		Sig. (2-tailed)	,000	.	,000
		N	113	113	113
	42MI - OER, worrying	Correlation Coefficient	,501**	,464**	1,000
		Sig. (2-tailed)	,000	,000	.
		N	113	113	113

**. Correlation is significant at the 0.01 level (2-tailed).

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,688	,692	3

: Used in the conceptual model based on research focus

Exhibit 25b: 9 Constructs internal consistency reliability - Cronbach's alpha

Correlations

Supplier Working Capital Benefit			55MI - ORC, AR or DSO	59MI - ORC, DIO	63MI - ORC, Liquidity
Spearman's rho	55MI - ORC, AR or DSO	Correlation Coefficient	1,000	,551**	,272**
		Sig. (2-tailed)	.	,000	,004
		N	113	113	113
	59MI - ORC, DIO	Correlation Coefficient	,551**	1,000	,494**
		Sig. (2-tailed)	,000	.	,000
		N	113	113	113
	63MI - ORC, Liquidity	Correlation Coefficient	,272**	,494**	1,000
		Sig. (2-tailed)	,004	,000	.
		N	113	113	113

**. Correlation is significant at the 0.01 level (2-tailed).

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,724	,728	3

Correlations

BSR Satisfaction			52MI - SR, Relationship success	53MI - SR, Expectations fulfillment	54MI - SR, Relationship outcomes satisfaction
Spearman's rho	52MI - SR, Relationship success	Correlation Coefficient	1,000	,476**	,761**
		Sig. (2-tailed)	.	,000	,000
		N	113	113	113
	53MI - SR, Expectations fulfillment	Correlation Coefficient	,476**	1,000	,524**
		Sig. (2-tailed)	,000	.	,000
		N	113	113	113
	54MI - SR, Relationship outcomes satisfaction	Correlation Coefficient	,761**	,524**	1,000
		Sig. (2-tailed)	,000	,000	.
		N	113	113	113

**. Correlation is significant at the 0.01 level (2-tailed).

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,833	,832	3

Correlations

BS Trust			28MI - OER, promises	29MI - OER, concern	30MI - OER, responsiveness
Spearman's rho	28MI - OER, promises	Correlation Coefficient	1,000	,528**	,637**
		Sig. (2-tailed)	.	,000	,000
		N	113	113	113
	29MI - OER, concern	Correlation Coefficient	,528**	1,000	,785**
		Sig. (2-tailed)	,000	.	,000
		N	113	113	113
	30MI - OER, responsiveness	Correlation Coefficient	,637**	,785**	1,000
		Sig. (2-tailed)	,000	,000	.
		N	113	113	113

**. Correlation is significant at the 0.01 level (2-tailed).

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,853	,853	3

Exhibit 25c: 9 Constructs internal consistency reliability - Cronbach's alpha

Correlations

SCF (RF) Program Attractiveness			84MI - MSC, Attractiveness	85MI - MSC, Fee	86MI - MSC, MVD attractiveness	87MI - MSC, MVD int. rate charged (by Citi)	88MI - MSC, MVD per invoice service fee (by Citi)	89MI - MSC, MVD reserve	90MI - MSC, MVD factor amount	91MI - MSC, Platform fee	92MI - MSC, Overall services cost
Spearman's rho	84MI - MSC, Attractiveness	Correlation Coefficient	1,000	,272**	,747**	,231*	,100	-,007	-,011	,259**	,124
		Sig. (2-tailed)	.	,004	,000	,014	,294	,942	,905	,006	,190
		N	113	113	113	113	113	113	113	113	113
	85MI - MSC, Fee	Correlation Coefficient	,272**	1,000	,306**	,507**	,335**	,284**	,398**	,737**	,657**
		Sig. (2-tailed)	,004	.	,001	,000	,000	,002	,000	,000	,000
		N	113	113	113	113	113	113	113	113	113
	86MI - MSC, MVD attractiveness	Correlation Coefficient	,747**	,306**	1,000	,149	,061	-,171	-,052	,220*	,092
		Sig. (2-tailed)	,000	,001	.	,116	,521	,070	,583	,019	,334
		N	113	113	113	113	113	113	113	113	113
	87MI - MSC, MVD int. rate charged (by Citi)	Correlation Coefficient	,231*	,507**	,149	1,000	,799**	,471**	,309**	,506**	,434**
		Sig. (2-tailed)	,014	,000	,116	.	,000	,000	,001	,000	,000
		N	113	113	113	113	113	113	113	113	113
	88MI - MSC, MVD per invoice service fee (by Citi)	Correlation Coefficient	,100	,335**	,061	,799**	1,000	,496**	,357**	,470**	,400**
		Sig. (2-tailed)	,294	,000	,521	,000	.	,000	,000	,000	,000
		N	113	113	113	113	113	113	113	113	113
	89MI - MSC, MVD reserve	Correlation Coefficient	-,007	,284**	-,171	,471**	,496**	1,000	,596**	,476**	,360**
		Sig. (2-tailed)	,942	,002	,070	,000	,000	.	,000	,000	,000
		N	113	113	113	113	113	113	113	113	113
	90MI - MSC, MVD factor amount	Correlation Coefficient	-,011	,398**	-,052	,309**	,357**	,596**	1,000	,437**	,313**
		Sig. (2-tailed)	,905	,000	,583	,001	,000	,000	.	,000	,001
		N	113	113	113	113	113	113	113	113	113
	91MI - MSC, Platform fee	Correlation Coefficient	,259**	,737**	,220*	,506**	,470**	,476**	,437**	1,000	,816**
		Sig. (2-tailed)	,006	,000	,019	,000	,000	,000	,000	.	,000
		N	113	113	113	113	113	113	113	113	113
	92MI - MSC, Overall services cost	Correlation Coefficient	,124	,657**	,092	,434**	,400**	,360**	,313**	,816**	1,000
		Sig. (2-tailed)	,190	,000	,334	,000	,000	,000	,001	,000	.
		N	113	113	113	113	113	113	113	113	113

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,849	,853	9

Exhibit 25d: 9 Constructs internal consistency reliability - Cronbach's alpha

Correlations

Risk of Buyer Opportunistic Behavior			44MI - F, Price concessions force	45MI - F, Payment terms demands	46MI - F, Higher service level	49MI - F, Price renegotiation	50MI - F, Unreasonable requests objection
Spearman's rho	44MI - F, Price concessions force	Correlation Coefficient	1,000	,702**	,482**	,526**	,616**
		Sig. (2-tailed)	.	,000	,000	,000	,000
		N	113	113	113	113	113
	45MI - F, Payment terms demands	Correlation Coefficient	,702**	1,000	,611**	,690**	,639**
		Sig. (2-tailed)	,000	.	,000	,000	,000
		N	113	113	113	113	113
	46MI - F, Higher service level	Correlation Coefficient	,482**	,611**	1,000	,480**	,381**
		Sig. (2-tailed)	,000	,000	.	,000	,000
		N	113	113	113	113	113
	49MI - F, Price renegotiation	Correlation Coefficient	,526**	,690**	,480**	1,000	,663**
		Sig. (2-tailed)	,000	,000	,000	.	,000
		N	113	113	113	113	113
	50MI - F, Unreasonable requests objection	Correlation Coefficient	,616**	,639**	,381**	,663**	1,000
		Sig. (2-tailed)	,000	,000	,000	,000	.
		N	113	113	113	113	113

**. Correlation is significant at the 0.01 level (2-tailed).

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,880	,879	5

Correlations

Financial Distress Signaling Fear			43MI - F, fin. health signal	47MI - F, Fin. problems signal	51MI - F, Order financing difficulty
Spearman's rho	43MI - F, fin. health signal	Correlation Coefficient	1,000	,504**	,197*
		Sig. (2-tailed)	.	,000	,036
		N	113	113	113
	47MI - F, Fin. problems signal	Correlation Coefficient	,504**	1,000	,257**
		Sig. (2-tailed)	,000	.	,006
		N	113	113	113
	51MI - F, Order financing difficulty	Correlation Coefficient	,197*	,257**	1,000
		Sig. (2-tailed)	,036	,006	.
		N	113	113	113

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,547	,541	3

Exhibit 25e: 9 Constructs descriptive statistics (9 constructs used + 6 not used due to research focus)

Descriptive Statistics

	N	Range	Minimum	Maximum	Mean		Std. Deviation	Variance	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
4. MI_INFO_EXCHANGE_AV_22_23_24	113	6,00	1,00	7,00	4,6460	,14335	1,52381	2,322	-,317	,227	-,641	,451
2. MI_GOAL_CONGRUENCE_AV_18_21_27	113	6,00	1,00	7,00	4,4248	,12774	1,35785	1,844	-,052	,227	-,559	,451
5. MI_CREDIT_WORTHINESS_AV_20_28_29	113	6,00	1,00	7,00	4,8260	,13172	1,40018	1,961	-,384	,227	-,398	,451
10. MI_WCAPITALS_AV_42_46_50	113	6,00	1,00	7,00	3,7316	,11211	1,19179	1,420	-,031	,227	,968	,451
13. MI_SALES_STATUS_51	113	6,00	1,00	7,00	4,1150	,14967	1,59100	2,531	-,300	,227	-,419	,451
9. MI_RSATISFACTION_AV_39_40_41	113	6,00	1,00	7,00	4,3864	,11730	1,24687	1,555	-,422	,227	,300	,451
1. MI_TRUST_AV_15_16_17	113	6,0	1,0	7,0	4,425	,1337	1,4214	2,020	-,412	,227	-,273	,451
14. MI_MIAG_SATTRACTIVENESS_AV_71-79	113	6,00	1,00	7,00	4,6450	,08728	,92783	,861	-,543	,227	3,062	,451
7. MI_FRENEGOTIATION_AV_31_32_33_36_37	113	6,00	1,00	7,00	3,9062	,13460	1,43080	2,047	-,269	,227	-,266	,451
6a. MI_DISTRESS_SIGNAL_AV_30_34_38	113	6,00	1,00	7,00	3,3451	,12324	1,31001	1,716	-,058	,227	-,261	,451
8a. MI_FDEPENDENCY_35	113	6,00	1,00	7,00	3,1327	,15319	1,62845	2,652	,527	,227	-,185	,451
15. MI_ADOPTION_PRESSURE_AV_80_81_82	113	6,00	1,00	7,00	3,9381	,17607	1,87165	3,503	,238	,227	-,894	,451
22c. MI_OBDISPUTES_AV_20_53CAT	113	5,50	1,50	7,00	5,5044	,09908	1,05326	1,109	-,525	,227	,345	,451
16b. MI_EC_CLIMATE_AV_83_84_85_86	113	6,00	1,00	7,00	3,9624	,11671	1,24069	1,539	-,033	,227	1,283	,451
17. MI_GR_PROSPECTS_87	113	6,00	1,00	7,00	3,1239	,14881	1,58189	2,502	,716	,227	,122	,451
Valid N (listwise)	113											

Exhibit 26b: Conceptual Model Results – Unstandardized Estimates in SPSS AMOS

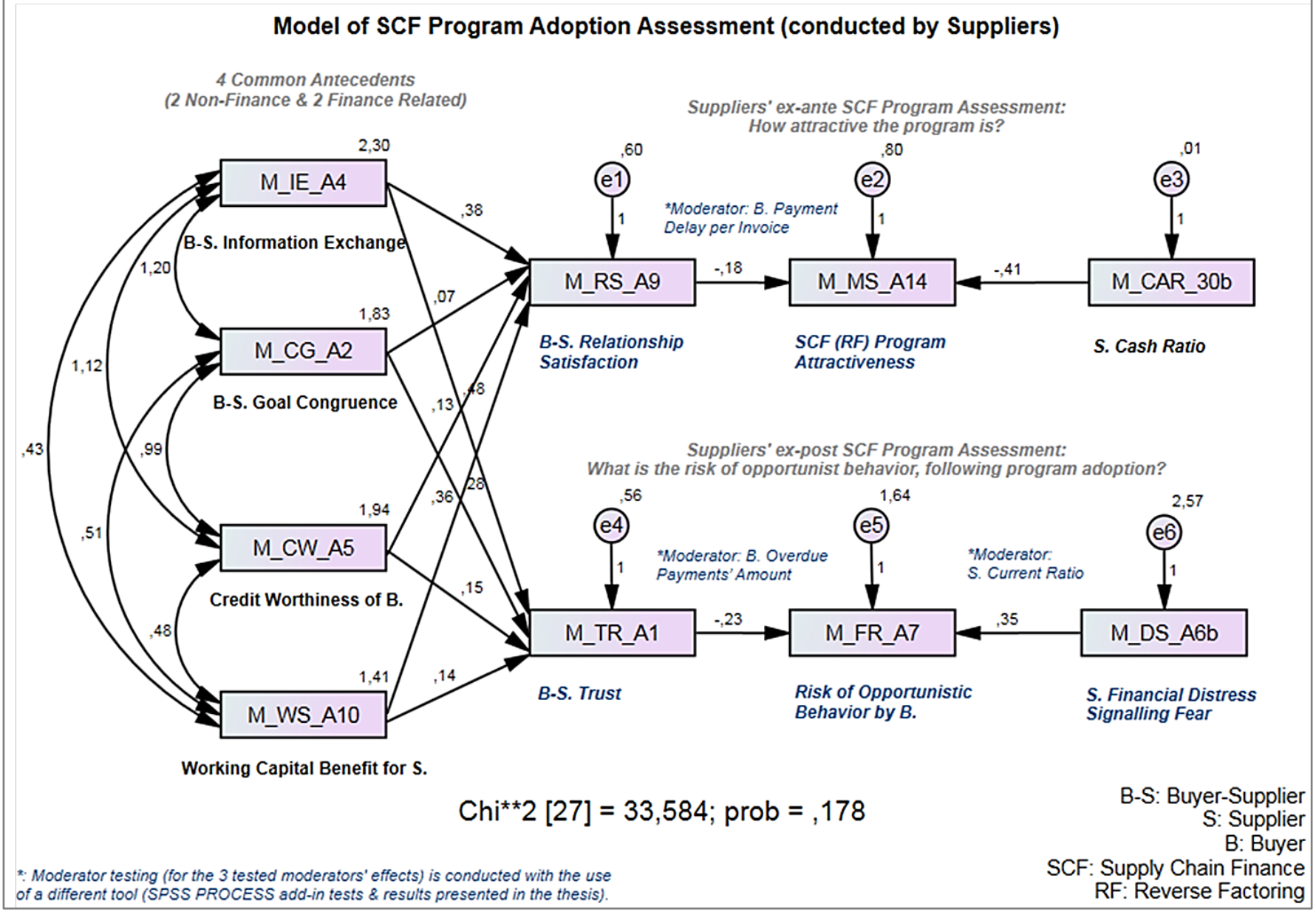

Exhibit 26c: Conceptual Model Results – Standardized Estimates in SPSS AMOS

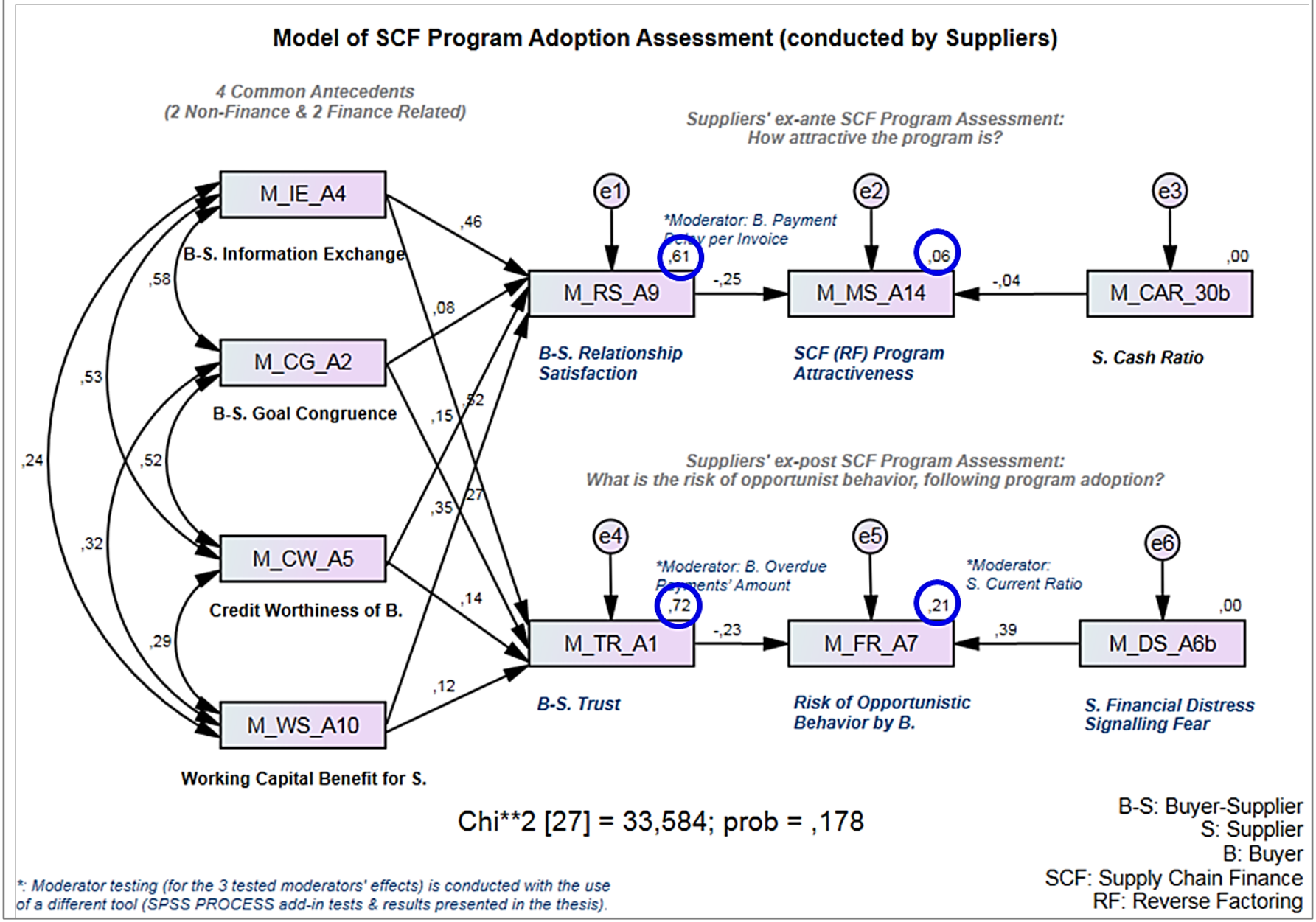

Exhibit 26d: Conceptual Model Results – Chi-square Model Fit Test, Regression Weights, DVs & R^2s

Notes for Model (Default model)

Computation of degrees of freedom (Default model)

Number of distinct sample moments:	55
Number of distinct parameters to be estimated:	28
Degrees of freedom (55 - 28):	27

Result (Default model)

Minimum was achieved
Chi-square = 33,584
Degrees of freedom = 27
Probability level = ,178

Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
M_TR_A1	<---	M_IE_A4	,483	,061	7,955	***	par_9
M_RS_A9	<---	M_IE_A4	,378	,063	6,028	***	par_10
M_TR_A1	<---	M_CW_A5	,146	,064	2,296	,022	par_11
M_TR_A1	<---	M_CG_A2	,284	,069	4,121	***	par_12
M_RS_A9	<---	M_CG_A2	,071	,071	1,003	,316	par_13
M_RS_A9	<---	M_CW_A5	,133	,066	2,034	,042	par_14
M_TR_A1	<---	M_WS_A10	,140	,064	2,204	,027	par_15
M_RS_A9	<---	M_WS_A10	,363	,066	5,529	***	par_16
M_MS_A14	<---	M_RS_A9	-,184	,068	-2,697	,007	par_7
M_FR_A7	<---	M_TR_A1	-,231	,086	-2,696	,007	par_8
M_FR_A7	<---	M_DS_A6b	,350	,076	4,631	***	par_17
M_MS_A14	<---	M_CAR_30b	-,414	,942	-,439	,660	par_18

Standardized Regression Weights: (Group number 1 - Default model)

			Estimate
M_TR_A1	<---	M_IE_A4	,518
M_RS_A9	<---	M_IE_A4	,462
M_TR_A1	<---	M_CW_A5	,144
M_TR_A1	<---	M_CG_A2	,271
M_RS_A9	<---	M_CG_A2	,078
M_RS_A9	<---	M_CW_A5	,150
M_TR_A1	<---	M_WS_A10	,118
M_RS_A9	<---	M_WS_A10	,347
M_MS_A14	<---	M_RS_A9	-,248
M_FR_A7	<---	M_TR_A1	-,228
M_FR_A7	<---	M_DS_A6b	,391
M_MS_A14	<---	M_CAR_30b	-,040

Squared Multiple Correlations: (Group number 1 - Default model)

	Estimate
M_CAR_30b	,000
M_DS_A6b	,000
M_TR_A1	,720
M_RS_A9	,613
M_FR_A7	,205
M_MS_A14	,063

Exhibit 26e: Conceptual Model Results – SEM Model Fit Tests

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	28	33,584	27	,178	1,244
Saturated model	55	,000	0		
Independence model	10	423,830	45	,000	9,418

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	,085	,946	,891	,465
Saturated model	,000	1,000		
Independence model	,571	,493	,380	,403

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	,921	,868	,983	,971	,983
Saturated model	1,000		1,000		1,000
Independence model	,000	,000	,000	,000	,000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	,600	,552	,590
Saturated model	,000	,000	,000
Independence model	1,000	,000	,000

NCP

Model	NCP	LO 90	HI 90
Default model	6,584	,000	25,513
Saturated model	,000	,000	,000
Independence model	378,830	316,614	448,509

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	,300	,059	,000	,228
Saturated model	,000	,000	,000	,000
Independence model	3,784	3,382	2,827	4,005

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	,047	,000	,092	,508
Independence model	,274	,251	,298	,000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	89,584	95,683	165,951	193,951
Saturated model	110,000	121,980	260,006	315,006
Independence model	443,830	446,008	471,104	481,104

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	,800	,741	,969	,854
Saturated model	,982	,982	,982	1,089
Independence model	3,963	3,407	4,585	3,982

Exhibit 28a: Moderating effect of buyer's payment delay per invoice (Hypothesis 5a-b) – SPSS PROCESS results

Buyer's payment delay per invoice moderating the effect of BS relationship satisfaction -X- to RF program attractiveness -Y-)

```
************* PROCESS Procedure for SPSS Release 2.16.1 ******************
         Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2013). www.guilford.com/p/hayes3
**************************************************************************
Model = 1
    Y = M_MS_A14
    X = M_RS_A9
    M = @54_MI_L (Buyer's payment delay per invoice moderating the effect of BS relationship satisfaction -X- to RF
program attractiveness -Y-)
Sample size
        113
**************************************************************************
Outcome: M_MS_A14

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      ,3553      ,1262      ,7729     5,2478     3,0000   109,0000      ,0020
Model
             coeff         se          t          p       LLCI       ULCI
constant     4,6870      ,0845    55,4902      ,0000     4,5196     4,8544
@54_MI_L      ,0022      ,0057      ,3871      ,6995     -,0090      ,0134
M_RS_A9      -,1789      ,0684    -2,6162      ,0102     -,3145     -,0434
int_1         ,0104      ,0042     2,4470      ,0160      ,0020      ,0188

Product terms key:
 int_1    M_RS_A9     X     @54_MI_L
R-square increase due to interaction(s):
         R2-chng          F        df1        df2          p
int_1      ,0480     5,9878     1,0000   109,0000      ,0160
**************************************************************************

Conditional effect of X on Y at values of the moderator(s):
   @54_MI_L     Effect         se          t          p       LLCI       ULCI
   -16,0973     -,3461      ,0894    -3,8728      ,0002     -,5232     -,1690
      ,0000     -,1789      ,0684    -2,6162      ,0102     -,3145     -,0434
    18,7083      ,0154      ,1121      ,1370      ,8913     -,2068      ,2375

Values for quantitative moderators are the mean and plus/minus one SD from mean.
Values for dichotomous moderators are the two values of the moderator.
```

Exhibit 28b: Moderating effect of buyer's overdue payments' amount (Hypothesis 7a-b) – SPSS PROCESS results

Buyer overdue payments' amount moderating the effect of BS trust –X- to risk of Buyer opportunistic behavior

```
************* PROCESS Procedure for SPSS Release 2.16.1 *****************
          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2013). www.guilford.com/p/hayes3
**************************************************************************
Model = 1
    Y = M_FR_A7
    X = M_TR_A1
    M = @55_MI_L (Buyer overdue payments' amount moderating the effect of BS trust -X- to risk of Buyer opportunistic behavior)
Sample size
        113
**************************************************************************
Outcome: M_FR_A7
Model Summary
          R       R-sq        MSE          F        df1        df2          p
      ,2755      ,0759     1,9438     2,9851     3,0000   109,0000      ,0344
Model
              coeff         se          t          p       LLCI       ULCI
constant     3,9160      ,1312    29,8379      ,0000     3,6558     4,1761
@55_MI_L     -,0184      ,7942     -,0232      ,9815    -1,5925     1,5556
M_TR_A1      -,2172      ,0932    -2,3302      ,0216     -,4020     -,0325
int_1        1,0814      ,5209     2,0760      ,0402      ,0490     2,1138

Product terms key:
 int_1    M_TR_A1     X     @55_MI_L

R-square increase due to interaction(s):
         R2-chng          F        df1        df2          p
int_1      ,0365     4,3099     1,0000   109,0000      ,0402
**************************************************************************

Conditional effect of X on Y at values of the moderator(s):
   @55_MI_L     Effect         se          t          p       LLCI       ULCI
     -,1590     -,3892      ,1307    -2,9770      ,0036     -,6483     -,1301
      ,0000     -,2172      ,0932    -2,3302      ,0216     -,4020     -,0325
      ,1672     -,0365      ,1210     -,3012      ,7639     -,2764      ,2035

Values for quantitative moderators are the mean and plus/minus one SD from mean.
Values for dichotomous moderators are the two values of the moderator.
```

Exhibit 28c: Moderating effect of supplier current ratio (Hypothesis 8a-b) – SPSS PROCESS results

Current ratio moderating the effect of distress signaling –X- to risk of opportunistic behavior –Y-)

```
************* PROCESS Procedure for SPSS Release 2.16.1 ******************
          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2013). www.guilford.com/p/hayes3
**************************************************************************
Model = 1
    Y = M_FR_A7
    X = M_DS_A6b
    M = M_CR_A25 (current ratio moderating the effect of distress signaling -X- to risk of opportunistic behavior -Y-)

Sample size
        113
**************************************************************************
Outcome: M_FR_A7

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      ,4964      ,2464     1,5852    11,8795     3,0000   109,0000      ,0000
Model
             coeff         se          t          p       LLCI       ULCI
constant     3,9866      ,1203    33,1261      ,0000     3,7480     4,2251
M_CR_A25      ,4234      ,1969     2,1502      ,0337      ,0331      ,8136
M_DS_A6b      ,3183      ,0745     4,2712      ,0000      ,1706      ,4660
int_1        -,6073      ,1610    -3,7707      ,0003     -,9265     -,2881

Product terms key:

 int_1    M_DS_A6b    X     M_CR_A25

R-square increase due to interaction(s):
         R2-chng           F        df1        df2          p
int_1      ,0983    14,2185     1,0000   109,0000      ,0003
**************************************************************************
Conditional effect of X on Y at values of the moderator(s):
   M_CR_A25     Effect         se          t          p       LLCI       ULCI
     -,4555      ,5949      ,1035     5,7479      ,0000      ,3898      ,8001
      ,0000      ,3183      ,0745     4,2712      ,0000      ,1706      ,4660
      ,6424     -,0718      ,1287     -,5576      ,5783     -,3269      ,1834
Values for quantitative moderators are the mean and plus/minus one SD from mean.
Values for dichotomous moderators are the two values of the moderator.
```

Appendix B: Survey Questionnaire (Exhibit 15):

Variable Improving our Services to our Polish Business Partners -

2. Supplier Information

1. (1_G_R_T) Company

2. (2_G_R_T) Main Contact's First Name, Family Name

3. (3_G_R_T) Years with Company

4. (4_G_R_T) Email

5. (5_G_R_T) Telephone

6. Function

- ☐ (6_G_F_M) CEO/General Management
- ☐ (7_G_F_M) Sales/Marketing
- ☐ (8_G_F_M) Finance
- ☐ (9_G_F_M) Administration

(10_G_F_T) Other

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Variable Improving our Services to our Polish Business Partners -

3. Part I. General Relationship with Makro or Real (I)

7. (11_L_S_C) Please indicate for which Metro sales line you would like to complete this section:

- Makro
- Real

8. Please indicate the corresponding supplier code(s)

1. (12_L_S_T)
2. (13_L_S_T)
3. (14_L_S_T)

Variable Improving our Services to our Polish Business Partners -

9. We would like to know your overall evaluation of your relationship with this sales line.

(Please indicate whether you agree or disagree with the following statements 1 means strongly disagree and 7 means strongly agree).

	Strongly Disagree 1	2	3	4	5	6	Strongly Agree 7
a. (15_L_TB_R7) Makro/Real usually keeps the promises it makes to our company.	○	○	○	○	○	○	○
b. (16_L_TB_R7) Makro/Real is concerned about our company's welfare, particularly when making major decisions.	○	○	○	○	○	○	○
c. (17_L_TB_R7) Makro/Real responds with understanding when we inform it of problems.	○	○	○	○	○	○	○
d. (18_L_GC_R7) Makro/Real and our firm have different goals.	○	○	○	○	○	○	○
e. (19_L_VD_R7) We are quite dependent on Makro/Real.	○	○	○	○	○	○	○
f. (20_L_JO_R7) We rarely have a business dispute on invoice issues with Makro/Real.	○	○	○	○	○	○	○
g. (21_L_GC_R7) Makro/Real and our firm support each others' objectives.	○	○	○	○	○	○	○
h. (22_L_IE_R7) In this relationship, both sides always keep each other informed about events or changes that may affect the other party.	○	○	○	○	○	○	○
i. (23_L_IE_R7) In this relationship, any information that might help the other party is provided to them.	○	○	○	○	○	○	○
j. (24_L_IE_R7) Exchange of information in this relationship takes place frequently through informal and formal processes.	○	○	○	○	○	○	○
k. (25_L_VD_R7) It would be difficult for us to replace Makro/Real as a customer.	○	○	○	○	○	○	○
l. (26_L_VD_R7) We don't have a good alternative to Makro/Real as a customer.	○	○	○	○	○	○	○
m. (27_L_GC_R7) Makro/Real and our firm have compatible goals.	○	○	○	○	○	○	○
n. (28_L_JO_R7) Makro/Real is a customer with high creditworthiness.	○	○	○	○	○	○	○
o. (29_L_JO_R7) We are often worried that Makro/Real will not pay our invoices.	○	○	○	○	○	○	○

We would like to know how you think that the adoption of the MIAG Vendor Discounting service might influence your relationship with the respective sales line.

Variable Improving our Services to our Polish Business Partners -

10. ***In the next year if our company relies on Makro/Real to obtain funds (e.g. via MIAG Vendor Discounting)...***

(Please indicate whether you agree or disagree with the following statements 1 means strongly disagree and 7 means strongly agree)

	Strongly Disagree 1	2	3	4	5	6	Strongly Agree 7
a. (30_L_DS_R7) We signal to Makro/Real that we are not in good financial health.	○	○	○	○	○	○	○
b. (31_L_FR_R7) Makro/Real will force us to make price concessions.	○	○	○	○	○	○	○
c. (32_L_FR_R7) Makro/Real will demand longer payment terms.	○	○	○	○	○	○	○
d. (33_L_FR_R7) Makro/Real will request higher service level.	○	○	○	○	○	○	○
e. (34_L_DS_R7) We give Makro/Real a reason to believe that we have financial problems.	○	○	○	○	○	○	○
f. (35_L_FL_R7) It will be difficult to replace these funds with other financing (e.g. bank credit).	○	○	○	○	○	○	○
g. (36_L_FL_R7) Makro/Real will renegotiate the purchasing price.	○	○	○	○	○	○	○
h. (37_L_FL_R7) It will be difficult to object to unreasonable requests from Makro/Real.	○	○	○	○	○	○	○
i. (38_L_DS_R7) We will make Makro/Real assume that we can barely finance their orders.	○	○	○	○	○	○	○

Variable Improving our Services to our Polish Business Partners -

4. Part I. General Relationship with Makro or Real (II)

11. We would like to understand how you see the relationship with the respective sales line overall.

(Please indicate whether you agree or disagree with the following statements 1 means strongly disagree and 7 means strongly agree)

	Strongly Disagree 1	2	3	4	5	6	Strongly Agree 7
a. (39_L_REL_R7) Our relationship with Makro/Real has been successful.	○	○	○	○	○	○	○
b. (40_L_REL_R7) Our relationship with Makro/Real has more than fulfilled our expectation.	○	○	○	○	○	○	○
c. (41_L_REL_R7) We are satisfied with the outcomes of the relationship with Makro/Real.	○	○	○	○	○	○	○

12. *Compared to other customers we are supplying to, the relationship with Makro/Real is characterized by...*

Please indicate whether you agree or disagree with the following statements (1 means strongly disagree and 7 means strongly agree)

	Strongly Disagree 1	2	3	4	5	6	Strongly Agree 7
a. (42_L_CFIN_R7) Lower Accounts Receivable (or Days Sales Outstanding DSO)	○	○	○	○	○	○	○
b. (43_L_CFIN_R7) Lower credit cost	○	○	○	○	○	○	○
c. (44_L_CFIN_R7) Lower credit exposure	○	○	○	○	○	○	○
d. (45_L_CFIN_R7) Lower credit insurance cost	○	○	○	○	○	○	○
e. (46_L_CFIN_R7) Lower Days Inventory Outstanding (DIO)	○	○	○	○	○	○	○
f. (47_L_CFIN_R7) Lower rate of invoice disputes	○	○	○	○	○	○	○
g. (48_L_CFIN_R7) Lower rate of delayed payments	○	○	○	○	○	○	○
h. (49_L_CFIN_R7) Lower rate of non-payment (default risk)	○	○	○	○	○	○	○
i. (50_L_CFIN_R7) Higher liquidity	○	○	○	○	○	○	○
j. (51_L_CFIN_R7) Higher sales	○	○	○	○	○	○	○

We would also like to ask you some questions on financial aspects of your relationship.

13. (52_L_TO_T) How much of your total turnover is with Makro/Real? (%)

Variable Improving our Services to our Polish Business Partners -

14. (53_L_DIS_T) How often did you have a business dispute with Makro/Real in 2008? (number of times, approximately)

15. (54_L_OVD_T) On average, by how many days are payments from Makro/Real delayed beyond payment date? (Days)

16. (55_L_OVDP_T) What share of your total turnover with Makro/Real involves overdue payments? (%)

What are your payment terms to Makro/Real? (Five Year History)
(Example: 30 days net, 14 days with, 2%)

17. 2008

(56_L_PT_T) Days Net,

(57_L_PT_T) Days with

(58_L_PT_T) % (Early Payment Discount)

18. 2007

(59_L_PT_T) Days Net,

(60_L_PT_T) Days with

(61_L_PT_T) % (Early Payment Discount)

19. 2006

(62_L_PT_T) Days Net,

(63_L_PT_T) Days with

(64_L_PT_T) % (Early Payment Discount)

20. 2005

(65_L_PT_T) Days Net,

(66_L_PT_T) Days with

(67_L_PT_T) % (Early Payment Discount)

Variable Improving our Services to our Polish Business Partners -

21..... 2004

(68_L_PT_T) Days Net,	
(69_L_PT_T) Days with	
(70_L_PT_T) % (Early Payment Discount)	

Variable Improving our Services to our Polish Business Partners -

5. Part II MIAG Service Offering and Financial Information (I)

We would like to know your opinion on two of MIAG's service offerings:
- The MIAG Payment Guarantee that insures your payment risk regarding invoices to Metro.
- The MIAG Vendor Discounting that enables you to obtain funds by discounting your Makro/Real invoices at Citi Handlowy at preferred conditions.

22. Compared to our other options (for instance, based on offers from other financial institutions or insurances)

(Please indicate whether you agree or disagree with the following statements 1 means strongly disagree and 7 means strongly agree)

	Strongly Disagree 1	2	3	4	5	6	Strongly Agree 7
a. (71_S_MSC_R7) The overall offering of the MIAG Payment Guarantee is very attractive for our firm.	○	○	○	○	○	○	○
b. (72_S_MSC_R7) The fee that MIAG charges for the MIAG Payment Guarantee is too high.	○	○	○	○	○	○	○
c. (73_S_MVD_R7) The overall offering of the MIAG Vendor Discounting is very attractive for our firm.	○	○	○	○	○	○	○
d. (74_S_MVD_R7) The interest rate that Citi Handlowy charges for the MIAG Vendor Discounting is too high.	○	○	○	○	○	○	○
e. (75_S_MVD_R7) The per-invoice service fee that Citi Handlowy charges for the MIAG Vendor Discounting scheme is too high.	○	○	○	○	○	○	○
f. (76_S_MVD_R7) The reserve within the MIAG Vendor Discounting (MVD) scheme is too high.	○	○	○	○	○	○	○
g. (77_S_MVD_R7) The amount that can be factored after deduction of credit notes/debit notes and reserve rate is too low.	○	○	○	○	○	○	○
h. (78_S_OVR_R7) The MIAG platform fee is too high.	○	○	○	○	○	○	○
i. (79_S_OVR_R7) The overall cost of the services that MIAG offers is too high.	○	○	○	○	○	○	○

Variable Improving our Services to our Polish Business Partners -

23. ***(Please indicate whether you agree or disagree with the following statements 1 means strongly disagree and 7 means strongly agree)***

	Strongly Disagree 1	2	3	4	5	6	Strongly Agree 7
a. (80_S_VOL_R7) Adoption of the MIAG services is completely voluntary.	○	○	○	○	○	○	○
b. (81_S_VOL_R7) Adoption of the MIAG services is obligatory.	○	○	○	○	○	○	○
c. (82_S_VOL_R7) Makro/Real pressures us to adopt the MIAG service offerings.	○	○	○	○	○	○	○

We would like to understand what is the impact of the economic climate and of your banking relationships on your relationship with MIAG.

24. ***Over the past the year, for our firm...***

(Please indicate whether you agree or disagree with the following statements 1 means strongly disagree and 7 means strongly agree)

	Strongly Disagree 1	2	3	4	5	6	Strongly Agree 7
a. (83_S_CRI_R7) credit availability has become more difficult.	○	○	○	○	○	○	○
b. (84_S_CRI_R7) credit funding cost has increased.	○	○	○	○	○	○	○
c. (85_S_CRI_R7) credit limits have been reduced.	○	○	○	○	○	○	○
d. (86_S_CRI_R7) credit insurance cost has increased.	○	○	○	○	○	○	○
e. (87_S_CRI_R7) growth prospects have been reduced.	○	○	○	○	○	○	○
f. (88_S_CRI_R7) We have invested a lot of time and effort into keeping up to date with developments in finance.	○	○	○	○	○	○	○

Variable Improving our Services to our Polish Business Partners -

25. Please rate Citi Handlowy's reputation in your industry (1 means very bad and 5 means very good) regarding:

	Very Bad 1	2	3	4	Very Good 5
a. (89_S_BAN_R5) Quality of Services	○	○	○	○	○
b. (90_S_BAN_R5) Attractiveness of Price	○	○	○	○	○
c. (91_S_BAN_R5) Ease to do Business with	○	○	○	○	○
d. (92_S_BAN_R5) Financial Stability	○	○	○	○	○

26. Please indicate how well MIAG performs on the following service aspects (1 means very bad and 7 means very good)

	Very Bad 1	2	3	4	5	6	Very Good 7
a. (93_S_MIA_R7) Flexibility of fund access	○	○	○	○	○	○	○
b. (94_S_MIA_R7) Simplicity of fund access	○	○	○	○	○	○	○
c. (95_S_MIA_R7) Cost of fund access	○	○	○	○	○	○	○
d. (96_S_MIA_R7) Speed of funds transfer	○	○	○	○	○	○	○
e. (97_S_MIA_R7) Punctuality of payments	○	○	○	○	○	○	○
f. (98_S_MIA_R7) Support in case of disputes and defaults	○	○	○	○	○	○	○
g. (99_S_MIA_R7) Visibility of invoice settlement	○	○	○	○	○	○	○
h. (100_S_MIA_R7) Intuitive software and technology	○	○	○	○	○	○	○
i. (101_S_MIA_R7) Simple day-to-day operations	○	○	○	○	○	○	○
j. (102_S_MIA_R7) Professional helpdesk and hotline	○	○	○	○	○	○	○
k. (103_S_MIA_R7) Simplicity of contracts and legal language	○	○	○	○	○	○	○

Variable Improving our Services to our Polish Business Partners -

6. Part III MIAG Service Offering and Financial Information (II)

Finally we would like to know more about your company and financial situation.

27. (104_S_FOU_T) When was your company founded? (Year)

28. (105_S_EXP_T) How much of your sales is export? (%)

29. (106_S_FAC_C) Do you have a factoring arrangement with another institution?

○ Yes ○ No

(107_S_FAC_T) Since when (Year)

30. (108_S_INS_C) Do you buy credit insurance protection from another institution?

○ Yes ○ No

(109_S_INS_T) Since when (Year)

31. (110_S_ABE_T) For a product produced or sourced by you, approximately what percent of its cost is accounted for by the cost to finance production or sourcing? (%)

32. (111_S_RAT_C) Approximately, what is the interest rate your bank charged you in 2008? (per annum)

○ <3% ○ 3%-4% ○ 5%-6% ○ 6%-7% ○ 8%-9% ○ 10%-11% ○ >11%

33. What is you Sales Revenue? (in PLN)

(114_S_SAL_T)
2008

34. What is your total number of Employees?

(119_S_EMP_T)
2008

Variable Improving our Services to our Polish Business Partners -

35. Balance Sheet Information (End of 2008 in PLN)

a. (124_S_FIN_T) Accounts Receivable (DSO)	
b. (125_S_FIN_T) Inventory	
c. (126_S_FIN_T) Cash	
d. (127_S_FIN_T) Long-term liabilities (More than 1 year)	
e. (128_S_FIN_T) Accounts payable (DPO)	
f. (129_S_FIN_T) Short-term debt (Less than 1 year)	
g. (130_S_FIN_T) Equity (Share Capital)	
h. (131_S_FIN_T) Retained Earnings (Reserves and Surplus)	

Appendix C: Complete Database: 131 items+49 variables=180 variables (Exhibit 16):

N/N	Name	Type	Width	Decimals	Label	Values	Missing	Columns	Align	Measure	Role
1	N_N	Numeric	3	0	1	None	0	3	Right	Scale	Input
2	Key	String	90	0	2	None	0	9	Left	Nominal	Input
3	C_Duplicates	String	9	0	3	{1, Single Respor	0	8	Left	Nominal	Input
4	Industry	String	27	0	4	{111, Bakery}...	0	5	Left	Nominal	Input
5	Info_Top_200	String	126	0	5	{Estimate TO, 2}.	0	9	Left	Nominal	Input
6	To_from_x_month_till_y_month	Custom	20	0	6 - (PLN)	None	0	14	Right	Scale	Input
7	Street	String	180	0	7	None	0	18	Left	Nominal	Input
8	ZIP	String	72	0	8	None	0	5	Right	Nominal	Input
9	PLC	String	72	0	9	None	0	10	Left	Nominal	Input
10	Country	String	72	0	10	None	0	6	Left	Nominal	Input
11	Tel	String	450	0	11	None	0	19	Right	Nominal	Input
12	Name	String	450	0	12	None	0	35	Left	Nominal	Input
13	Position	String	450	0	13	None	0	35	Left	Ordinal	Input
14	Position_Level	String	450	0	13 - P.L.	{1, Owner}...	0	9	Left	Ordinal	Input
15	@1_G_R_T	String	450	0	14 - Company	None	0	44	Left	Nominal	Input
16	@2_G_R_T	String	360	0	15 - Contact	None	0	23	Left	Nominal	Input
17	@3_G_R_T	Numeric	8	0	16 - Years Emp.	None	0	8	Right	Scale	Input
18	@4_G_R_T	String	450	0	17 - Email	None	0	27	Right	Nominal	Input
19	@5_G_R_T	String	450	0	18 - Tel	None	0	12	Right	Nominal	Input
20	@6_10_G_F_M	String	72	0	19-23 - Function	{1, CEO / Genera	0	10	Right	Nominal	Input
21	@11_L_S_C	String	72	0	24 - Metro sales line	{1, Makro}...	0	8	Right	Nominal	Input
22	@12_L_S_T	String	135	0	25 - Supplier code 1	None	0	8	Right	Nominal	Input
23	@13_L_S_T	String	135	0	26 - Supplier code 2	None	0	10	Right	Nominal	Input
24	@14_L_S_T	String	135	0	27 - Supplier code 3	None	0	8	Right	Nominal	Input
25	@15_L_TB_R7	Numeric	8	0	28 - OER, promises	None	0	10	Right	Scale	Input
26	@16_L_TB_R7	Numeric	8	0	29 - OER, concern	None	0	10	Right	Scale	Input
27	@17_L_TB_R7	Numeric	8	0	30 - OER, responsiveness	None	0	10	Right	Scale	Input
28	@18_L_GC_R7	Numeric	8	0	31 - OER, goal alignment	None	0	10	Right	Scale	Input
29	@19_L_VD_R7	Numeric	8	0	32 - OER, dependency	None	0	10	Right	Scale	Input
30	@20_L_JO_R7	Numeric	8	0	33 - OER, dispute	None	0	10	Right	Scale	Input
31	@21_L_GC_R7	Numeric	8	0	34 - OER, support	None	0	10	Right	Scale	Input
32	@22_L_IE_R7	Numeric	8	0	35 - OER, info exchange 1	None	0	10	Right	Scale	Input
33	@23_L_IE_R7	Numeric	8	0	36 - OER, info exchange 2	None	0	10	Right	Scale	Input
34	@24_L_IE_R7	Numeric	8	0	37 - OER, info exchange 3	None	0	10	Right	Scale	Input
35	@25_L_VD_R7	Numeric	8	0	38 - OER, replacement	None	0	10	Right	Scale	Input
36	@26_L_VD_R7	Numeric	8	0	39 - OER, alternative	None	0	10	Right	Scale	Input
37	@27_L_GC_R7	Numeric	8	0	40 - OER, goal combatibility	None	0	10	Right	Scale	Input
38	@28_L_JO_R7	Numeric	8	0	41 - OER, Creditworthiness	None	0	10	Right	Scale	Input
39	@29_L_JO_R7	Numeric	8	0	42 - OER, worrying	None	0	10	Right	Scale	Input
40	@30_L_DS_R7	Numeric	8	0	43 - F, fin. health signal	None	0	10	Right	Scale	Input
41	@31_L_FR_R7	Numeric	8	0	44 - F, Price concessions force	None	0	10	Right	Scale	Input
42	@32_L_FR_R7	Numeric	8	0	45 - F, Payment terms demands	None	0	10	Right	Scale	Input
43	@33_L_FR_R7	Numeric	8	0	46 - F, Higher service level	None	0	10	Right	Scale	Input
44	@34_L_DS_R7	Numeric	8	0	47 - F, Fin. problems signal	None	0	10	Right	Scale	Input
45	@35_L_FL_R7	Numeric	8	0	48 - F, Financing replacement	None	0	10	Right	Scale	Input
46	@36_L_FL_R7	Numeric	8	0	49 - F, Price renegotiation	None	0	10	Right	Scale	Input
47	@37_L_FL_R7	Numeric	8	0	50 - F, Unreasonable requests objection	None	0	10	Right	Scale	Input
48	@38_L_DS_R7	Numeric	8	0	51 - F, Order financing difficulty	None	0	10	Right	Scale	Input
49	@39_L_REL_R7	Numeric	8	0	52 - SR, Relationship success	None	0	10	Right	Scale	Input
50	@40_L_REL_R7	Numeric	8	0	53 - SR, Expectations fulfillment	None	0	10	Right	Scale	Input
51	@41_L_REL_R7	Numeric	8	0	54 - SR, Relationship outcomes satisfactio	None	0	10	Right	Scale	Input
52	@42_L_CFIN_R7	Numeric	8	0	55 - ORC, AR or DSO	None	0	11	Right	Scale	Input
53	@43_L_CFIN_R7	Numeric	8	0	56 - ORC, Credit cost	None	0	11	Right	Scale	Input
54	@44_L_CFIN_R7	Numeric	8	0	57 - ORC, Credit exposure	None	0	11	Right	Scale	Input
55	@45_L_CFIN_R7	Numeric	8	0	58 - ORC, Credit insurance cost	None	0	11	Right	Scale	Input
56	@46_L_CFIN_R7	Numeric	8	0	59 - ORC, DIO	None	0	11	Right	Scale	Input
57	@47_L_CFIN_R7	Numeric	8	0	60 - ORC, Invoice disputes rate	None	0	11	Right	Scale	Input
58	@48_L_CFIN_R7	Numeric	8	0	61 - ORC, Delayed payments rate	None	0	11	Right	Scale	Input
59	@49_L_CFIN_R7	Numeric	8	0	62 - ORC, Non-payment rate	None	0	11	Right	Scale	Input
60	@50_L_CFIN_R7	Numeric	8	0	63 - ORC, Liquidity	None	0	11	Right	Scale	Input
61	@51_L_CFIN_R7	Numeric	8	0	64 - ORC, Sales	None	0	11	Right	Scale	Input
62	@52_L_TO_T_cor	Numeric	8	4	65 - Turnover % (999 missing values)	None	999	14	Right	Scale	Input
63	@53_L_DIS_T_cor	Numeric	8	0	66 - Dispute frequency (annual / 999 mv)	None	999	14	Right	Scale	Input
64	@54_L_OVD_T_cor	Numeric	8	0	67 - Payment delays (days average / 999 m	None	999	14	Right	Scale	Input
65	@55_L_OVDP_T_cor	Numeric	8	4	68 - Overdue payments (% total turnover /	None	999	14	Right	Scale	Input
66	@56_L_PT_T	Numeric	8	0	69 - PT08, Days net	None	999	8	Right	Scale	Input
67	@57_L_PT_T	Numeric	8	0	70 - PT08, Days with discount	None	999	8	Right	Scale	Input
68	@58_L_PT_T	Numeric	8	4	71 - PT08, Discount (%)	None	999	8	Right	Scale	Input
69	@59_L_PT_T	Numeric	8	0	72 - PT07, Days net	None	999	8	Right	Scale	Input
70	@60_L_PT_T	Numeric	8	0	73 - PT07, Days with discount	None	999	8	Right	Scale	Input
71	@61_L_PT_T	Numeric	8	4	74 - PT07, Discount (%)	None	999	8	Right	Scale	Input
72	@62_L_PT_T	Numeric	8	0	75 - PT06, Days net	None	999	8	Right	Scale	Input
73	@63_L_PT_T	Numeric	8	0	76 - PT06, Days with discount	None	999	8	Right	Scale	Input
74	@64_L_PT_T	Numeric	8	4	77 - PT06, Discount (%)	None	999	8	Right	Scale	Input

N/N	Name	Type	Width	Decimals	Label	Values	Missing	Columns	Align	Measure	Role
75	@65_L_PT_T	Numeric	8	0	78 - PT05, Days net	None	999	8	Right	Scale	Input
76	@66_L_PT_T	Numeric	8	0	79 - PT05, Days with discount	None	999	8	Right	Scale	Input
77	@67_L_PT_T	Numeric	8	4	80 - PT05, Discount (%)	None	999	8	Right	Scale	Input
78	@68_L_PT_T	Numeric	8	0	81 - PT04, Days net	None	999	8	Right	Scale	Input
79	@69_L_PT_T	Numeric	8	0	82 - PT04, Days with discount	None	999	8	Right	Scale	Input
80	@70_L_PT_T	Numeric	8	4	83 - PT04, Discount (%)	None	999	8	Right	Scale	Input
81	@71_S_MSC_R7	Numeric	8	0	84 - MSC, Attractiveness	None	0	11	Right	Scale	Input
82	@72_S_MSC_R7	Numeric	8	0	85 - MSC, Fee	None	0	11	Right	Scale	Input
83	@73_S_MVD_R7	Numeric	8	0	86 - MSC, MVD attractiveness	None	0	11	Right	Scale	Input
84	@74_S_MVD_R7	Numeric	8	0	87 - MSC, MVD int. rate charged (by Citi)	None	0	11	Right	Scale	Input
85	@75_S_MVD_R7	Numeric	8	0	88 - MSC, MVD per invoice service fee (by	None	0	11	Right	Scale	Input
86	@76_S_MVD_R7	Numeric	8	0	89 - MSC, MVD reserve	None	0	11	Right	Scale	Input
87	@77_S_MVD_R7	Numeric	8	0	90 - MSC, MVD factor amount	None	0	11	Right	Scale	Input
88	@78_S_OVR_R7	Numeric	8	0	91 - MSC, Platform fee	None	0	11	Right	Scale	Input
89	@79_S_OVR_R7	Numeric	8	0	92 - MSC, Overall services cost	None	0	11	Right	Scale	Input
90	@80_S_VOL_R7	Numeric	8	0	93 - AP, Adoption option	None	0	11	Right	Scale	Input
91	@81_S_VOL_R7	Numeric	8	0	94 - AP, Adoption obligation	None	0	11	Right	Scale	Input
92	@82_S_VOL_R7	Numeric	8	0	95 - AP, Pressure to adopt MIAG SO	None	0	11	Right	Scale	Input
93	@83_S_CRI_R7	Numeric	8	0	96 - ECI, Credit availability access	None	0	11	Right	Scale	Input
94	@84_S_CRI_R7	Numeric	8	0	97 - ECI, Credit funding cost level	None	0	11	Right	Scale	Input
95	@85_S_CRI_R7	Numeric	8	0	98 - ECI, Credit limits level	None	0	11	Right	Scale	Input
96	@86_S_CRI_R7	Numeric	8	0	99 - ECI, Credit insurance level	None	0	11	Right	Scale	Input
97	@87_S_CRI_R7	Numeric	8	0	100 - ECI, Growth prospects	None	0	11	Right	Scale	Input
98	@88_S_CRI_R7	Numeric	8	0	101 - ECI, Finance expertise, savviness	None	0	11	Right	Scale	Input
99	@89_S_BAN_R5	Numeric	8	0	102 - BR, Services quality	None	0	11	Right	Scale	Input
100	@90_S_BAN_R5	Numeric	8	0	103 - BR, Price attractiveness	None	0	11	Right	Scale	Input
101	@91_S_BAN_R5	Numeric	8	0	104 - BR, Ease of collaboration	None	0	11	Right	Scale	Input
102	@92_S_BAN_R5	Numeric	8	0	105 - BR, Fin. stability	None	0	11	Right	Scale	Input
103	@93_S_MIA_R7	Numeric	8	0	106 - MP, Fund access flexibility	None	0	11	Right	Scale	Input
104	@94_S_MIA_R7	Numeric	8	0	107 - MP. Fund access simplicity	None	0	11	Right	Scale	Input
105	@95_S_MIA_R7	Numeric	8	0	108 - MP, Fund access cost	None	0	11	Right	Scale	Input
106	@96_S_MIA_R7	Numeric	8	0	109 - MP, Funds transfer speed	None	0	11	Right	Scale	Input
107	@97_S_MIA_R7	Numeric	8	0	110 - MP, Payments punctuality	None	0	11	Right	Scale	Input
108	@98_S_MIA_R7	Numeric	8	0	111 - MP, Disputes support	None	0	11	Right	Scale	Input
109	@99_S_MIA_R7	Numeric	8	0	112 - MP, Inv. settlement visibility	None	0	11	Right	Scale	Input
110	@100_S_MIA_R7	Numeric	8	0	113 - MP, IT user friendliness	None	0	12	Right	Scale	Input
111	@101_S_MIA_R7	Numeric	8	0	114 - MP, Operations simplicity	None	0	12	Right	Scale	Input
112	@102_S_MIA_R7	Numeric	8	0	115 - MP, Helpdesk professionalism	None	0	12	Right	Scale	Input
113	@103_S_MIA_R7	Numeric	8	0	116 - MP, Contracts simplicity	None	0	12	Right	Scale	Input
114	@104_S_FOU_T	Numeric	8	0	117 - Company foundation year	None	0	12	Right	Scale	Input
115	@104_S_FOU_T_alt	Numeric	8	0	118 - Company, years since foundation	None	999	14	Right	Scale	Input
116	@105_S_EXP_T_cor	Numeric	8	4	119 - Export sales (% per year)	None	999	14	Right	Scale	Input
117	@106_S_FAC_C	Numeric	8	0	120 - Existing Factoring arr.	{1, Yes}...	0	12	Right	Scale	Input
118	@107_S_FAC_T	Numeric	8	0	121 - Existing Factoring arr. since (year)	None	0	12	Right	Scale	Input
119	@108_S_INS_C	Numeric	7	0	122 - Existing credit insurance	{1, Yes}...	0	12	Right	Scale	Input
120	@109_S_INS_T	Numeric	8	0	123 - Existing credit insurnace since (year)	None	0	12	Right	Scale	Input
121	@110_S_ABE_T_cor	Numeric	8	4	124 - Cost of production financing per pr. (	None	999	14	Right	Scale	Input
122	@111_S_RAT_C	Numeric	8	0	125 - Interest rate charged by bank (cat.<3	{1, <3%}...	0	12	Right	Scale	Input
123	@112_S_HAN_C	Numeric	8	0	126 - Banking relationship with Citi	{1, Yes}...	0	12	Right	Scale	Input
124	@113_S_HAN_T	Numeric	8	0	127 - Banking relationship with Citi since (	None	0	12	Right	Scale	Input
125	@114_S_SAL_T	Custom	20	0	128 - Sales revenue (PLN) 2008	None	0	12	Right	Scale	Input
126	@115_S_SAL_T	Custom	20	0	129 - Sales revenue (PLN) 2007	None	0	12	Right	Scale	Input
127	@116_S_SAL_T	Custom	20	0	130 - Sales revenue (PLN) 2006	None	0	12	Right	Scale	Input
128	@117_S_SAL_T	Custom	20	0	131 - Sales revenue (PLN) 2005	None	0	12	Right	Scale	Input
129	@118_S_SAL_T	Custom	20	0	132 - Sales revenue (PLN) 2004	None	0	12	Right	Scale	Input
130	@119_S_EMP_T_cor	Numeric	8	0	133 - No. of employees - 2008	None	0	14	Right	Scale	Input
131	@120_S_EMP_T_cor	Numeric	8	0	134 - No. of employees - 2007	None	0	14	Right	Scale	Input
132	@121_S_EMP_T_cor	Numeric	8	0	135 - No. of employees - 2006	None	0	14	Right	Scale	Input
133	@122_S_EMP_T_cor	Numeric	8	0	136 - No. of employees - 2005	None	0	14	Right	Scale	Input
134	@123_S_EMP_T_cor	Numeric	8	0	137 - No. of employees - 2004	None	0	14	Right	Scale	Input
135	@124_S_FIN_T_cor	Custom	8	0	138 - Accounts receivable (PLN)	None	999	14	Right	Scale	Input
136	@125_S_FIN_T_cor	Custom	8	0	139 - Inventory (PLN)	None	999	14	Right	Scale	Input
137	@126_S_FIN_T_cor	Custom	8	0	140 - Cash (PLN)	None	999	14	Right	Scale	Input
138	@127_S_FIN_T_cor	Custom	8	0	141 - Long-term liabilities (PLN)	None	999	14	Right	Scale	Input
139	@128_S_FIN_T_cor	Custom	8	0	142 - Accounts payable (PLN)	None	999	14	Right	Scale	Input
140	@129_S_FIN_T_cor	Custom	8	0	143 - Short-term debt (PLN)	None	999	14	Right	Scale	Input
141	@130_S_FIN_T_cor	Custom	8	0	144 - Equity / Share capital (PLN)	None	999	14	Right	Scale	Input
142	@131_S_FIN_T_cor	Custom	8	0	145 - Retained earnings (PLN)	None	999	14	Right	Scale	Input
143	Adopt_0_1_2	Numeric	8	0	146 - Nothing, MSC, MVD	{0, No adoption}	999	10	Right	Nominal	Input
144	Adopt_0_MSC_plus_MVD	Numeric	8	0	147 - Nothing (0) or MSC & MVD (1)	{0, No adoption}	999	17	Right	Nominal	Input
145	Adopt_0_plus_MSC_MVD	Numeric	8	0	148 - Nothing or MSC (0) or MVD (1)	{0, No adoption &	999	17	Right	Nominal	Input

N/N	Name	Type	Width	Decimals	Label	Values	Missing	Columns	Align	Measure	Role
146	Letter_date_sent	String	126	0	149 - Letter_date_sent	None	0	12	Right	Nominal	Input
147	Bank_Call_Followup_date	String	126	0	150 - Bank_Call_Followup_date	None	0	16	Right	Nominal	Input
148	Contact_Date_Supplier	String	126	0	151 - Contact_Date_Supplier	None	0	16	Right	Nominal	Input
149	To_Bank_Sent_date	String	126	0	152 - To_Bank_Sent_date	None	0	14	Right	Nominal	Input
150	Communication_Type	String	126	0	153 - Communication_Type	None	0	14	Right	Nominal	Input
151	Staff_name	String	162	0	154 - Staff_name	None	0	11	Right	Nominal	Input
152	Supplier_No	String	126	0	155 - Supplier_No	None	0	9	Right	Nominal	Input
153	F_NF	String	90	0	156 - F_NF	{F, 1}...	0	5	Right	Nominal	Input
154	MSC_Info	String	126	0	157 - MSC_Info	{with MSC, 1}...	0	9	Right	Nominal	Input
155	MIAG_comments_to_Bank	Numeric	8	0	158 - MIAG_comments_to_Bank	None	0	11	Right	Scale	Input
156	Remarks	String	900	0	159 - Remarks	None	0	8	Left	Nominal	Input
157	Platform_Fee	Custom	8	1	160 - Platform_Fee (PLN)	None	.0	9	Right	Scale	Input
158	MF	Numeric	8	1	161 - MF	None	0	4	Right	Scale	Input
159	MSC_Percentage	Numeric	8	4	162 - MSC_Percentage (%)	None	0	11	Right	Scale	Input
160	Deadline_for_MSC	String	270	0	163 - Deadline_for_MSC	None	0	15	Left	Nominal	Input
161	Early_Bird_MIAG	Numeric	8	4	164 - Early_Bird_MIAG (%)	None	0	11	Right	Scale	Input
162	Bank_Margin	Numeric	8	4	165 - Bank_Margin (%)	None	0	9	Right	Scale	Input
163	MVD_interest_perc_MIAG	Numeric	8	4	166 - MVD_interest_MIAG (%)	None	999	9	Right	Scale	Input
164	Duration_in_Days_MIAG	Numeric	8	0	167 - Duration_in_Days_MIAG	None	999	8	Right	Scale	Input
165	Date_of_Received_from_MIAG	String	72	0	168 - Date_of_Received_from_MIAG	None	0	11	Right	Nominal	Input
166	Date_of_contact	String	72	0	169 - Date_of_contact	None	0	10	Right	Nominal	Input
167	Contact_person_from_the_Bank	String	162	0	170 - Contact_person_from_the_Bank	None	0	13	Right	Nominal	Input
168	MVD_interest_perc_Bank	Numeric	8	4	171 - MVD_interest_Bank (%)	None	999	9	Right	Scale	Input
169	Bank_Margin_perc_pa	Numeric	8	4	172 - Bank_Margin_pa (%)	None	999	9	Right	Scale	Input
170	Operational_Fee_Bank	Numeric	8	1	173 - Operational_Fee_Bank (PLN)	None	0	8	Right	Scale	Input
171	Early_Bird_Bank	Numeric	8	2	174 - Early_Bird_Bank	None	0	7	Right	Scale	Input
172	Bank_comments_to_MIAG	Numeric	8	0	175 - Bank_comments_to_MIAG	None	0	11	Right	Scale	Input
173	MSC_received_date	String	72	0	176 - MSC_received_date	None	0	9	Right	Nominal	Input
174	Addendum_received_date	String	72	0	177 - Addendum_received_date	None	0	13	Right	Nominal	Input
175	KYC_sent_to_Bank	String	72	0	178 - KYC_sent_to_Bank	None	0	8	Right	Nominal	Input
176	RPA_Prepared	String	72	0	179 - RPA_Prepared	None	0	9	Right	Nominal	Input
177	KYC_sent_to_MIAG	String	72	0	180 - KYC_sent_to_MIAG	None	0	9	Right	Nominal	Input
178	Duration_in_Days_Bank	Numeric	8	0	181 - Duration_in_Days_Bank	None	0	8	Right	Scale	Input
179	Signed_Reason	String	198	0	182 - Signed_Reason	None	0	18	Left	Nominal	Input
180	Contact_Type	String	90	0	183 - Contact_Type	{F2F, 1}...	0	9	Left	Nominal	Input

Appendix D: Spanish Translation of the sections 1.1, 1.4, 1.5 and 6:

1.1 Introducción: Foco y Contexto de la Investigación

El foco del presente estudio empírico está posicionado dentro del área de investigación interseccional de las Relaciones Comprador-Proveedor (RCP) y la Economía de la Cadena de Suministro (ECS), ampliamente definida como el sector que se centra en la gestión, planificación y control de todas las actividades, procesos y mecanismos de transacción relacionados con el flujo de efectivo entre las partes interesadas de la cadena de suministro con el objetivo de mejorar el capital circulante. (More y Basu, 2013). Adicionalmente, al tener en cuenta este enfoque, la presente investigación busca beneficiarse de las bases teóricas y emplear las perspectivas asociadas de la Teoría de la Agencia (TA) en cuanto a los principales elementos del comportamiento director-agente vs. las RCP orientadas a los resultados (Jensen y Meckling, 1976; Jensen, 1983; Eisenhardt, 1989), la Economía de los Costes de Transacción (ECT) en términos de ganancias mutuas, así como el riesgo de oportunismo en las RCP (Coase, 1937; Williamson, 1975; 2008), y las tres dimensiones de la Teoría del Capital Social (TCS) (Nahapiet y Ghoshal, 1998) en relación con la confianza (capital relacional), los objetivos comunes (capital cognitivo), así como el intercambio de información (capital estructural).

De forma más específica, llevando a cabo una encuesta en un grupo de proveedores (basada en un cuestionario científico diseñado y distribuido del que se extrajeron las respuestas) que ha sido informado en detalle, invitado a adoptar y expuesto a un programa de FCS (Factoraje Inverso, específicamente), ofrecido por uno de los más grandes grupos minoristas multinacionales, investigo los siguientes tres aspectos. En primer lugar, investigo los siguientes tres aspectos. En primer lugar, en el contexto de un programa de FCS ofrecido por un gran comprador a sus proveedores, esta investigación examina los principales antecedentes comunes relacionados y no con las finanzas de la percepción del

proveedor de la satisfacción y la confianza, y como consecuencia el impacto en la calidad de las RCP tal y como se captura mediante esas dos construcciones RCP de alta importancia. (Benton y Maloni, 2005; Kwon y Suh, 2004). En segundo lugar, propone un marco estratégico de proceso de evaluación del proveedor y explora el vínculo de esas dos grandes construcciones de RCP con la evaluación ex-ante (1ª fase) y ex-post (2ª fase) del proveedor en relación con el atractivo de un programa de FCS, así como el respectivo riesgo de comportamiento potencialmente oportunista por parte del comprador con posterioridad a una potencial adopción del programa de FCS. En tercer lugar, investiga el impacto del flujo de caja del proveedor en la percepción del atractivo del programa de FCS, así como del efecto del temor a la señalización de los problemas financieros en el riesgo percibido de potencial oportunismo del comprador. Estos dos motores adicionales relacionados con las finanzas, junto con los examinados de satisfacción y confianza en las RCP, proporcionan ciertos conocimientos académicos y empresariales útiles con respecto al proceso de evaluación por parte de los proveedores de los programas de SFC, así como de la naturaleza de los conceptos de atractivo y oportunismo ex-post del comprador, que se consideran relativamente nuevos como temas protagonistas de la investigación académica de las RCP, (Jap y Anderson, 2003; Hawkins et al., 2008; Hald et al., 2009), especialmente en el contexto de la exposición de los programas de FCS a los proveedores.

1.4 Introducción: Justificación y Cuestiones de la Investigación

Desde un punto de vista empresarial, desde la crisis crediticia de 2007-2008 en la que surgieron los problemas de liquidez del mercado y de la financiación, seguidos de una recesión económica y una crisis de deuda soberana (Mizen, 2008), las empresas, y especialmente las PYMEs, han visto crecer su preocupación por la gestión de su capital circulante debido a que, dado que obtener crédito bancario se volvía gradualmente más difícil, liberar capital circulante iba ganando terreno como objetivo económico necesario no solo para mantener niveles aceptables de liquidez operativa durante un entorno macro y microeconómico altamente volátil, sino también como factor crítico para acelerar el crecimiento (Beck y Kunt, 2006; De la Torre et al., 2010; Dervojeda et al., 2014).

Dado el problema de las limitaciones de crédito bancario, a pesar del hecho de que: **(1)** aproximadamente el 80% de las transacciones entre empresas son realizadas en condiciones de crédito de algún tipo; **(2)** el crédito comercial constituye alrededor del 37% del total de activos comerciales (Camerinelli y Schizas, 2014; Fabbri y Klapper, 2016); y **(3)** el FI parece ser un mecanismo de financiación beneficioso tanto para compradores como para proveedores (considerando los beneficios tangibles e intangibles y el valor neto anteriormente presentados) y teóricamente es preferido por encima de la herramienta establecida de FCS centrada en las cuentas por cobrar del factoraje, se estima que hasta 2014, tal y como se presenta en el **Expuesto 8,** representaba únicamente un 6% del mercado mundial de FCS centrado en las cuentas por cobrar expresado en dólares (Factors Chain International, International Factoring Association; Dervojeda et al., 2014; Camerinelli y Schizas, 2014), mientras que asumir que las tasas de crecimiento promedio acumulado del periodo 2008-2014 se registraron también durante el periodo 2015-2017, entonces en la actualidad este porcentaje no debería ser superior al 10% (470-630 billones de dólares.)

Exhibit 8: World Factoring & Reverse Factoring Market Size & Shares

Aboslute Figures (in millions of USD)	2008	2009	2010	2011	2012	2013	2014	CAGR '08-'14
Domestic - Invoice Discounting (FCI Members)	291.750	283.130	271.755	361.647	398.897	456.181	359.946	3,6%
Domestic - Recourse Factoring (FCI Members)	236.683	227.423	312.097	346.630	403.552	468.777	427.305	10,3%
Domestic - Non-Recourse Factoring (FCI Members)	343.212	346.695	376.285	429.210	464.291	475.980	446.576	4,5%
Domestic - Collections (FCI Members)	36.575	34.043	31.083	33.712	36.635	43.337	48.151	4,7%
Domestic - Factoring by Non-FCI Members	1.620.010	1.598.883	1.863.278	2.268.640	2.346.646	2.492.053	2.229.078	5,5%
International - Export Factoring (FCI Members)	124.424	108.185	167.459	211.162	253.907	302.658	290.990	15,2%
International - Import Factoring (FCI Members)	31.532	25.205	31.336	40.092	48.398	69.674	64.903	12,8%
International - Export Invoice Discounting (FCI Members)	45.727	57.705	39.619	66.170	112.288	120.694	106.839	15,2%
International - Factoring by Non-FCI Members	248.397	236.606	326.724	342.204	464.700	555.941	588.185	15,5%
World Factoring market (domestic & international markets)	**2.978.311**	**2.919.884**	**3.421.646**	**4.101.478**	**4.531.326**	**4.987.308**	**4.563.988**	**7,4%**
World Reverse Factoring market (domestic & international)*	**48.249**	**67.157**	**92.384**	**123.044**	**163.128**	**214.454**	**267.900**	**33,1%**

Market Shares (in %)	2008	2009	2010	2011	2012	2013	2014	CAGR '08-'14
Domestic - Invoice Discounting (FCI Members)	10%	10%	8%	9%	9%	9%	8%	-3,55%
Domestic - Recourse Factoring (FCI Members)	8%	8%	9%	8%	9%	9%	9%	2,77%
Domestic - Non-Recourse Factoring (FCI Members)	12%	12%	11%	10%	10%	10%	10%	-2,69%
Domestic - Collections (FCI Members)	1%	1%	1%	1%	1%	1%	1%	-2,50%
Domestic - Factoring by Non-FCI Members	54%	55%	54%	55%	52%	50%	49%	-1,78%
International - Export Factoring (FCI Members)	4%	4%	5%	5%	6%	6%	6%	7,30%
International - Import Factoring (FCI Members)	1%	1%	1%	1%	1%	1%	1%	5,04%
International - Export Invoice Discounting (FCI Members)	2%	2%	1%	2%	2%	2%	2%	7,28%
International - Factoring by Non-FCI Members	8%	8%	10%	8%	10%	11%	13%	7,52%
World Factoring market (domestic & international markets)	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	
World Reverse Factoring market (domestic & international)*	**1,6%**	**2,3%**	**2,7%**	**3,0%**	**3,6%**	**4,3%**	**5,9%**	**23,93%**

Source: Factors Chain International, International Factoring Association.
**: 2011 figure (Wikipedia, International Factoring Association, 2011); 2014 figure (Camerinelli & Schizas, 2014).*
**: 2008, 2010, 2012, 2013 estimates based on EC, Business Innovation Observatory (Dervojeda et al. 2014) growth range estimates.*

Históricamente, el mercado del factoraje registró un valor total superior a 860 billones de dólares. A nivel mundial en 2004, como resultado de una impresionante tasa de crecimiento total del 88% durante 1998-2004 (Klapper, 2005; 2006), y un continuo crecimiento con una tasa de crecimiento promedio acumulado anual del 7.4% durante 2008-2014 alcanzando aproximadamente 4,56 trillones de dólares en 2014 con las actividades de factoraje registrando las tasas de crecimiento más elevadas e incrementando su cuota de mercado total a un 22% en 2014, desde un 15% en 2008, mientras que las actividades de factoraje doméstico reducían su respectiva cuota de mercado de un 85% en 2008 a un 78% en 2014. En cuanto al mercado mundial del FI, éste registró una impresionante tasa de crecimiento promedio acumulado anual de aproximadamente el 33% durante 2008-2014 con su respectiva cuota de mercado registrando una reducción continuada 2008 y siendo los sectores más activos el minorista, el de fabricación, el de productos de consumo, el automotriz, el aeroespacial, el de la agricultura, el químico y el farmacéutico (Dervojeda et al., 2014). Sin embargo, la cuota de mercado de FI sigue siendo relativamente baja, en comparación con la dimensión total del Mercado mundial de FCS centrado en las cuentas por cobrar, sigue una tasa de crecimiento anual en desaceleración, y, de acuerdo con las

proyecciones del Observatorio de Innovación Empresarial de la Comisión Europea, se predice que este mercado crecerá en 10% anualmente hasta 2020 (Dervojeda et al., 2014). Asimismo, en un informe más reciente de McKinsey (Herath, 2015), el potencial de la industria del FI se considera grande, con 1,8 trillones de dólares en cuentas por pagar altamente seguras y financiables estimadas a nivel mundial y un fondo común de ingresos (para los proveedores del programa de FI) de 20 billones de dólares. La mayoría de los programas de FI están en los sectores minorista, automotriz y de fabricación con oportunidades significativas de ser capturados en los de la tecnología y los bienes de capital. A día de hoy, sin embargo, no pueden ser potencialmente capturados más de 2 billones de dólares, pero se espera que este mercado potencial continúe creciendo en aproximadamente un 15% para el periodo 2015-2018 (Herath, 2015). En base a estos hechos, existen tres importantes cuestiones investigativas derivadas: En primer lugar, de qué forma la exposición a los programas de FCS, tales como el FI, y la invitación a su adopción está relacionada con los motores y la calidad de una RCP (según la percepción de los proveedores). En segundo lugar, qué impulsa el proceso de evaluación de los proveedores de la adopción de un programa de FI ofrecido por grandes minoristas (ceteris paribus los parámetros típicos de los programas que varían, como los beneficios tangibles, costes, tasas, etc. identificados). En tercer lugar, por qué está teniendo lugar este fenómeno de mercado del FI en las cadenas de suministro y en particular entre los grandes minoristas (directores) y los proveedores (agentes)?

Desde un punto de vista académico, la investigación a nivel de la interfaz de las operaciones y las finanzas está creciendo rápidamente, y las oportunidades de investigación dentro del capo de los sistemas de crédito alternativos (como el programa de FI) han sido acentuadas (Seifert et al., 2013). Más específicamente, tan pronto como en 2002 aparece referencia explícita a la FCS (Stemmler), mientras que se proporcionó una definición general académica en 2009 de mano de Pfohl y Gomm, como "*la optimización*

interempresarial de la financiación, así como la integración de los progresos de financiación con los clientes, proveedores y prestadores de servicios con el fin de incrementar el valor de todas las empresas participantes". Asimismo, los investigadores han señalado que la gestión de las operaciones puede mejorarse significativamente teniendo en cuenta el impacto que tendrán las decisiones económicas en las operaciones (por ejemplo, Buzacott y Zhang, 2004; Berling y Rosling, 2005; Protopappa-Sieke y Seifert, 2010). Sin embargo, la teoría y la práctica de la FCS no están maduras de modo alguno (Iacono et al., 2015) y, por lo tanto, la continuación del análisis de las complejas dinámicas y los desafíos de gestión en las cadenas de suministro financieras sigue siendo una tarea importante (More y Basu, 2013), teniendo en cuenta que la investigación de la FCS no debería centrarse únicamente en la gestión de flujos financieros a lo largo de las cadenas de suministro (p. ej. Bowersox y Closs, 1996; Mentzer et al., 2001; Hofmann y Kotzab, 2010; Gupta y Dutta 2011) y en las decisiones de crédito comercial para la coordinación de las cadenas de suministro (p. ej., Lee y Rhee., 2011), sino también en los beneficios, objetivos y antecedentes del FI (p. ej. Klapper, 2005; 2006; Vliet et al., 2015; Lekkakos y Serrano, 2016; Liebl et al., 2016).

Como tal, existen tentativas relativamente limitadas de investigación hasta la fecha (p. ej. Wuttke et al., 2013) las cuales tratan de proporcionar posibles explicaciones para: **(1)** el nivel relativamente bajo de adopción de la FCS por parte de solo un 15% de las firmas (Aberdeen Group, 2007); **(2)** lo importantes factores de evaluación de la adopción desde la perspectiva del proveedor; o **(3)** las potenciales formas en que un comprador podría persuadir suficientemente a los proveedores para que adopten un programa/instrumento de FCS y, al mismo tiempo, mantengan o mejores la respectiva calidad de las RCP. Considerando la importancia empresarial del mercado de la FCS y sus respectivos instrumentos, el fenómeno registrado de un nivel relativamente bajo de cuota de mercado del FI (en comparación con el valor de mercado mundial de la FCS, así como en términos de participación de los proveedores), su potencial futuro y las respectivas oportunidades de

investigación académica e insuficiencia de conocimientos identificadas y destacadas, considero que el foco de mi investigación, tal y como se presenta desde diferentes aspectos en las secciones precedentes, puede considerarse relevante para las empresas y académicamente significativa en términos de la investigación empírica llevada a cabo.

1.5 Introducción: Objetivos y Contribución

La presente investigación tiene un objetivo triple. En primer lugar, contribuir a una mejor comprensión de la relación entre el proceso de evaluación de la adopción de programas de FI seguido por proveedores invitados y su percepción de la calidad de las RCP, tal y como se plasma en la satisfacción con las RCP, la confianza CP y sus cuatro antecedentes comunes relacionados y no con la economía (intercambio de información, congruencia de objetivos, solvencia crediticia del comprador y beneficio del capital circulante del proveedor). De forma más específica, investigar el potencial impacto de la satisfacción con las RCP y la confianza CP en la evaluación ex-ante de los proveedores, en base al atractivo de los programas de FI, y en la evaluación ex-post, en base al riesgo de comportamiento oportunista por parte del vendedor, respectivamente. En segundo lugar, examinar el potencial vínculo entre los parámetros importantes relacionados con la economía del flujo de caja de los proveedores y el temor a los problemas financieros señalando al proceso de evaluación de adopción del programa de FI de los proveedores. En tercer lugar, con posterioridad al análisis de los primeros dos objetivos, proporcionar una potencial explicación adicional al respecto de la relativamente baja cuota de mercado del Mercado del FI desde el punto de vista de las RCP, ceteris paribus parámetros legales y regulatorios, condiciones macroeconómicas, industriales y bancarias, así como términos y condiciones relacionadas con el FI (tales como costes del programa, tasas, etc.). Más en específico, en relación con los antecedentes de calidad de las RCP examinados, además de los ya bien investigados motores no financieros de **(1)** el intercambio de información (p.

ej. Lee at al., 1997; Li, 2002; Huang et al., 2003; Zhou y Benton, 2007; Caglio y Ditillo, 2012) y **(2)** la congruencia de objetivos (p. ej. Narayanan y Raman, 2004; Angerhofer y Angelides, 2006; Rossetti y Choi, 2008; Vachon et al., 2009; Cao y Zhang, 2011), esta investigación busca expandir la comprensión del impacto de los principales antecedentes en relación con la economía, como lo son **(3)** la solvencia crediticia del comprador, y **(4)** el beneficio del capital circulante del proveedor en la calidad de las RCP (según la percepción del proveedor) donde la investigación existente sobre esos dos constructos es relativamente limitada y todavía no está bien desarrollada (p. ej. Lee y Rhee, 2011; Elgazzar et al., 2012; Seifert et al., 2013).

Adicionalmente, además de la examinación de la importancia de los dos principales motores no relacionados y los dos sí relacionados con la economía para la calidad de las RCP, dentro del contexto de la adopción de programas de FI, y si los motores relacionados con la economía son más o menos importantes en comparación con los no relacionados con la economía, albergo esperanzas de aportar algunos conocimientos adicionales útiles acerca de los motores adicionales de la evaluación de la adopciones de programas de FI realizada por los proveedores, centrándome en el flujo de caja de los mismos y en el temor a la señalización de problemas financieros. El flujo de cada de la empresa del proveedor se examina ya que cabría esperar que, en base a los análisis de los programas de FI y sus beneficios (como se presentan en las secciones precedentes), la situación de caja de los proveedores debería estar asociada con la evaluación de la adopción del programa de FI. Esto encuentra apoyo adicional en la reciente investigación llevada a cabo en relación con los programas de FCS que subraya el vínculo entre la evaluación de la potencial adopción y el estado financiero de la empresa del proveedor, como el volumen de cuentas por (Iacono et al., 2015), y la mejora económica del beneficio neto (tras costes) que dicha adopción podría proporcionar en relación con los objetivos de capital circulante de la empresa (Liebl et al., 2016; Vliet et al., 2015). Además, el temor de los proveedores a la señalización de

los problemas económicos en caso de adopción de un programa de FI también es examinado dado que tales señales, verdaderas o falsas, podrían percibirse no solo como advertencias importantes de comportamiento oportunista sino también como alertas tempranas de ineficiencias y problemas operativos o económicos que podrían afectar también a la propia condición operativa o económica del comprador (Connelly et al., 2011).

Para respaldar el razonamiento de mis argumentos y resultados de investigaciones, he examinado y empleado los fundamentos teóricos proporcionados por las perspectivas asociadas de: **(1)** La Teoría de la Agencia (TA) relativa al comportamiento director-agente vs. las relaciones orientadas a los resultados (Jensen y Meckling, 1976; Jensen, 1983; Eisenhardt, 1989); **(2)** La Economía de los Costes de Transacción (ECT) en términos de ganancias mutuas, así como del riesgo de oportunismo en las RCP (Coase, 1937; Williamson, 1975; 2008); y **(3)** Las tres dimensiones de La Teoría del Capital Social (TCS) (Nahapiet y Ghoshal, 1998) al respecto de la confianza (capital relacional), los objetivos comunes (capital cognitivo), así como el intercambio de información (capital estructural).

6. Conclusión

El foco del presente estudio de investigación empírica, que se posiciona en el marco del área de investigación interseccional de las RCP y el FCS, está en el proceso de evaluación de los programas de FI que siguen los proveedores para decidir si adoptarán, o no, dicho programa, el cual es ofrecido por un gran minorista con el que colaboran. De forma más específica, empleando los resultados de la investigación, se ha desarrollado un marco de evaluación de la adopción de programas de FI de dos fases, que se basa en una evaluación ex-ante por parte del proveedor del atractivo de un programa de FI (componente de evaluación ex-ante) y una evaluación ex-post del proveedor del riesgo de oportunismo por parte del comprador, con posterioridad a la potencial adopción (componente de evaluación ex-post). Esta evaluación está impulsada por dos componentes fundamentales de calidad de las RCP (satisfacción con las RCP / confianza entre comprador y proveedor y en sus antecedentes comunes económicos y no) junto con los importantes impulsores adicionales del flujo de caja de los proveedores, el cual puede volver a determinado programa de FI más o menos atractivo, y su temor a la señalización de problemas económicos, en caso de que adoptasen dicho programa. Además, dentro de cada fase de evaluación del proveedor, existen ciertos moderadores relacionados con la economía que han sido examinados (retraso en los pagos por parte del comprador, pagos vencidos del comprador y proporción actual del proveedor), afectando al impacto de la calidad de las RCP o de los impulsores relacionados con las finanzas en el componente principal de evaluación de cada nivel.

Los resultados de las pruebas del marco de evaluación de la adopción sugeridos, proporcionan ciertos conocimientos desde un punto de vista tanto académico como empresarial. Más específicamente, en términos de la perspectiva académica, los resultados indican que la calidad de las RCP parece ser importante para la evaluación y decisión de los proveedores a la hora de adoptar un programa de FI. Por tanto, en línea con principios

fundamentales de la TA, el nivel de intercambio de información y de congruencia de los objetivos son motores importantes de la percepción de la calidad de las RCP del proveedor. Asimismo, el riesgo de oportunismo del comprador, que se basa en los principios de la teoría de la ECT y se considera una potencial fuente de costes de transacción (en caso de posible violación del acuerdo contractual o relacional), se tiene por un elemento importante de la evaluación de la adopción ex-post por parte de los proveedores. Además, en línea con la perspectiva de la TCS, los resultados de la investigación indican que la satisfacción con las RCP y la confianza entre comprador y proveedor (explicadas por el aspecto relacional de la teoría), la congruencia de los objetivos (explicada por el aspecto cognitivo de la teoría) y el intercambio de información (explicado por el aspecto estructural de la teoría) se consideran importantes dentro del contexto del proceso de adopción de un programa de FCS seguido por proveedores invitados.

En términos de los conocimientos generados desde la perspectiva empresarial, los resultados de la investigación parecen apoyar el marco estratégico sugerido del proceso de evaluación del proveedor. En cuanto tal, los grandes minoristas podrían considerar este marco como una guía o herramienta a la hora de diseñar, implementar y promover dichos programas de FCS a sus proveedores. Más específicamente, los resultados indican que tanto los impulsores relacionados con la economía como los que no lo están son relevantes en la 2ª fase del proceso de evaluación realizado por los proveedores, pero el intercambio de información parece ser el más importante para ambos niveles de evaluación por parte del proveedor. Por lo tanto, los compradores, a la hora de diseñar y desarrollar su estrategia de adopción de un programa de FI, deberían pensar en proporcionar información precisa, frecuenta, detallada y en profundidad acerca de las características específicas del programa de FI, mientras lo promocionan y por escrito (a través del contrato del programa de FI).

En Segundo lugar, en terminus de acciones estratégicas relacionadas con el nivel de adopción del programa de FI, los compradores podrían mejorar su satisfacción con las RCP

principalmente mejorando el intercambio de información y los beneficios del capital circulante, así como su solvencia crediticia hacia su proveedor debido a su colaboración. Sin embargo, cuanto más alta es la percepción de la calidad de las RCP del proveedor, menos atractivo es un programa de FI para los proveedores, y esto puede explicarme mediante la TSC en el sentido de que los proveedores que se encuentran muy satisfechos pueden opinar que en caso de necesidad de un acuerdo informal o de apoyo económico, el comprador ayudará de algún modo, debido al capital social generado a través de la colaboración hasta el momento, y por lo tanto no existe necesidad de pasar por un proceso de adopción de un programa de FI (el cual puede parecerles a los proveedores un proceso complejo, que consume mucho tiempo y con un beneficio neto bajo). Por ello, si los compradores desean mejorar su estrategia en cuanto a la evaluación de la adopción de un programa de FI ex-ante por parte de los proveedores, y en consecuencia incrementar la adopción de programas, deberían mantener un nivel óptimo de satisfacción con las RCP que sus beneficios netos no se perciban como más altos que los de un programa de FI.

En tercer lugar, en cuanto al proceso de evaluación del programa ex-post, los compradores podrían mejorar la percepción del proveedor de la confianza comprador-proveedor, principalmente mejorando el intercambio de información y la congruencia de los objetivos de comprador y proveedor, así como la percepción de los mismos de la solvencia crediticia y los beneficios del capital circulante. Por lo tanto, diseñar una estrategia de adopción de un programa de FI que comunique de forma clara los beneficios mutuos de dicho programa a los proveedores invitados, y que, por ello, conduzca a un nivel superior de alineación de los objetivos de compradores y proveedores, es fundamental. Además, en base a los resultados de los moderadores examinados, los comrpadores que cumplen todos los términos y condiciones de crédito comercial acordados y comunican la solvencia/calificación crediticia global a sus proveedores, podrían mejorar la evaluación de la adopción de un programa de FI llevada a cabo por dichos proveedores.

En cuarto lugar, teniendo en cuenta los puntos anteriores, cuando los compradores diseñan, implementan o ajustan su estrategia de adopción de un programa de FI, deberían considerar que existe un equilibrio entre la satisfacción con las RCP y la confianza comprador-proveedor en lo relacionado con el proceso de evaluación de los proveedores. Además, los compradores deberían realizar un esfuerzo a la hora de minimizar la presión por la adopción percibida por los proveedores, así como la impresión de que, en caso de adopción, el proveedor la considerará una señal de problemas económicos, y debería asegurar a los proveedores invitados de cualquier modo posible que adoptar dicho programa no conducirá a comportamiento oportunista alguno por parte del comprador (afectando negativamente a todos los programas de FI, u otros, términos, condiciones y contratos acordados).

Para finalizar, hay determinados conocimientos empresariales generados desde la perspectiva financiera. Más en específico, la percepción de que los proveedores con restricciones de efectivo deberían estar más atraídos por los programas de FI (un argumento que está teóricamente respaldado por la teoría financiera del Orden Jerárquico) no queda confirmada por los resultados de la investigación. Sin embargo, a pesar de la inconclusividad en este punto debido a la falta de relevancia estadística, los compradores, a la hora de promover dichos programas de FI, deberían por lo menos recalcar que estos programas no están dirigidos únicamente a tales empresas. Adicionalmente, los resultados indican que los proveedores que experimentaron más problemas de pagos (con el comprador que les está invitando a adoptar el programa de FI) y mejor liquidez, evaluarán el programa de FI más positivamente. Finalmente, desde un punto de vista macroeconómico, en relación con la cuota de Mercado relativamente baja de los programas de FI e comparación con el mercado global del factoraje, mis resultados indican que el submercado puede ser relativamente más pequeño debido a una evaluación negativa de los programas de FI por parte de los proveedores debido a una baja confianza entre

comprador y proveedor y la percepción del riesgo potencialmente alto de oportunismo del comprador con posterioridad a dicha adopción (ceteris paribus todos los demás factores económicos, legales y operativos relacionados con los programas de FI). Además, una posible razón adicional de dicho fenómeno también podrían ser las falsas percepciones de los proveedores invitados acerca de qué tipo de señal económica podría dar dicha adopción del programa al comprador y al mercado, así como cualquier entendimiento erróneo de lo que una muy positiva satisfacción con las RCP podría ofrecer al proveedor en momentos en los que pueda necesitar alguna clase de apoyo económico.

Teniendo en cuenta los conocimientos académicos y empresariales anteriores, espero haber logrado proporcionar algunas respuestas de interés a las cuestiones de la investigación señaladas inicialmente acerca de: **(1)** la forma en que la exposición e invitación a los programas de FCS, tales como el FI, está relacionada con los motores y la calidad de una RCP; **(2)** los importantes impulsores del proceso de evaluación de los proveedores invitados en cuanto a la potencial adopción de un programa de FI, y **(3)** el fenómeno identificado del mercado del FI (de baja cuota de mercado en comparación con el mercado del factoraje global) que está teniendo lugar en las cadenas de suministro y específicamente entre grandes minoristas y proveedores. Para finalizar, tengo esperanza de, a través del marco estratégico sugerido y examinado, haber contribuido a la mejor comprensión académica de este asunto específico de la adopción de programas de FCS y proporcionado una guía práctica para su uso por parte de compradores que, deseen diseñar una estrategia de adopción de programas de FI y, en consecuencia, desarrollar y promover un programa de FI ante sus proveedores con el objetivo final de alcanzar la tasa de adopción más alta posible y consecuentemente incrementar los beneficios netos mutuos que tales programas de FCS pueden proporcionar tanto a los proveedores invitados como a los grandes minoristas.