

# Supply Chain Finance Adoption: Towards a Readiness Assessment Framework

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**Purpose** – In the era of digital transformation, digital supply chain finance (SCF) solutions could be the future of supply chain financing. Recently, businesses worldwide have begun to adopt supply chain finance solutions in order to capitalize on the strengths of supply chain links and maximize working capital. Despite extensive investments in these digital financing services, many firms still experience significant complications during SCF adoption. Previous literature has been addressing the introduction and adoption decisions of different supply chain actors as well as the barriers, enablers, requirements and outcomes of SCF adoption. Yet, there is a dearth of research examining the readiness of firms to adopt SCF. In an effort to fill this gap, this thesis aims to develop a framework to assess the organizational, technological and financial readiness of firms to adopt SCF.

**Methodology** – In order to meet the objectives of the study the following methodologies will be conducted 1) a literature review followed by structured interviews will be conducted to formulate a hierarchical model for SCF readiness 2) an analytic hierarchy process (AHP) analysis will be used to prioritize and rank these readiness factors included in the hierarchical model 3) a case study methodology will be applied to assess the applicability of the model using extensive survey with SMEs in an emerging market context.

## 1. Introduction

Supply Chain Finance (SCF) is a financial strategy that involves the optimization of working capital and the reduction of financing costs among the different actors of the supply chain. SCF has gained popularity over the past decade due to its ability to alleviate financial risks by allowing lower interest rates and more flexible payment terms for supply chain partners (Wuttke et al., 2016; Wuttke et al., 2013). The idea of SCF has originated as a response to the financial crisis of 2008, which led to the tightening of credit and the reduction of liquidity in the market (Ivashina and Scharfstein, 2010). The crisis exposed the fragility of the traditional financial system, which heavily relied on banks and financial institutions as primary sources of financing. This led to the emergence of alternative financial solutions, such as SCF, which allowed businesses to access financing outside the traditional banking system (Hofmann and Belin, 2011).

As SCF research attracts researchers oriented in supply chain and finance fields (Chakuu et al., 2019). Finance researchers are primarily focusing on the short-term solutions offered by financial institutions (Yan et al., 2016; Raghavan and Mishra, 2011) while supply chain research moves beyond this focus to include physical and informational flow, governance efficiency and liquidity optimization that may (or may not) involve financial institutions (Banerjee et al., 2021; Gomm, 2010). Finance oriented studies define the SCF strategy as a set of financial services that is provided by banks and financial institutions (Chauffour and Malouche, 2011) while supply chain research focuses on the business and financing process that involves the different actors of the supply chain – the suppliers, buyers and financial service providers – to optimize working capital and lower financing costs (Caniato et al., 2016; Gelsomino et., 2016; Wuttke et al., 2013).

In this study, the supply chain angle is the one adopted. A significant stream of research has been addressing the many different aspects of SCF like the outcome and drivers of the implementation (Wang et al., 2020) the introduction and adoption decisions of different supply chain actors (de Goeij et al., 2021; Wuttke et al., 2019; Iocono et al., 2015; Wuttke et al., 2013) as well as the barriers and challenges (Kaur et al., 2022; Alora and Barua, 2019; More and Basu, 2013), requirements and antecedents (Zhao et al., 2022; Jia et al., 2020) of SCF adoption. Despite all the hype about digital supply chain finance services, real-life adoption still faces significant complications (Alora and Barua, 2019). To successfully adopt SCF, firms must first understand their cash flow needs and identify the appropriate SCF solution that fits their business model. They must also establish strong relationships with their suppliers and ensure that they have the necessary technology and infrastructure to support SCF transactions.

In order to understand the main factors and antecedents required to successfully adopt SCF, the current study aims to develop an assessment framework for SCF readiness. SCF is a technological innovation (Wuttke et al., 2019), as the integration of digital technologies in supply chain finance can lead to more efficient and effective financial processes (Caniato et al., 2016). For example, the use of blockchain technology in supply chain finance can ensure transparency and security in transactions, while AI can be used to analyze data and provide insights for decision-making. Thus, we build our framework on literature that explores the readiness of technologies adoption. Readiness is defined as the ability of the firm to provide the required infrastructures and resources in order to carry out its responsibilities to reach a specific value. Hence, it is necessary to understand the factors affecting successful SCF implementation to assess the actual readiness of the firms to adopt such technology. The assessment of readiness is considered to be an effective tool in the decision-making process (Peters and Waterman, 1982).

Moreover, readiness evaluation helps decision-makers to assess necessary changes required to adopt a new technology (Faraji and Khodizadeh, 2012). It helps organizations to evaluate their current state and identify any gaps or barriers that may hinder the successful adoption of the new technology or process. Readiness assessment is critical when it comes to the adoption of supply chain finance (SCF). SCF is a complex process that involves multiple parties, including suppliers, buyers, and financial institutions. It is important to evaluate the readiness of each party to ensure that they are equipped with the necessary knowledge, skills, and resources to effectively participate in the SCF process. Assessing the readiness of firms to adopt SCF can help identify any gaps in their current financial processes, as well as any cultural or organizational barriers that may exist. For example, a firm may lack the necessary technological infrastructure to support SCF initiatives, or it may have a culture that is resistant to change.

By identifying these factors, the firm can take steps to address them and improve their readiness for SCF adoption. Furthermore, assessing the readiness of firms to adopt SCF can help financial institutions to better understand the needs and capabilities of their clients. This can enable them to design and offer more effective SCF solutions that cater to the specific needs of each client. Hence, this study will follow a number of steps to develop an assessment framework for SCF readiness: (1) identify the main requirements and antecedence relevant to SCF adoption (2) determine the contribution weights of these factors to the overall readiness (3) develop an effective readiness improvement plan by prioritizing those factors with the most significance on the overall readiness (4) determine the performance of SMEs in Egypt with respect to the readiness factors categories (5) determining the rankings of potential SMEs by calculating the composite scores of the participants.

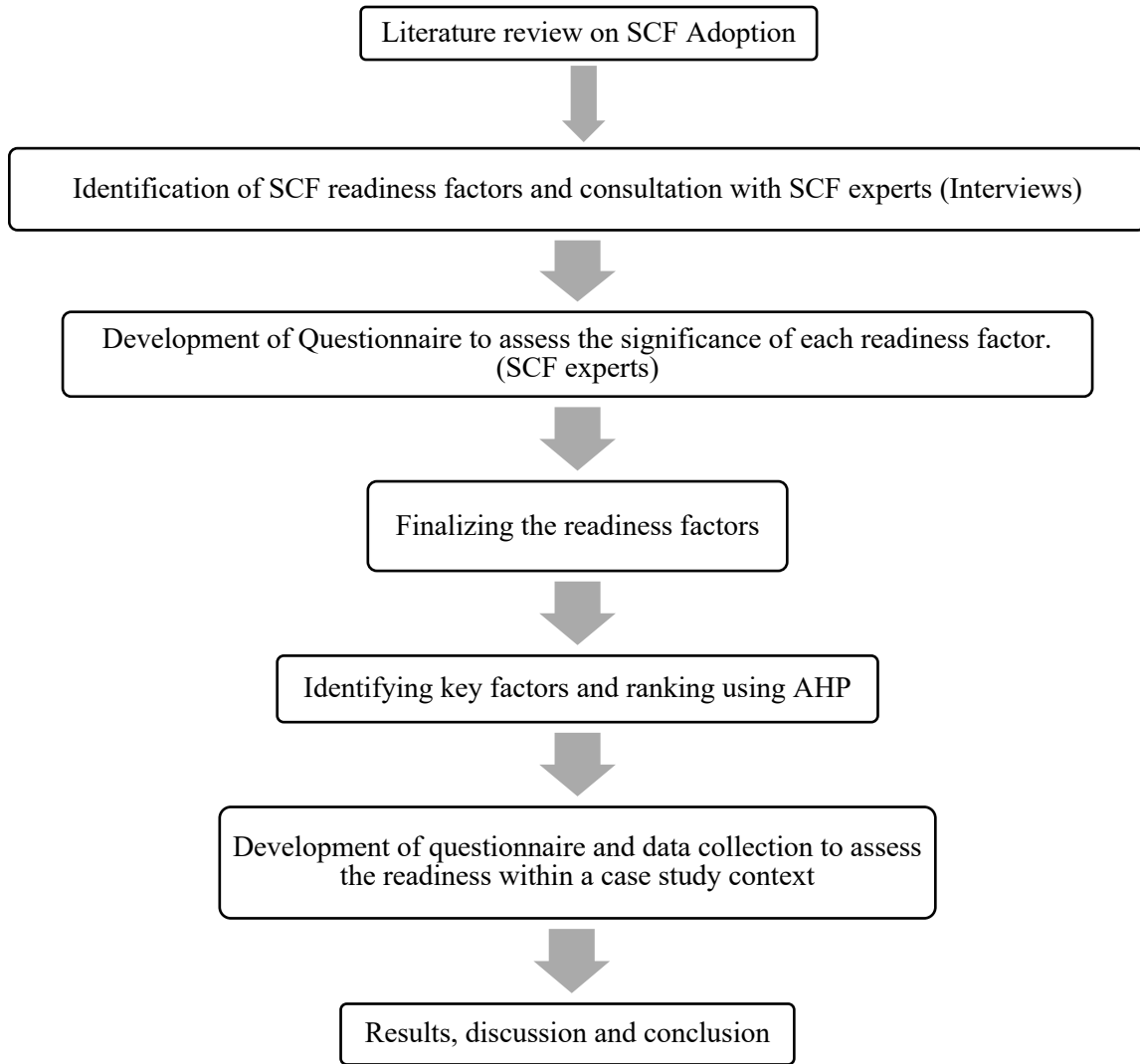


Figure1: Flow chart of the research

The following table (Table 1) underlines the main research questions and objectives of this study.

<b>Research Question</b>	<b>Objectives</b>
What are the key factors required for SCF readiness?	<ul style="list-style-type: none"> <li>- Provide a comprehensive literature review on factors affecting SCF adoption</li> <li>- Validate these factors based on experts' opinion.</li> <li>- Rank and categorize SCF readiness factors</li> </ul>
How is the SCF readiness measured and assessed?	<ul style="list-style-type: none"> <li>- Develop a generic framework for SCF readiness</li> <li>- Apply the generic framework on a case study for assessment</li> <li>- Construct an advisory package for SCF readiness based on the case study.</li> </ul>

Table 1: Research questions and objectives

## 2. Literature review

### 2.1 Supply Chain Finance

After the credit crisis of 2008, firms started to consider new solutions to overcome the lack of liquidity (Ivashina and Scharfstein, 2010). In response, financing institutions commenced to offer risk management services to mitigate liquidity risks and improve the efficiency of financial supply chains (Hofmann and Belin, 2011). SCF emerged to provide easier payments conditions, working capital, and risk mitigation for the focal firm (buyer), and better financing and shorter payment terms for the supplier (Wuttke et al., 2016). This is in addition to ameliorate the physical supply chain by improving the structure and discipline of the financial flow (Caniato et al., 2016)

SCF is not a recent concept, as the idea of SCF has been introduced to research in early 70s by Budin and Eapen (1970) and Haley and Higgins (1973) by studying the trade credit and inventory policy. Prior SCM literature has focused on discussing the goods and information flows in supply chain. Later, this focus started to include the financial aspect and from there the literature on SCF started to develop. This explains why the majority of the studies that mentioned SCF tend to focus only on the financial aspect (Yan et al., 2016; Raghavan and Mishra, 2011; Gupta and Dutta, 2011). Some researchers discussed the potential of SCF to minimize operational costs and generate profits for upstream and downstream players in the supply chain (e.g. Dye and Yang, 2015; Brick and Fung, 1984), enhance supply chain governance (Ma et al., 2020, Dekkers et al., 2020, More and Basu, 2013) and enhance firms' financial performance (c.f. Chakuu et al., 2019; Wetzell and Hofmann, 2019). The revolution in information technology has enabled SCF to optimize the flow of financial transactions (Zhang et al., 2019). Interestingly, recent adoption of SCF programs in various industries included the use of digital tools that foster a better communication between supply chain players (e.g. buyers, supplier, and banks), which expanded research areas in such a domain (Chakuu et al., 2019). For example, Du et al. (2020) studied the integration of blockchain technology to build new platforms for SCF. Song et al., 2021 studied the correlation between data analytics and e-procurement through digital platforms.

It is evident that digital based SCF programs provide real time information on the flow of goods and cash like availability, receipt of goods and payments, and decrease the human intervention that might cause latency, cost, and lack of trust (Chen and Wang 2020). Such automation can reduce these transactions to seconds instead of months, which can radically enhance supply chain networks (Handfield, Jeong and Choi, 2019). Collaboration is also one of the key benefits associated with digital SCF solutions, as it fosters communication frequency (Wuttke et al., 2013) and information sharing among supply chain partners (Gelsomino et al., 2016), and thus improved financial performance of all network partners (de Goeij et al 2021; Nguema et al 2020).

### 2.2 SCF Adoption

Before getting into details about the applicability of SCF adoption, SCF players should be identified. They can be segmented into three different parties: focal firm (buyer), supplier, and financial service provider (Hofmann and Belin, 2011). Hofmann and Belin (2011) suggested that SCF should have a focal firm that works as the primary driver of SCF. This focal firm is normally the buyer, who should be the center of process and lead the whole supply chain. The supplier supplies the buyer with goods or services. And finally, the service provider is the one who bears risks and earn profits in return by offering loans to the supplier or the buyer. The service provider is the financial institution who plays a fundamental role in injecting liquidity and managing the

whole SCF process; they are known to be the risk takers. This explains why credit risk management is critical for financing institutions to mitigate the risk of debt associated with the failure of any borrower to settle a loan. Therefore, collaterals are essential to reduce the risk bore by service providers. Different sorts of collaterals are generally employed in practice, e.g. purchase orders/invoices in pre-shipment finance instruments, inventories in in-transit instruments, and shipping documents in post-shipment instruments (Zhao and Huchzermeier, 2018). Here, the service provider is the one who decide the value of these collaterals. The revolution in IT and telecommunication technology has enabled SCF to optimize the flow of financial transactions (Zhang et al., 2019). The adoption of SCF program entails using digital tools that foster a better communication between supply chain players (e.g., buyers, supplier, and banks) (Chakuu et al., 2019). In this sense many researchers integrated new platforms to enhance the applicability of SCF. Du et al (2020) used the blockchain technology to build a new platform for SCF.

A blockchain technologies provides real time information on the flow of goods and cash like availability, receipt of goods and payments and decreases the human intervention that might cause latency, cost and lack of trust. Such automation can reduce these transactions to seconds instead of months. The digital-based systems have the potential to radically enhance the supply chain networks. Many digital applications work on managing supply chain finance capabilities. Complex supply chains are more vulnerable for incoherency between flows of product, information and finances. These flows are directed to different channels and mediators. Products might move to 3PL firms; information travels through the cloud and finances through multiple banks and other parties. The banks handle the financial flow integration throughout the supply chain. The role of banks become more critical specially for the global supply chains as they facilitate payments to suppliers and service providers in foreign countries, so a buying firm does not have to deal with local regulations of their suppliers overseas (Rogers et al., 2020).

In this case, the bank takes the responsibility of the audits, approvals, and payments of freight-related expenses by employing an automotive system to handle the whole supply chain process. This automated process is fully applied online starting from the pre-payment audits, review and negotiation with shippers, expense allocation, to the payment which also takes place in cyberspace. All these transactions do not necessarily involve the physical movement of goods. This means that an Egyptian supplier can deliver a shipment to an American subsidiary plant in Egypt, and the transaction could entirely take place in a computer in Dubai's office. Therefore, the SCF services play indispensable role for major multinational corporations. SCF helps firms to enhance payment times, improve liquidity performance in supply networks, and cut costs with smart payments. Without SCF, once the buyer places an order, the supplier starts to fund the cost of obtaining the necessary material to produce the product ordered until the buyer gets his order and fulfill the payment, which may take longer than the time agreed upon as the majority of buyers are extending their payables cycles. This cost of capital expense is waved to the suppliers in the lower tier and so on, with each sub-supplier bearing the cost for several weeks or months. When a bulk of working capital is trapped in supply chains, including inventory, payables, and receivables, unlocking this working capital has to be the main goal of supply managers. So, the financial institution provides a digital-based financing system by optimizing this working capital and increase cash by substituting the traditional manual funding mechanism in supply networks (Rogers et al., 2020)

### 2.3 Readiness

Previous SCF adoption studies often focus on the implementation phase of the adoption process (de Goeij et al., 2021; Wuttke et al., 2019; Iocono et al., 2015; Wuttke et al., 2013) yet there is a dearth of research concerning the preadoption phase of SCF (Alora and Barua, 2019). SCF adoption entails significant organizational changes in the existing supply chain process (Kaur et al., 2022). Therefore, readiness evaluation is essential before adopting any new technology like SCF, in order to achieve the main intended value following the implementation (Richey et al., 2007). Prior literature has studied several factors affecting supply chain readiness, such as technological (Kosmol et al., 2019; Li et al., 2017), organizational (Kalantari and Khoshalhan, 2018; Bakker et al., 2008) financial resources as an organization factor (Sharma and Citurs, 2005), and infrastructural (Ramezani-Rad, 2014). Supply chain readiness addresses the main capabilities required to induce changes in the operations process (Kalantari and Khoshalhan, 2018) or adopt a new technology (Kosmol et al., 2019).

Thus, it is essential to study the different angles of SC readiness to undergo a successful adoption process of SCF. Previous research on readiness in the field of supply chain management has conceptualized two main syntheses in regard to the different readiness constructs, which are the structural view and the psychological view (Shahrasbi and Paré, 2014). Under the structural view, readiness is defined as the firm's access to the main capabilities required for technology adoption (Collins et al. 2007; Devereaux et al. 2006; Simon 1996). Structural readiness assesses factors affecting readiness like human resources (Eby et al. 2000), knowledge and skills (Venkatesh and Bala, 2012) technological infrastructure (Zhu et al., 2006) financial resources (Lai et al., 2017), inter and intra-organizational collaboration (Kosmol et al., 2019). On the other hand, the psychological view mainly focuses on the organizational members' perspectives, attitudes and intentions (Eby et al. 2000; Holt et al. 2010; Rafferty et al. 2013; Weiner 2009).

Armenakis et al. (1993) has defined readiness as the main antecedent to the organizational members' resistance or support for change efforts. Therefore, the psychological readiness is practically significant in a context where firms' members already have knowledge on the technology under study. Thus, in this research, we will focus on the structural readiness. As priorly discussed, SCF definitions extend beyond pure financial transactions, to the aspects of automation, digitalization and technology. Supply chain automation, from e-procurement to e-invoices, together with data-driven decision-making, improves efficiency and offers financing facilities for global and local supply chains (Vujačić and Miljković, 2019). Therefore, literature stream on digital technologies adoption in supply chain informs our research. Previous literature on SCF (i.e., SCF) has begun to explore antecedents to SCF adoption at the financial level (e.g., Jia et al, 2020), at the organizational level (e.g., management support, intra and inter-organization) (e.g., Caniato et al., 2016), and at the technological level (e.g. More and Basu, 2013). At the organizational level, extent literature in purchasing and supply management highlighted organizational readiness as a key aspect for a firm to fulfill the required antecedents to adopt a new technology (Kosmol et al., 2019; Kros et al., 2011; Ray et al., 2005; Richey et al., 2007).

At the technological level, readiness has been identified as the firm's technological attributes that could link the adoption of technology to the potential gains that may be realized after the implementation (Cox, 2015). In order to select the most influential factors that affect the adoption of SCF, factors affecting SC readiness are examined to determine their relevance with SCF antecedents and requirements previously studied in literature. Appendix 1 summarizes the

readiness constructs and sub-constructs that have been tackled in SCF literature. To conceptualize the different factors of SCF readiness, we synthesize the factors studied in prior research on technologies adoption in SC (see Table 2).

<b>Technology</b>	<b>Readiness factors</b>	<b>Theories</b>	<b>Sources</b>
EDI adoption	Technological readiness, organizational readiness and environmental readiness	TOE	Kuan and Chau (2001)
e-business adoption	Technological context, organizational context and environmental context	TOE	Zhu et al. (2003)
Digital procurement adoption	Organizational readiness and technological readiness	The supply chain practice view (SCPV)	Kosmol et al. (2019)
e-commerce adoption	IT characteristics, organizational characteristics and buying need characteristics	NA	Bakker et al. (2008)
e-commerce adoption	Technological context, organizational context and environmental context	TOE	Ghobakhloo et al. (2011)
e-commerce adoption	Innovation technology characteristics, Organizational characteristics, environmental characteristics and characteristics of managers	TOE	Van Huy et al. (2012)
Digital supply chain adoption	Strategy, employees, business initiation and supply chain readiness	NA	Lassnig et al. (2022)
Digital supply chain adoption	Information and communication technology (ICT) policies, Worker IT skills, Supplier–buyer relationship, Relationship with customer, Use of smart technologies, IT network infrastructure and Training	Knowledge-based system	Khan et al. (2019)
ERP implementation	Organizational preparedness, perceived benefits and costs and external influences	Knowledge-sharing process	Li et al. (2017)

Table 2: Dimensions of readiness constructs

The Technology Acceptance Model and Institutional Theory, are two widely used theories in studies of technology adoption, primarily concentrate on the reasons why an organization chooses to adopt a technology; however, these theories do not explain the firms' readiness to adopt this new technology, which ultimately determines the success of implementation (Cox, 2015). As shown in table 2 technology-organization-environment framework (TOE) is one of the most common theories used in this area. This theory divides factors affecting technology adoption into three main categories: Organizational, Technological and environmental. The current study will not consider the environmental construct assuming that this factor is common for all participants of the targeted sample.



Thus, we will draw on the TOE model in order to structure the main organizational and technological factors that affect the readiness of SCF adoption. The financial readiness factors will be derived from in-depth interviews with a number of SCF experts and triangulated with both scientific and practitioner literature. According to TOE, organizational readiness has been identified as an important antecedent to successful technology adoption (Kosmol et al., 2019; Sternberg and Norrman, 2017; Chen et al., 2016). Organizational readiness measures the availability of organizational resources required for adoption (Iacovou et al., 1995). It concentrates on the managerial antecedents that help the organization to adopt new technologies (Li et al., 2017). The current study will include top management support, inter-organizational collaboration, intra-organizational collaboration, risk management and change management as the main indicators of organizational readiness. Top management support reflects the efforts exerted by top managers to encourage the adoption of a new technology as well as their understanding of the potential value of this adoption (Chen et al., 2016). Inter-organizational collaboration is measured by the degree of collaboration between SC members (Caniato et al., 2016). Intra-organizational collaboration is the level of collaboration among the firms' internal departments (Caniato et al., 2016).

Uncertainty is an important factor affecting readiness as it reflects the level of risk and complexity of transactions, thus risk management is necessary to control uncertainty (Pellegrino et al. 2019). Another significant factor is change management as the introduction of SCF is associated with changes in the current SC process and structure. Therefore, it is necessary to alter SC processes to incorporate the different characteristics of the SCF program (Kaur et al., 2022). Another critical potential variable in successful technology adoption is the technological readiness. This construct may hold a key to a successful technology adoption as it connects technological adoption to the possible gains that may result from successful implementation.

In this study, we will include the information technology (IT) infrastructure, the employees' readiness, and the automation of invoices as the main factors affecting technological readiness of the firm. IT infrastructure is the information technologies that the organization has to support digital initiatives in SC (Zhu et al., 2006). Employees readiness is measured by the level of technological knowledge and skills to successfully implement a new technology (Chen et al., 2016; Turkulainen and Swink, 2017). Finally, Automation of invoices is an important prerequisite to implement a digital-based SCF platform (Silvestor and Lustrato, 2014; More and Basu, 2013; Wuttke et al., 2013).

### 3. Methodology

The first objective of the current research is to identify the readiness factors. The readiness factors will be identified by a literature review. Since there are no previous studies conducted in SCF literature measure the readiness of SCF adoption, we used other terminologies like "prerequisites" "antecedents" "requirements" "barriers" and "enablers" to identify the factors that are most relevant to our objective. In order to validate the identified variables, we developed a questionnaire to be filled by SCF experts (Appendix 2). In order to develop a hierarchical model for SCF readiness, the analytical hierarchical process (AHP) will be adopted followed by a case study to assess the applicability of the hierarchical model. The AHP is a multi-criteria decision-making method that is frequently employed in different business sectors (Ordoobadi, 2010). This

method follows a structured mathematical framework with reliable matrices that include the right eigenvector's capability to generate the variables' weights (Saaty, 1980). AHP depends on experts' opinions to rank and prioritize the factors under study (Khan et al., 2021). The AHP is implemented through four main steps: (1) rating factors using questionnaire answered by experts from industry and/or academia (2) developing the hierarchical model (3) synthesizing priorities (4) measuring consistency (Khan et al., 2021). After developing the hierarchical model, purchasing managers in SMEs operating in Egypt will be contacted to conduct a survey. The survey method will be useful to assess the actual readiness of SMEs in terms of the factors determined by literature and expert opinions and ranked by AHP.

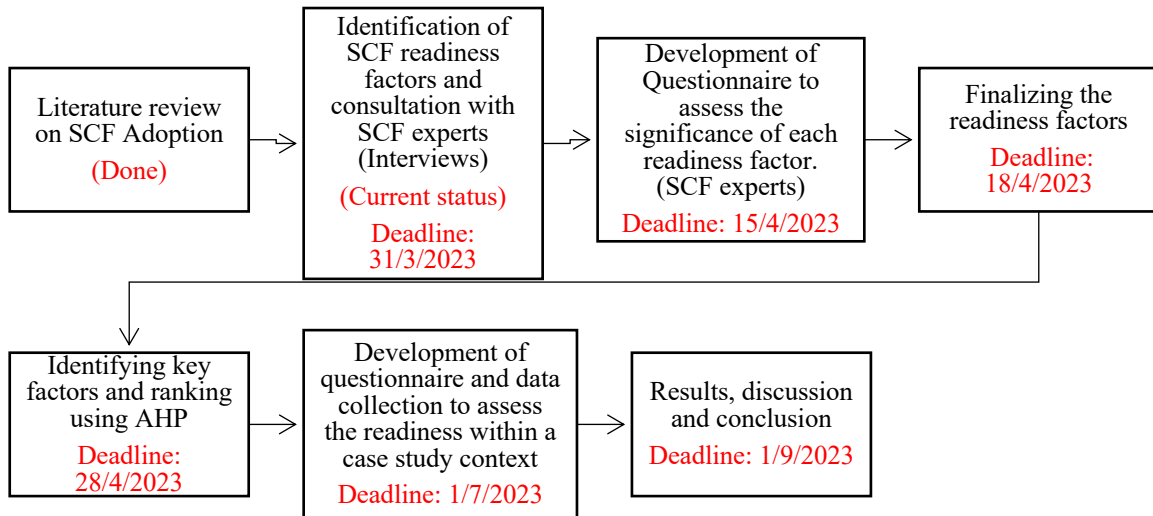


Fig3: Current Status and timeline

### Curriculum vitae

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Publications and articles submitted:

- Yasmine El-Henawy and Raghda El-Ebrashy, Improving Supply Chain Governance through Digital Supply Chain Finance Solutions: A Bibliometric Analysis [Annual conference of the European Academy of Management (Euram) - June, 2022]
- Yasmine El-Henawy, Raghda El-Ebrashy and Shewat Ibrahim, Supply Chain Finance Benefits on Sustainability Performance: A Bibliometric Analysis [31st annual conference of the International Purchasing and Supply Education and Research Association (IPSERA) annual conference - Mar, 2022] [https://www.dropbox.com/scl/fo/2rdbi51why8m43nqcu5mx/h/Working%20%26%20Practitioner%20Papers/IPSERA\\_2022\\_working\\_118.pdf?dl=0&rlkey=h4cczs5bevss9541shg6fbr](https://www.dropbox.com/scl/fo/2rdbi51why8m43nqcu5mx/h/Working%20%26%20Practitioner%20Papers/IPSERA_2022_working_118.pdf?dl=0&rlkey=h4cczs5bevss9541shg6fbr)
- Yasmine El-Henawy, Governance Mechanisms Used by MNCs for Egypt's Suppliers' Sustainability [Springer Nature Switzerland AG 2022 R. Frei et al. (eds.), Africa and Sustainable Global Value Chains, Greening of Industry Networks Studies 9] [https://link.springer.com/chapter/10.1007/978-3-030-78791-2\\_13](https://link.springer.com/chapter/10.1007/978-3-030-78791-2_13)

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Readiness constructs		Organizational readiness										Technological readiness											
		Risk management	Market response capability	Innovation capability	Top management support	Information sharing	Inter-organizational collaboration	Intra-organizational collaboration	Change management	Automation of invoices and business process	Employees readiness	Digital procurement infrastructure											
Financial readiness	Liquidity																						
	Credit risk management	✓																					✓
				✓	✓	✓	✓	✓	✓	✓	✓			✓									✓
		✓		✓		✓		✓	✓	✓	✓			✓									✓
		✓		✓		✓		✓	✓	✓	✓			✓									✓
		✓		✓		✓		✓	✓	✓	✓			✓									✓
		✓		✓		✓		✓	✓	✓	✓			✓									✓
		✓		✓		✓		✓	✓	✓	✓			✓									✓
		✓		✓		✓		✓	✓	✓	✓			✓									✓
		✓		✓		✓		✓	✓	✓	✓			✓									✓



Readiness constructs														
Financial readiness		Organizational readiness								Technological readiness			Paper	Financial resources
Credit risk management	Liquidity	Risk management	Market response capability	Innovation capability	Top management support	Information sharing	Inter-organizational collaboration	Intra-organizational collaboration	Change management	Automation of invoices and business process	Employees readiness	Digital procurement infrastructure		
						✓	✓	✓					(Wuttke et al., 2013a)	
✓		✓		✓	✓	✓	✓		✓	✓		✓	(Wuttke et al., 2013b)	
✓		✓		✓		✓	✓	✓		✓		✓	Caniato et al., 2016	
	✓	✓			✓	✓	✓	✓	✓		✓	✓	(Dekkers et al., 2020)	
✓	✓				✓	✓	✓	✓		✓	✓	✓	(de Goeij et al., 2021)	
✓	✓	✓		✓			✓					✓	(Moretto et al., 2019)	
	✓	✓				✓			✓				(Iacono et al. 2015)	
✓		✓				✓	✓		✓	✓	✓	✓	(Silvestroand Lustrato, 2014)	
✓	✓					✓	✓			✓	✓	✓	(Hofmann and Zumsteg, 2015)	✓
✓	✓	✓			✓	✓	✓	✓		✓	✓	✓	(More and Basu, 2013)	✓
✓		✓				✓				✓	✓	✓	(Ali et al., 2018) <b>B</b>	
✓						✓	✓					✓	(Chen et al., 2018)	
✓	✓	✓				✓						✓	(Song et al., 2018)	

		Financial resources
Paper		
(Wuttke et al., 2013a)		
(Wuttke et al., 2013b)		
Caniato et al., 2016		
(Dekkers et al., 2020)		
(de Goeij et al., 2021)		
(Moretto et al., 2019)		
(Iacono et al., 2015)		
(Silvestro and Lustrato, 2014)		
(Hofmann and Zumsteg, 2015)		✓
(More and Basu, 2013)		✓
(Ali et al., 2018)	B	
(Chen et al., 2018)		
(Song et al., 2018)		