# Impact risk management in impact investing: How impact investing organizations adopt control mechanisms to manage their impact risk

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## ABSTRACT

In impact investing, impact risk encompasses the probability that investment projects may fail to achieve the expected positive impact (i.e., positive impact risk) and/or may have a negative impact (i.e., negative impact risk). Using an inductive research approach, this study examines how impact investing organizations adopt control mechanisms to manage impact risk. It finds that impact investors adopt a wide range of input, behavior, and output control mechanisms to manage impact risk that may arise from investee-level, investor-level, and system-level operations. Also, to manage impact risk, investors establish control mechanisms to influence relevant actors not only within a firm's boundary but also outside its boundary. Given the inherent complexity and ambiguity in managing impact risk in impact investing, control mechanisms appear to rely heavily on judgment and experience and adhere more to the "satisficing" principle. Furthermore, investors tend to focus more on managing positive impact risk than negative impact risk.



**Keywords:** Impact risk management; Impact investing; Impact investor; Positive impact risk; Negative impact risk; Risk control mechanism; Investment project; Nonfinancial risk; Management control system.

## I. INTRODUCTION

> Like any other decisions, impact investments may have unintended negative consequences. For all the social good they intend to bring about, impact investors should "first do no harm." (International Finance Corporation 2019, 5).

This study examines impact risk management in impact investing. It addresses the following research question: How do impact investing organizations adopt control mechanisms to manage impact risk? This study is positioned as an interdisciplinary study researching impact risk management practices in impact investing. It draws on archival data from 91 impact investing organizations.

Generally, impact investing refers to investments made into companies, funds, and/or projects with the intention to generate measurable positive social/environmental impact alongside financial returns (Höchstädter and Scheck 2015; Islam 2022a). The impact investing market is estimated to be USD 715 billion (Hand, Dithrich, Sunderji, and Nova 2020). Because of its primary focus on proactively tackling major global problems (e.g., extreme poverty, inequalities), impact investing is considered a promising investment vehicle to effectively address the $2.5 trillion annual investment gap in United Nations Sustainable Development Goals (Pineiro, Dithrich, and Dhar 2018; United Nations 2020).

As already noted, a major element in impact investing is to create a positive impact. However, there is a risk that investment projects may fail to create the desired positive impact (Mollinger-Sahba, Flatau, Schepis, and Purchase 2021; Ormiston, Charlton, Donald, and Seymour 2015), which we call *positive impact risk*. In the worst case, the risk is that investment projects may create a negative impact (International Finance Corporation [IFC] 2019; Wåhlin 2018), which we call *negative impact risk*. Given that managing impact risk is an inherent feature of impact investing, it is surprising to note that very little research exists in this area. Only a few studies provide some discussion on risk issues in impact investing (e.g., Apostolakis, van Dijk, Blomme, Kraanen, and Papadopoulos 2018; Barber, Morse, and Yasuda 2021; Block,

Hirschmann, and Fisch 2021). However, these studies' discussion mainly focuses on financial risk issues (e.g., impact investors' appetite towards financial risk), with little focus on impact risk. This represents a major shortcoming, constraining our understanding of issues around impact risk in impact investing. There have been calls to advance our understanding of impact risk in impact investing (IFC 2019; Islam 2022a). The current study responds to these calls.

This paper also speaks to the accounting literature on risk management that examines risk management practices in different settings (e.g., Hall, Mikes, and Millo 2015; Ittner and Oyon 2020; Mikes 2009, 2011). Prior literature provides important insights into, for example, how different organizational actors perceive the same risk in different ways and how they reconcile such differences (Mikes 2009) and how risk experts become influential through developing and deploying various risk tools (Hall et al. 2015). However, much less scholarly attention has been paid to "control mechanisms" that organizations adopt to manage nonfinancial risk (Soderstrom 2019, 889; see also Mikes 2009). Hence, scholars call for investigating issues around managing nonfinancial risk (Mikes 2009, 2011; Soderstrom 2019). The current study responds to their calls by examining control mechanisms that impact investing organizations adopt to manage impact risk.

Given limited theory and evidence for managing impact risk in impact investing, this study adopts an inductive research approach (e.g., Strauss and Corbin 1997; see also Cardinal, Sitkin, and Long 2004; Martin and Eisenhardt 2010). Drawing on archival data from 91 impact investing organizations, we examine the control mechanisms they adopt to manage their impact risk. It should be noted that the studied impact investing organizations mainly invest in the projects of investee companies (rather than real assets). Also, the current study focuses on impact risk management from an investor's perspective (rather than an investee's perspective).[1]

[1] That is, we study what impact investor organizations (rather than investee companies) do to manage impact risk.

This study makes three major contributions to the literature. First, it contributes to the literature by being the first to systematically examine impact risk management in impact investing. In particular, this study provides several important insights into how impact investing organizations manage their impact risk through adopting various control mechanisms, thus facilitating a greater understanding of impact risk management issues in the impact investment market.

Second, existing literature mainly assumes that impact risk of an investment project arises from investee companies' operations (see Moore, Westley, and Brodhead 2012; Ormiston et al. 2015). The current study shows that impact risk of an investment project can arise from not only investee-level operations, but also investor-level and system-level operations. Hence, the phenomenon of impact risk in impact investing needs to be understood and examined at all three operational levels. By providing a more complete picture of impact risk in impact investing, the current study brings construct clarity (Islam 2020a; Suddaby 2010) to this important topic, thus providing a platform for effective theorization of issues surrounding it.

Third, the current study contributes to the literature on risk management practices (e.g., Hall et al. 2015; Ittner and Oyon 2020; Jordan, Jørgensen, and Mitterhofer 2013; Mikes 2009, 2011) by introducing impact risk as a novel, nonfinancial risk, and by providing insights into adopting control mechanisms to manage impact risk in impact investing. We find that investors adopt a wide range of input, behavior, and output control mechanisms to manage their impact risk. Given the inherent complexity of managing impact risk in impact investing, control mechanisms tend to rely heavily on judgment and experience instead of sophisticated analytical techniques and adhere more to the "satisficing" principle than the "optimal" principle (see Simon 1955, 1979). While these control mechanisms are not fully complete and perfect in a strict sense, they seem to be good enough to provide reasonable guidance to impact investors to navigate the inherently ambiguous landscape of impact risk management. Furthermore,

while most risk management literature discusses risk control mechanisms with regard to influencing relevant actors within a firm's boundary, we show that, to manage their impact risk, impact investors establish various control mechanisms to influence actors not only within a firm's boundary but also outside its boundary. This resonates with prior work (e.g., Fligstein 1990; Pfeffer and Salancik 1978) that underscores the importance of using control mechanisms to influence external actors to better achieve organizational goals. This study also finds that impact investors tend to focus more on managing positive impact risk than negative impact risk. We explain the potential reasons for this observation.

The remainder of the paper is organized as follows. The next section provides this study's theoretical background, followed by outlining the research approach in Section III. Section IV presents the findings of this study. Section V discusses these findings. The final section concludes the paper and outlines future research directions.

## II. THEORETICAL BACKGROUND

This section positions the research question first within the impact investing literature and then within the risk management literature. It then discusses the sources of impact risk and the control environment underlying impact risk management in impact investing. Finally, we discuss the input, behavior, and output controls framework, which we employ as an analytical framework for this study.

### Literature on Impact Investing

The growing literature on impact investing addresses several issues such as individual- and organizational-level criteria used by investors to select impact investment projects, impact evaluation approaches and challenges, demand and supply of impact investments, and behavioral issues in impact investing (e.g., Achleitner, Lutz, Mayer, and Spiess-Knafl 2013; Block et al. 2021; Glänzel and Scheuerle 2016; Islam and Scott 2021; Lee, Adbi, and Singh

2020; see Islam 2022a for a review). In comparison to other issues in impact investing, risk issues receive much less scholarly attention. Only a few studies provide some discussion around risk issues in impact investing. However, these studies mainly address financial risk issues, such as factors contributing to generating higher or lower financial returns, impact investors' appetite towards financial risk, measuring financial risk in impact investing, approaches to reduce financial risk in impact investing, and the trade-off between financial risk and return in impact investing (e.g., Apostolakis et al. 2018; Barber et al. 2021; Block et al. 2021; Gregory 2016; Gruyter, Petrie, Black, and Gharghori 2020).

While it is important to understand financial risk issues in impact investing, it is equally (if not more) important to examine impact risk issues in impact investing. Unlike traditional investing, impact investing focuses on both financial impact and social impact (Höchstädter and Scheck 2015). Hence, attaining desired social impact is a fundamental consideration in impact investing. However, there is a risk that impact investment projects may fail to attain the expected positive impact (e.g., projects failing to achieve the desired reduction in homelessness) (Mollinger-Sahba et al. 2021; Ormiston et al. 2015). Furthermore, while impact investment projects aim to create a positive imapct, there is a risk that they may inadvertently create a negative impact (IFC 2019; Islam 2020b). For example, a seemingly clean energy investment of more than $200 million by the U.S. Overseas Private Investment Corporation (OPIC) in Buchanan Renewables – a firm that aimed to create biomass fuel from rubber trees in Liberia – harmed the local communities when i) the project destroyed the only income source of many small family farmers through cutting down their rubber trees, and ii) the project contaminated local water supplies through unplanned operations (Wåhlin 2018). Overall, in impact investing, impact risk encompasses positive impact risk (i.e., the probability of failing to attain the desired positive impact) and/or negative impact risk (i.e., the probability of creating

a negative impact). The current study examines impact risk management practices in impact investing through a management control system lens.

**Literature on Risk Management Practices**

The practice of risk management in different organizational settings has received increased scholarly attention (Ittner and Oyon 2020; Power 2016). For example, drawing on the risk practices in two banks, Mikes (2009) shows how different groups of actors (e.g., risk officers, risk controllers) perceive the same risk differently and how they reconcile their differences. In a follow-up study, Mikes (2011) shows the dynamics through which different risk management styles are enacted in organizational lives. Here, Mikes (2011) emphasizes how risk experts engage in various kinds of boundary work (e.g., creating a distinct expert group) to expand and/or limit their legitimacy, authority, and responsibility, and how their boundary work is contingent on different calculative cultures. In another study, Hall et al. (2015) provide a detailed account of how risk managers use their expertise and communicate it to other managers by developing and deploying different risk tools to become influential. Hall et al. (2015) also highlight how the toolmaking practices of risk experts might vary in different organizational settings, and how different factors (e.g., organizational processes) might contribute therein. It should be noted that the above studies focus on understanding risk management practices in general, without having a primary focus on either financial or nonfinancial risk management. However, as the studied organizations are mainly financial institutions, most discussions in the above studies center around managing financial risk issues (e.g., credit risk, liquidity risk, capital adequacy risk).

Prior studies on risk management practices also address other issues, such as how risk maps act as a platform for mediating concerns between different groups in an inter-organizational setting (Jordan et al. 2013), how different contingent variables (e.g., central government policy) impact on an organization's risk management system (Woods 2009), how holistic risk

management practices interact with other organizational elements as they are implemented in different organizational settings (Arena, Arnaboldi, and Azzone 2010), and how and why risk talk may (not) engender the intended reflexivity in an organization (Tekathen and Dechow 2020).

However, one area that has received much less scholarly attention is managing nonfinancial risk, especially the adoption of "control mechanisms" to manage nonfinancial risk (Soderstrom 2019, 889; see also Mikes 2009). Unlike financial risk (e.g., credit risk), nonfinancial risk (e.g., operational risk) is relatively difficult to measure and aggregate (Mikes 2009). The current study addresses the research gap in nonfinancial risk management by examining how impact investors adopt various control mechanisms to manage their impact risk.

**Sources of Impact Risk in Impact Investing**

Impact risk in impact investing can arise from three major sources. The first one is investee companies' operations. Investment projects may fail to achieve the expected positive impact and/or may create a negative impact due to the substandard operations and/or irresponsible actions of investee companies. Investee companies' operations can give rise to investors' impact risk in several ways. For example, an investee company working to address extreme poverty in a marginalized community may lack appropriate systems and skilled employees to execute and monitor the action plans in the desired way (Lall 2019), thus could fail to achieve the expected reduction in poverty (i.e., positive impact risk). As another example, the corrupted top management team of an investee company that offers micro-credit services to poor women may knowingly engage in malpractices that could lead to borrower over-indebtedness (Islam 2020b), thus harming vulnerable beneficiaries (i.e., negative impact risk).

Second, investors' own operations constitute another major source of impact risk. Investment projects may fail to achieve the expected positive impact and/or may create a negative impact

due to investor companies' substandard operations and/or irresponsible actions. For example, an investor company may lack a systematic impact measurement system, which could fail them to effectively evaluate and manage the investment project's positive impact (Ebrahim and Rangan 2014), thus giving rise to positive impact risk. As another example, an investor company may not have effective systems and skilled employees to appropriately conduct negative impact due diligence of a potential investment project (Ormiston et al. 2015). As a result, it could invest in a risky investment project without due consideration of its potential negative consequences on local community members and the environment, thus giving rise to negative impact risk.

Third, the operations of the broader investment ecosystem are an important source of impact risk. Investment projects may fail to attain the expected positive impact and/or create negative impact due to the substandard operations of the broader investment ecosystem and/or irresponsible actions of system actors (e.g., peer investors, intermediaries, and local and national governments). For example, a country's policymakers may introduce politically-motivated new rules and regulations in the social enterprise sector (Bhatt, Qureshi, and Riaz 2019). As a result, investee social enterprises may need to divert precious resources away from serving beneficiaries, such as unemployed youth, to better comply with newly introduced rules and regulations, thus failing to achieve the expected decrease in youth unemployment (i.e., positive impact risk). As another example, the microfinance sector in a country may lack effective regulations to contain the rise of harmful and unregulated financial products (Mader 2013). As a result, predatory investors could lure an impact investor's vulnerable investees and/or beneficiaries into "debt traps", thus giving rise to negative impact risk.

**Control Environment Underlying Impact Risk Management in Impact Investing**

In the impact investing context, a high degree of uncertainty and ambiguity exists in measuring impact risk. The phenomenon of social impact generally refers to positive changes in society,

which would mean different things in the context of different social/environmental problems (e.g., youth unemployment, climate change, extreme poverty, etc.) (Islam 2020a; Ormiston 2019). Even in the context of the same social problem, different investors may interpret/define social impact differently (Ebrahim and Rangan 2014). For example, social impact concerning the youth unemployment problem can be interpreted in several ways, such as increasing the number of unemployed young people served, decreasing the percentage of the youth unemployment rate, or improving the quality of life of unemployed youth. Furthermore, social issues are inherently fluid and difficult to unpack. As a result, measuring social impact concerning a specific social issue is inherently complex (Addy, Chorengel, Collins, and Etzel 2019; Brest and Born 2013). This issue is further exacerbated due to the unavailability of pre-intervention data and difficulties in identifying and applying valid methods and instruments to quantify social impact (Emerson 2003; Islam 2022a). All these factors induce a higher degree of uncertainty and ambiguity in measuring an investment's social impact and impact risk. When a higher degree of uncertainty and ambiguity exists in defining and measuring outcomes, management control literature refers to this issue as "low degree of output measurability" (Cardinal, Kreutzer, and Miller 2017; Ouchi 1979; Snell and Youndt 1995). In line with this, we can consider that the phenomenon of impact risk in impact investing is associated with a low degree of output measurability.

Also, because of the existence of a higher degree of uncertainty and ambiguity in measuring an investment's social impact, it is almost impossible to establish a sound cause-and-effect relation between the adoption/implementation of various investment-related activities and the achievement of desired impact goals (Ebrahim and Rangan 2014; Emerson 2003; Islam 2022b). As a result, investors will have incomplete knowledge about what rules, procedures, routines, and activities would lead to the achievement of expected positive impact and the avoidance of negative impact in a specific investment context. When managers do not have a reasonably

complete understanding of how inputs transform into outputs, management control literature refers to this phenomenon as "incomplete knowledge of cause-and-effect relations" (Cardinal et al. 2017; Ouchi 1979; Snell and Youndt 1995). In line with this, we can consider that impact risk in impact investing is associated with incomplete knowledge of cause-and-effect relations.

**Input, Behavior, and Output Controls Framework**

The current study draws on the input, behavior, and output controls framework, which has also been used in several prior studies (e.g., Cardinal 2001; Cardinal et al. 2004; Guo, Paraskevopoulou, and Santamaria Sanchez 2019; Rockness and Shields 1984; Snell 1992). In an organizational context, input controls refer to the use of control mechanisms to manage organizational resources (Cardinal 2001). They deal with human, financial, and material resources that flow into the organizations (Cardinal et al. 2004). Examples of input control mechanisms include employee selection, training, and development activities (Cardinal et al. 2004; Snell and Youndt 1995).

Behavior controls consist of directing and monitoring ongoing employee activities and behavior (Snell 1992). They regulate how work gets done (Cardinal et al. 2004). Behavior control mechanisms are applied during work execution and provide employees direction and guidance about managing activities that transform inputs into outputs (Cardinal et al. 2017). Examples of behavior control mechanisms include establishing operational rules, procedures and routines, supervision and monitoring, and action accountability (Snell 1992).

Output controls deal with the evaluation of outcomes/results at the end of a milestone period (Cardinal et al. 2017). Examples of output control mechanisms include establishing performance metrics and targets, evaluating actual performance against pre-established targets, and linking reward/punishment to the attainment/nonattainment of targets (Cardinal et al. 2004).

The current study aims to understand how impact investors adopt various control mechanisms to manage their impact risk. Managing impact risk would broadly involve controlling financial, human, and material resources flowing into organizations (i.e., input controls), introducing rules and regulations to direct and monitor relevant actors (i.e., behavior controls), and evaluating final outcomes associated with the delivery of positive impact and avoidance of negative impact (i.e., output controls). Hence, we believe that the input, behavior, and output controls framework is a suitable analytical framework for this study.

## III. RESEARCH APPROACH

### Data Collection

This study uses archival data collected from the Operating Principles for Impact Management (OPIM) Signatory Platform[2]. This platform was created by IFC along with several impact investors, intermediaries, and relevant industry networks in 2019 (IFC 2019). This initiative developed several operating principles to bring transparency and discipline to impact management in the global impact investing industry (IFC 2019).

Impact investing organizations that become signatories to the OPIM platform need to publicly demonstrate how they manage their investments' impact by publishing an annual Disclosure Statement. These Disclosure Statements are published via the OPIM Signatory Platform. We identified and downloaded 91 Disclosure Statements (approximately 1,035 pages) representing 91 major impact investing organizations worldwide (see Table 1 for a list of them).[3] We also visited the official website of the studied impact investing organizations to better understand their mission/vision, operations, and product/service offerings.

[2] See https://www.impactprinciples.org

[3] Because all the 91 firms are voluntary signatories to the OPIM platform and because the operating principles promoted by the OPIM platform focus on management control, these signatories arguably represent best practices on impact risk management in impact investing.

--- Insert Table 1 around here ---

**Data Analysis**

As noted in Section II, the control environment underlying impact risk management in impact investing entails a high degree of uncertainty and ambiguity. Due to the lack of prior theory and evidence for controlling impact risk in impact investing, we adopt an inductive research approach (e.g., Strauss and Corbin 1997; see also Cardinal et al. 2004; Martin and Eisenhardt 2010). Accordingly, our data analysis follows the recommended procedures for inductive approaches for analyzing qualitative data with no a priori hypotheses (Gioia, Corley, and Hamilton 2013; Martin and Eisenhardt 2010; Miles, Huberman, and Saldaña 2014). In the first stage, we read and re-read the documents collected to obtain a contextual understanding of impact investments made by the studied investors.

Next, we analyze the data to understand the impact risk control mechanisms that investors adopt. We theorize that impact risk in impact investing can arise from three major sources: investee companies' operations, investor companies' operations, and the broader investment ecosystem's operations. We inductively identify the control mechanisms that investors establish to manage impact risks at different levels (i.e., investee, investor, and system) (see Table 2, Table 3, and Table 4). The analysis is iterative rather than linear (Cardinal et al. 2004; Gioia et al. 2013), and involves consultation with relevant prior literature to make sense of emerging control mechanisms. For example, the studies of Mahama (2006) and Dekker, Sakaguchi, and Kawai (2013) help conceptualize "dialogue" and "capability building support" as control mechanisms adopted by investors to control investee companies' operations to manage impact risk. As a second example, the articles of Pfeffer and Salancik (1978) and Wry, Cobb, and Aldrich (2013) help conceptualize "advocacy and policy work" and "crowding in capital flow" as control mechanisms investors use to influence the behavior of key actors in the broader investment ecosystem to manage impact risk. As a third example, the articles of

Ferreira and Otley (2009) and Granlund and Malmi (2002) help conceptualize "integrated investment management systems" as a control mechanism that investors establish to control their own operations to manage impact risk.

In the third stage, drawing on prior literature (e.g., Cardinal et al. 2017; Cardinal et al. 2004; Snell 1992), we group various control mechanisms (identified in the above stage) into three broader categories: input, behavior, and output controls. We categorize a specific control mechanism as i) "input controls" if it mainly concerns with managing the flow of financial/human/material resources into different levels, ii) "behavior controls" if it primarily concerns with directing and monitoring ongoing activities and behavior of relevant actors in different levels, or iii) "output controls" if it mainly concerns with evaluating/regulating final outcomes/results in different levels.

We also investigate whether a specific control mechanism focuses more on managing positive or negative impact risk. We categorize a specific control mechanism as i) "focuses more on managing positive impact risk" if the discussion around the control mechanism centers more around delivering positive impact, or ii) "focuses more on managing negative impact risk" if the discussion around it centers more around avoiding/mitigating negative impact.

Finally, we synthesize the above analysis to obtain a comprehensive picture of how investors adopt various control mechanisms to manage impact risk.

## IV. FINDINGS

In the following sections, we first discuss the major steps involved in a typical impact investing process. We then discuss various control mechanisms that impact investors adopt to manage impact risk, and how they adopt them.

**Impact Investing Process**

As noted earlier, impact investing focuses on both impact and financial performance of an investment project. A typical impact investing process consists of four major steps. The *first step* involves initial project screening, where investors apply various impact criteria alongside financial criteria to assess the initial fit between the potential investment projects and investors' objectives. Investment projects that pass the initial screening are shortlisted for the *second step* – investment due diligence. In the due diligence stage, investors undertake a more detailed assessment of the impact and financial aspects of a potential investment project, which helps them decide whether to invest in the project or not.

The projects that pass the due diligence stage are selected for the deal negotiation stage – the *third step*. Here, investors negotiate with the potential investee companies about the terms and conditions of investments, including the reporting requirements and the action plan that needs to be implemented to manage impact and financial performance in the post-investment period. If investors and investees agree on investment terms and conditions, the project moves to the *fourth step* – investment performance monitoring and evaluation. Here, investors monitor whether the investment project is progressing as expected, and respond appropriately. This includes, for example, monitoring whether pre-agreed action plans to achieve expected impact and financial performance are implemented appropriately and whether any significant new opportunities or risks have emerged in relation to the project's impact/financial performance. The fourth step also involves evaluating an investment project's actual impact and financial performance against the expected performance, which is usually done at the end of a certain period (e.g., annually). This performance evaluation helps investors decide the next courses of action to address any impact/financial performance concerns.

Next, we present how impact investors adopt control mechanisms to manage impact risk at the investee-level operations.

**Control Mechanisms to Manage Impact Risk Concerning Investee-Level Operations**

As noted above, investee companies' operations are a major source of impact risk in impact investing. This section presents input, behavior, and output control mechanisms that investors adopt to manage impact risk regarding investee-level operations.[4] We summarize these findings in Table 2 and provide representative quotations in Appendix 1.

--- Insert Table 2 around here ---

***Input Control Mechanisms***

Impact investors adopt several input control mechanisms that mainly deal with selecting the "right" investee companies and/or further supporting them to build their impact management capability. One example of input control mechanisms is the adoption of scoring and rating techniques, where investors evaluate potential investment projects by scoring and rating them against pre-defined investment criteria. While selecting suitable investment projects in the pre-investment stage, a major challenge that impact investors face is "the difficulty in comparing the wide range of different impact strategies" underlying different investee companies. Scoring and rating techniques enable impact investors to "individually analyze and compare every investment opportunity from an impact perspective".

Generally, the scoring and rating techniques include several specific indicators/criteria covering multiple impact dimensions such as "the beneficiaries of the impact", "the depth, scale and duration of the impact generated", and "the risk that the expected impact does not occur". In most cases, the specific indicators/criteria included in the scoring and rating techniques are aligned with recognized international reference frameworks such United Nations Sustainable Development Goals (UN SDGs). For example, the scoring tool of Impact Bridge incorporates "sixty-six inputs" covering "different aspects of the potential investment"

[4] Due to space limitation, we explain three examples of control mechanisms (one input control, one behavior control, and one output control). We follow the same approach for all three operational levels.

and focusing on "five specific impact themes" (e.g., decent work creation, women empowerment, financial inclusion) aligned with several UN SDGs such as SDG 10 (Reduced inequalities) and SDG 5 (Gender equality).

In most cases, scoring and rating techniques appear to focus more on managing positive impact risk than negative impact risk. Here, investors' scoring and rating techniques emphasize assessing "the likelihood of achieving the investment's expected [positive] impact" as opposed to the likelihood of avoiding the investment's unexpected negative impact. That said, a few investors' scoring and rating techniques seem to pay due attention to both positive and negative impact risk. For example, the scoring and rating system of Earth Capital "explicitly identifies both positive and negative impacts" of a potential investee company, and it will only make investments where "an investee will generate a net positive impact" as per its scoring technique.

A notable observation is that investors' scoring and rating techniques are predominantly based on managerial judgment and experience rather than sophisticated analytical techniques (e.g., econometric modeling). Specifically, relevant managers in an investor company use their "accumulated experience" and "expert judgements" to "assign scores" for each indicator/criterion incorporated in the rating technique, which are then aggregated to obtain a final impact score. Although the scoring and rating techniques are not based on sophisticated analytical techniques, they bring reasonable "objectivity" to investment project evaluation. Indeed, judgment-based scoring and rating techniques provide investors with reasonable guidance to "filter out" incompatible investment projects, "identify potential impact blind spots" within potential investment projects, and "compare" new investment projects from an impact perspective. For example, Symbiotics explains:

> Symbiotics assesses each potential investee using our proprietary rating methodology … The rating produces a grade from zero (lowest) to five stars (highest) ... We typically do not invest in any institutions that receive a score below two stars. This step allows us to not only filter out investees that are incompatible with Symbiotics' investment

> philosophy and approach, but also to assess the expected impact of each investment. … According to our scoring methodology, an institution that receives a grade of five stars has an extremely strong likelihood of contributing to sustainable development and an extremely low risk of having negative social impact, whereas the opposite is true for an institution that receives a grade of zero stars.

***Behavior Control Mechanisms***

Impact investors adopt behavior control mechanisms that primarily deal with directing and monitoring ongoing activities in investee companies. An example of behavior control mechanisms is on-site visits – physically visiting investee companies' operations. Regular on-site visits enable investors to obtain "on-the-ground knowledge" of the investee companies' operations and the focal geographic markets, thus facilitating impact risk management endeavors.

In the pre-investment stage, impact investors predominantly conduct on-site visits about negative impact risk. This is because an investee company's expected positive impact data are relatively easy to obtain from investee-provided documents or other secondary sources. In contrast, its potential negative impact data (ESG risk-related data) are relatively difficult to obtain from such sources. Hence, on-site visits constitute the major data source for potential negative operational impact at the investee level. This is particularly relevant for impact investors because they primarily invest in unlisted companies whose ESG data are not publicly available.

> responsAbility's investment universe mostly consists of mid-size companies that are rarely listed on capital markets. Consequently, almost no ESG information is publicly available, meaning that ESG data must be assessed and collected by the investment teams. Due diligence of ESG issues is carried out by responsAbility's investment teams and ESG experts. (responsAbility Investments)

In the post-investment period, on-site visits as an impact risk controlling tool play several roles. First, they serve as an impact evaluation tool, evaluating actual impact performance against the expected performance, thus identifying impact shortfalls (i.e., positive impact risk). For example, in the case of IFC, "portfolio officers and managers, through periodic client visits,

assess progress against development outcomes and work with clients to take remedial action in cases where development outcomes are at risk". On-site visits as an impact evaluation tool also focus on negative impact risk, enabling investors to review their portfolio companies' "ESG performance" and to "develop recommendations for improving ESG performance".

Impact investors also adopt on-site visits as an impact validation tool, validating impact data accuracy. This is particularly the case where investors obtain "self-reported" impact data from investee companies. For example, for Developing World Markets, investee-reported impact data are "vetted through field visits" conducted by its investment and risk team to "validate the accuracy of the reporting and review progress on impact achievements and shortfalls".

Another purpose of on-site visits is to monitor the compliance of investee companies regarding ESG risk issues. Here, investors conduct "monitoring visits" to assess investee companies' ex-post "compliance" with the ESG risk mitigation activities developed in the pre-investment phase. Furthermore, when any "negative operational impacts" emerge from the investee's operations, investors undertake on-site visits to "assess compliance" and "develop a corrective action plan".

Finally, on-site visits serve as an early warning tool. Here, investors conduct field visits to identify "ESG risks and opportunities that may emerge", thus facilitating early actions. Indeed, field visits are considered to provide investors with "early visibility into any ESG risk issues", thus enabling them to work with the investee companies to "proactively address problems".

***Output Control Mechanisms***

Investors also adopt output control mechanisms that primarily deal with evaluating final impact results at investee companies and responding appropriately. One example of output control mechanisms is establishing impact metrics and targets. Here, investors determine performance dimensions and levels to deliver impact objectives by establishing impact metrics/targets.

Where possible, investors attempt to develop impact metrics in alignment with recognized frameworks such as UN SDG indicators. However, as the impact investing industry is relatively new, standard metrics and guidelines are unavailable to capture relevant impact objectives in many sectors. We observe that impact metrics are primarily developed concerning expected "positive impact" such as "jobs created", "women benefited", and "households with clean energy access". Therefore, impact metrics as a control mechanism mainly help investors manage positive impact risk by enabling them to monitor ex-post positive impact shortfalls. While establishing impact metrics is common, "establishing impact performance targets" is "still a relatively nascent practice" in the impact investing market. Indeed, setting precise impact targets is considered difficult, mainly due to the inherent complexity of quantifying social impact. For example, AlphaMundi Group acknowledges that "it is difficult to establish strict impact targets" due to "constant uncertainty" around investment's social impact.

As "social impact is difficult to quantify", investors recognize that establishing quantitative impact targets may sometimes be misleading. To address this issue, investors utilize their longstanding experience and judgment to establish "qualitative targets" since "qualitative assessment can sometimes capture more accurately the realities" that impact investors try to measure. Furthermore, while setting precise impact targets may not always be possible, investors recognize that having some forms of impact targets brings the necessary discipline to the impact management process at the investee-level operations. For example, AXA Investment Managers notes:

> We also influence our investees to go beyond impact metrics and indicators by establishing impact performance targets. This is still a relatively nascent practice, particularly for fund investments, but we believe it is a necessary discipline to underpin the credibility of impact investments.

This also resonates with other investors who acknowledge the limitations of using impact targets to monitor impact shortfalls but emphasize the importance of continuously improving

the target-setting process through reflecting on their relevance and importance in a specific context and adopting a trial-and-error approach. For example, Blue like an Orange Sustainable Capital explains:

> Blue like an Orange monitors and shares the Fund's progress against "Reach Targets" … The "Reach Targets" have been set for a mock portfolio across the Fund I on the basis of a $200 million fund size. Blue like an Orange management is reflecting on the relevance and importance of setting "reach targets" at Fund level, given the limited information that "persons reached" provides with regard to the achievement of meaningful social impact.

Thus, given the inherent complexity of measuring social impact, determining appropriate impact metrics and targets is difficult. Indeed, impact metrics and targets may never be complete and precise in impact investing. Despite that, imprecise impact metrics and targets seem to bring important discipline to investors' impact risk management.

Next, we present how impact investors adopt control mechanisms to manage impact risk at the investor-level operations.

## Control Mechanisms to Manage Impact Risk Concerning Investor-Level Operations

As discussed earlier, investor companies' operations constitute another major source of impact risk in impact investing. This section presents input, behavior, and output control mechanisms that investors adopt to manage impact risk concerning their own operations. We summarize these findings in Table 3 and provide representative quotations in Appendix 2.

--- Insert Table 3 around here ---

### *Input Control Mechanisms*

At the investor-level operations, input control mechanisms primarily deal with selecting employees with appropriate skills and providing them with training programs to enhance their impact management capability. We observe that at investor companies, employee selection and training activities primarily focus on employees' skills associated with the creation of positive impact, such as "solving some of the most entrenched social issues", determining how investee

companies are “positively impacting people and places”, and effectively breaking down complex problems and prioritizing the areas to address. This suggests that employee selection and training activities as a control mechanism are focused more on managing positive impact risk.

However, using employee selection and training as an impact risk control mechanism is far from straightforward in impact investing. Investors recognize the difficulties in hiring suitable employees in the impact investing space. This is because simultaneously solving complex social problems and generating expected financial returns (as in the case of impact investing) require different skills than generating financial returns only (as in the case of traditional investing). That is, in impact investing, in addition to traditional investment skills, employees require “building mental comfort” with significant uncertainty due to the “additional complexity and ambiguity” existing in the pursuit of “multiple and sometimes competing objectives across financial return and social impact”. Investors acknowledge that impact management skills are much “harder to teach” than investment management skills. Therefore, while hiring employees, investors prioritize their “quality of thinking, social motivation and understanding of impact”, “diverse backgrounds”, and “multisector knowledge” over their “investment backgrounds”.

> We build our team by hiring people from diverse backgrounds because we believe this improves our ways of working and decision making. We prioritise quality of thinking, social motivation and understanding of impact. This is because these are harder to teach skills and are essential for our approach. We do not prioritise investment backgrounds, as we believe these skills are easier to teach. (Big Society Capital)

However, hiring suitable employees alone is not considered an effective tool to control impact risk in impact investing. Investors recognize that “excellence” in impact risk management is “a journey that requires constant learning, evolution, and improvement”. As a result, “impact is embedded” in investor organizations’ “core staff development” processes, which provide

employees with "additional, ongoing capacity building support" to build a fundamental understanding of "social impact management over time".

Overall, given the additional complexity and ambiguity persisting in impact investing, investors acknowledge the difficulties in using employee selection and training as an effective impact risk control mechanism. They address this issue by emphasizing impact management skills more than investment management skills in their employee selection and training activities.

***Behavior Control Mechanisms***

Investors adopt behavior control mechanisms to direct and monitor the ongoing investment activities concerning their own operations. An example of behavior control mechanisms is adopting an integrated investment management system. Investors recognize that to effectively manage their impact risk, there is no alternative but to manage impact and ESG "risk and opportunities throughout the investments life-cycle". An integrated investment management system (IIMS) facilitates such an endeavor. Generally, investors develop an IIMS based on a combination of its own objectives and policies and some international guidelines such as "IFC Performance Standards on Environmental and Social Sustainability" and "the World Bank Group Environmental, Health, and Safety (EHS) Guidelines".

Investors claim several benefits of using an IIMS as an impact risk control mechanism. For example, an IIMS guides how investors shall "drive the ongoing ESG and impact performance" as a whole and at individual portfolio companies.

> [Our] integrated Impact and ESG management system … provides an innovative and practical ESG and Impact Management Framework for effective incorporation and management across DPI's [Development Partners International's] investment processes and decision-making, as well as in the day-to-day business activities of the firm. It guides how DPI shall drive the ongoing ESG and Impact performance of the Fund's investment portfolio, as a whole and at individual Portfolio Companies. (Development Partners International)

In this way, an IIMS aims to ensure that ESG and impact considerations are "formally integrated at each step of the investment process" and fed into "investment processes and decision-making" and "the day-to-day business activities", thus mitigating investors' impact risk. However, several investors note that they have started using an IIMS only "recently". Hence, although an IIMS is claimed to offer several benefits, the actual effectiveness of an IIMS as an impact risk control mechanism may be far from certain. As investors' "impact investment program continues to grow and evolve", they will "consider opportunities" to improve their IIMSs to better manage their investments' impact risk.

***Output Control Mechanisms***

Investors also adopt output control mechanisms to evaluate their overall investment outcome at the end of a milestone period. One such control mechanism is investment outcome review. Here, appropriate teams in the investing organizations (e.g., the Responsible Investing team at Actis) review the final impact outcome at the portfolio and the individual investee company levels. This usually includes comparing "the expected and actual impact return" on a quarterly or annual basis.

At investor organizations, significant rewards (or punishments) are generally not tied to the attainment (or nonattainment) of the expected impact, mainly due to the potential unintended consequences of such a linkage. For example, Big Society Capital (BSC) notes:

> BSC has chosen not to link staff compensation with the achievement of … impact returns, in case of likely unintended effects.

Instead, investors predominantly adopt the investment outcome review as "an important opportunity" to draw key "lessons" and leverage them to better achieve their impact goals in the future. Following the outcome review, investors usually prepare "evaluation reports" that may "contain recommendations for adapting certain aspects of the investment process, whose subsequent implementation is monitored". In most cases, the investment outcome review

appears to focus more on managing positive impact risk. In other words, it concerns more about the delivery of positive impact outcomes and the identification of investments that are not on track to attain the expected positive impact performance.

> A member of the RI team attends portfolio review meetings, at which each investment is reviewed. … Findings from the quarterly and annual reviews are used to improve operational and investment decisions in the delivery of positive impact outcomes. (Actis)

While the investment outcome review helps investors manage their impact risk, several complexities around measuring social impact can reduce its effectiveness as an impact risk control mechanism. Given that investee companies often operate in "different geographical" contexts, a major difficulty that investors face while conducting an investment outcome review is "credible" data sources considering "appropriate geographical context". To address this issue, many investors collect data from "third-party sources" and employ "third-party consultants" to facilitate their outcome reviews. Also, investors who use self-collected data to conduct their investment outcome reviews often acknowledge that their data collection processes have several limitations (e.g., the lack of a systematic and comprehensive impact data collection process) that could limit their ability to obtain an accurate picture of their impact performance, especially, "impact underperformance". As a result, they will consider updating their investment outcome review process to "more explicitly incorporate a protocol" for "documenting the process of impact data collection", thereby better tackling impact underperformance issues in the future.

Next, we present how impact investors adopt control mechanisms to manage impact risk at the system level.

**Control Mechanisms to Manage Impact Risk Concerning System-Level Operations**

While most control literature focuses on influencing the behavior of actors within a firm's boundary, a stream of control literature also highlights the importance of influencing the

behavior of actors outside a firm's boundary in order to better attain organizational goals (e.g., Fligstein 1990; Pfeffer and Salancik 1978). As a firm's survival, stability, and growth much depend on its external environment, it attempts to influence the behavior of key market/system actors (e.g., competitors, local and central governments) through various controlling mechanisms, for example, creating/joining trade associations and advocating for desired changes in regulations to ensure market stability and to reduce the negative consequences of competition (see Fligstein 1990; Kotter 1979; Wry et al. 2013).

In line with the above discussion and as noted earlier, the operations of the broader investment ecosystem constitute a major source of impact risk in impact investing. This section presents control mechanisms that investors adopt to influence the behavior of key system actors to avoid/mitigate impact risk that may arise from the system level. We summarize these findings in Table 4 and provide representative quotations in Appendix 3.

--- Insert Table 4 around here ---

***Input Control Mechanisms***

At the system level, investors adopt input control mechanisms to manage resources (e.g., financial, human) that flow into the impact investment market. One example of input control mechanisms is crowding in capital flow in targeted sectors in the impact investing market. Impact investors recognize that solving a specific pressing social problem (e.g., greater access to clean water and sanitation) will require a concerted effort from both portfolio and non-portfolio companies operating in the specific sector. However, if the focal sector significantly lacks capital supply, it can undermine the sector's ability to effectively address the focal social problem, thus giving rise to impact risk. To address this issue, impact investors influence various system actors to increase capital supply in their preferred sectors in the impact investing market.

As part of crowding in capital flow in a specific sector targeting a specific social problem, investors actively collaborate with "development finance institutions" and similar organizations "to develop and deploy targeted financial structures to de-risk upstream capital investment". For example, Water.org explains:

> Water.org works to highlight market opportunities for lenders in the water and sanitation space to maximize the level of financing flowing to the sector. … Recently, Water.org partnered with IFC to launch a global credit-enhancement facility (GCEF) dedicated to WASH lending. The GCEF represents a market-based master portfolio loan guarantee program designed to encourage commercial banks to increase the availability of water and sanitation loans.

Crowding in capital flow as a control mechanism catalyzes "additional capital" into the market, especially in an "underserved or underdeveloped" sector, thus increasing the chance of attaining impact goals by better addressing the focal social problem. However, from a control perspective, crowding in capital flow has limitations. This is because here, investors seek to "catalyze other investors into these markets to further grow their impact". Such a catalyzing role can mainly encourage instead of compelling system actors such as peer investors to direct capital flow.

***Behavior Control Mechanisms***

Investors also adopt behavior control mechanisms at the system level. A prominent example is the advocacy and policy work through which investors attempt to influence system actors to make a positive change in market rules and regulations. Investors recognize that policy-related deficiencies in the current impact investment market, including insufficient regulations to protect investees and/or beneficiaries, could harm vulnerable investees and beneficiaries, thus raising negative impact risk. To control this risk, investors undertake advocacy and policy work to better address the policy-related deficiencies in the market. For example, by observing fewer regulations in the broader fintech industry, Community Investment Management (CIM)

worked with the Responsible Business Lending Coalition to develop and advocate a set of responsible practices to ensure fair borrower protections:

> In small business lending, there are fewer regulations and consumer protections in place for financial products. Harmful and unregulated products threaten the livelihoods of small business owners and their employees in communities across the country. In an effort to promote borrower-friendly products for small businesses, CIM worked with the Responsible Business Lending Coalition to co-author and develop a set of responsible practices and codified behavior within fintech lending. (Community Investment Management)

Advocacy and policy work as a control mechanism contributes to investors' "overarching impact strategy to drive" their impact goals. However, from a control standpoint, investors' advocacy and policy work may not produce immediate results in controlling impact risk. This is because investors mainly undertake a mild (instead of strong) form of advocacy and policy work, which aims to gradually influence various market actors to enact desired positive changes in market rules. Such a mild form of advocacy and policy work includes publishing policy papers and sharing best practices.

***Output Control Mechanisms***

Investors also adopt output control mechanisms at the system level. A major example is developing a harmonized impact measurement system, where investors attempt to ensure a comparable and consistent approach in evaluating investments' impact in the impact investing market. To explain, an investee company often receives investments from multiple investors. Impact measurement gets more complicated when different investors use different metrics for measuring the same impact goal, or when different investors use different types of data to calculate the result of the same impact metric. The lack of harmonized impact measurement systems in the impact investment market could generate misleading impact results, thus increasing the risk of achieving "false-positive" or "false-negative" impact results. To address this risk, investors undertake activities to harmonize "impact measurement, indicators and reporting" in the market, which predominantly focuses on positive impact performance. For

example, FMO, CDC Group, Proparco, and several other impact investors are working together to develop a harmonized system – "the Joint Impact Model" – to evaluate investments' (direct and indirect) positive impact in a consistent way.

> We work with our fellow European Development Finance Institutions … to harmonize the … impact on (direct and indirect) jobs. We also actively participates [*sic*] in various platforms that discuss impact measurement and harmonisation, such as the Harmonised Indicators for Private Sector Operations (HIPSO) and the IRIS+ metric system. (CDC Group)

Having said that, developing a harmonized impact measurement system as an impact risk control mechanism has its limit. This is because while any harmonized impact measurement systems would facilitate measuring and reporting impact performance consistently and comparably in the impact investing market, adopting such a system is voluntary. That is, it is up to the individual investing organization to decide the extent to which it will adopt and implement the harmonized system. Furthermore, there is a trade-off relating to harmonization. While harmonization would lead to consistency in impact measurement, it may lead to the exclusion of idiosyncratic impacts. Therefore, impact investors need to use their experience and judgment to develop bespoke metrics to measure relevant impact dimensions that cannot be adequately measured via a harmonized measurement system.

## V. DISCUSSION

### Impact Risk in Impact Investing

Prior literature mainly focuses on financial risk issues in impact investing (e.g., Apostolakis et al. 2018; Barber et al. 2021; Block et al. 2021). The current study contributes to the literature by being the first to systematically study impact risk management in impact investing. It shows that investors manage impact risk concerning investee-level, investor-level, and system-level operations, and that different sets of control mechanisms are adopted to manage impact risk regarding different operational levels. This highlights the complex nature of managing impact risk. While managing financial risk in impact investment is relatively easy (since the financial

risk management knowledge borrowed from traditional investment can be used to a large extent in impact investment; see Block et al. 2021), managing impact risk appears to be a far more complicated task due to the inherent complexity of contextualizing impact and impact risk in different settings across multiple and temporally separated operational levels.

We also bring construct clarity (Islam 2020a; Suddaby 2010) to the notion of impact risk in impact investing. Existing literature mainly assumes that the impact risk of an investment project arises from investee companies' operations (see Moore et al. 2012; Ormiston et al. 2015). This paper shows that in the impact investing context, impact risk can arise from not only investee-level operations but also investor-level and system-level operations. Regarding investor-level operations, investment projects may fail to attain the expected positive impact and/or may create a negative impact due to the substandard operations of investor companies and/or their irresponsible actions. Regarding system-level operations, investment projects may fail to achieve their overall impact goals due to the substandard operations of the broader impact investing ecosystem and/or irresponsible actions of system actors. This study suggests that the phenomenon of impact risk in impact investing needs to be understood at all three operational levels (as opposed to investee-level operations only). Construct clarity is an essential feature for effective theorizing issues around a phenomenon (Islam 2020a; Suddaby 2010). The current study thus provides a platform for the effective theorization of issues surrounding impact risk in impact investing by bringing construct clarity to this important topic.

**Impact Risk Control Mechanisms in Impact Investing**

The current study also contributes to the risk management literature (e.g., Hall et al. 2015; Ittner and Oyon 2020; Jordan et al. 2013; Mikes 2009, 2011) by providing insights into the control mechanisms that impact investors adopt to manage impact risk. In doing so, this study

also responds to calls for advancing our understanding of issues surrounding nonfinancial risk management (i.e., impact risk in this study) (Mikes 2009, 2011; Soderstrom 2019).

The first insight that this study offers is in the area of designing control systems to manage impact risk in impact investing. Our observation suggests that while designing and implementing many impact risk control mechanisms, impact investors rely heavily on their judgment and experience instead of sophisticated analytical techniques. For example, scoring and rating techniques adopted to identify impact risk of potential investment projects are primarily built on investors' accumulated experience and expert judgment. Similarly, acknowledging the inherent complexity in establishing precise (quantitative) impact performance targets to control impact risk, investors often use their longstanding experience to establish some forms of targets (e.g., qualitative impact targets) and adopt a trial-and-error approach to gradually improve the impact target-setting process.

Although judgment, heuristics, experience, and "gut feel" have traditionally been associated with bias and inefficiency, scholars have started to recognize the critical roles they play in decision making in a highly uncertain environment (see e.g., Dane and Pratt 2007; Huang 2018; Huang and Pearce 2015). For example, Huang (2018, 1822) notes how investors use their gut feel and experience to manage high-level complexity and uncertainty associated with investing in early-stage firms:

> "[R]ather than being rapidly and unconsciously derived … what investors refer to as their gut feel is actually an elaborate intuiting process that incorporates both cognitions and emotions, and is both analytical and perceptually subjective. … Over the course of this process, investors capture and manage the wide expanse of information—multiple signals, cues, and complexity—and make sense of, and mentally account for, the complex considerations of an investment decision. The process helps investors … to substantiate their decision and take action."

In line with this, we argue that in a highly complex management control context such as managing impact risk in impact investing, control mechanisms are likely to rely heavily on judgment and experience. This is because judgment-based control mechanisms can provide

investors with valuable tools to make sense of a highly uncertain and ambiguous context of impact risk management in impact investing. However, in this context, sophisticated analysis-based control mechanisms are unlikely to become functional due to the unavailability of complex data covering numerous attributes of an impact investment project. Even if such complex data are available, adopting complicated analysis-based control mechanisms may lead to "analysis paralysis" (Huang 2018, 1824) that would make the implementation of control mechanisms very difficult or nearly impossible.

Furthermore, given the inherent complexity in managing impact risk in impact investing, designing and implementing a "fully complete and perfect" control system may not be economically feasible. Also, from a control standpoint, impact risk in impact investing is characterized by a low degree of output measurability and incomplete knowledge of cause-and-effect relations. Control systems may never be fully perfect in such a context due to the presence of significant information asymmetry, subjective interpretations, and myriad organizational and environmental factors that could continuously shift the impact risk landscape in impact investing. In this context, designing a perfect control system based on the "optimal" principle may be an illusion. Instead, we argue that a better approach would be to adopt the "satisficing" principle (see Simon 1955, 1979; see also Bolton and Faure-Grimaud 2010; Sanders and Carpenter 2003; Winter 2000) to design control systems to ensure that they are good enough to provide investors with reasonable guidance to navigate the highly uncertain and ambiguous context of managing impact risk in impact investing. Our observations also seem to support this argument. For example, although the judgment-based scoring and rating techniques may appear imperfect in a strict sense, they enable investors to manage impact risk by identifying potential impact blind spots within potential investment projects and filtering out incompatible investment projects. Overall, this study suggests that given the inherent

complexity and ambiguity surrounding impact risk management in impact investing, control systems are more likely to adhere to the satisficing principle than the optimal principle.

Our study also suggests that the transferability of control roles (i.e., the roles that a specific control mechanism plays) between financial and nonfinancial risk management is not straightforward. For example, prior literature shows that, regarding financial risk, the role of on-site visits as a control mechanism is mainly limited to conducting an ex-ante financial risk assessment in the pre-investment phase (Klonowski 2007, 2010). The current study's observation suggests that regarding impact risk, while on-site visits play an important role in the pre-investment stage in the form of collecting the necessary information to perform an ex-ante impact risk assessment, they play a more vital and elaborated role in the post-investment period, including serving as an impact evaluation tool, an impact validation tool, a compliance tool, and an early warning tool. Thus, we suggest that while adopting control mechanisms to manage nonfinancial risk, managers should be mindful of the fact that specific control mechanisms that play a limited (or elaborated) role in managing financial risk may play an elaborated (or limited) role in managing nonfinancial risk.

This study also provides insights into the adoption of risk control mechanisms targeting actors outside a firm's boundary. Most risk management literature discusses risk control mechanisms in relation to influencing relevant actors within a firm's boundary (e.g., Dekker et al. 2013; Hall et al. 2015). The current study shows that to manage their impact risk, investors adopt control mechanisms to influence actors outside a firm's boundary alongside those within its boundary. For example, investors undertake advocacy and policy work to influence system actors to make a positive change in market rules and regulations, thus increasing the chance of delivering a positive impact and/or decreasing the chance of creating a negative impact. Thus, we argue that, to better manage impact risk in the impact investing context, the adoption of control mechanisms needs to be understood in relation to influencing actors both within and

outside a firm's boundary. This echoes prior literature (e.g., Fligstein 1990; Pfeffer and Salancik 1978) that recognizes the importance of using control mechanisms to influence external actors in order to better attain organizational goals.

The final insight that this study offers is in the area of relative emphasis on managing positive and negative impact risk in impact investing. Our observation suggests that most control mechanisms heavily focus on delivering expected positive impact rather than avoiding/mitigating unexpected negative impact. This suggests that impact investors pay more attention to managing positive impact risk than negative impact risk. We put forward one potential reason for this. The phenomenon of positive impact (and its risk) is relatively known territory for investors, whereas the phenomenon of negative impact (and its risk) is relatively unknown territory for them. For example, in the context of an investment project targeting to reduce the youth unemployment problem, it would be relatively straightforward for investors to define and measure the reduction of youth unemployment (i.e., positive impact). However, in the same context, it would be relatively complex for investors to define, let alone measure, what could potentially go wrong with the investment project (i.e., negative impact), which could range from potential negative consequences of the project on beneficiaries to customers and employees to local community and environment. Thus, in the impact investing context, positive (negative) impact risk is more (less) specific and measurable and is expected to have more (less) availability of relevant data. Research shows that goals, objectives, or metrics having a higher (lower) level of specificity, measurability, and data availability draw more (less) attention from relevant actors (e.g., Cavalluzzo and Ittner 2004; Latham and Locke 2007). In line with this, we argue that the relatively higher degree of specificity, measurability, and data availability associated with positive impact risk might have prompted investors to design/implement control mechanisms focusing more on managing positive impact risk than negative impact risk.

## VI. CONCLUSION AND FUTURE RESEARCH

This study examines how impact investors adopt control mechanisms to manage their impact risk. It brings construct clarity to the notion of impact risk in impact investing by providing a more complete picture of it than the existing literature offers. This study also contributes to the risk management literature by introducing impact risk as a novel, nonfinancial risk. It provides insights into various input, behavior, and output control mechanisms that investors adopt to manage impact risk at investee-level, investor-level, and system-level operations.

The current study also has practical implications. A greater understanding of the adoption of control mechanisms to manage impact risk enables impact investors and intermediaries to bring more discipline in delivering expected positive impact and mitigating unexpected negative impact. This understanding would also help government policymakers and industry networks introduce new policies to better manage impact risk in the impact investing industry.

This study offers several future research opportunities. For example, building on the current study, future research could investigate what investee companies do to manage their impact risk. Also, while our data (i.e., annual disclosure statements) provide an opportunity to understand various types of impact risk management activities undertaken by a large number of impact investors worldwide, they may sometimes represent the "official rhetoric" of investor companies. Future field studies could offer deeper insights into how impact risk management practices are actually mobilized at both the investor and investee levels. Also, a visual articulation of control mechanisms (e.g., risk maps, strategy maps) facilitates better implementation of organizational strategies (Islam 2019; Jordan et al. 2013). Researchers could investigate whether and how a visual articulation of impact risk control mechanisms could facilitate better management of positive and/or negative impact risk. Finally, issues around the relative effectiveness of different control mechanisms in managing impact risk, the trade-off in

the harmonization of impact measures, and the learning from control failures in impact investment projects are all fruitful avenues for future research.

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## Table 1. Data

| # | **Impact investing organization** | **Headquarters** | **Disclosure statement** (Year) |
|---|---|---|---|
| 1 | Actis | UK | 2020 |
| 2 | Acumen Capital Partners | USA | 2020 |
| 3 | Adenia Partners | Mauritius | 2021 |
| 4 | Albright Capital Management | USA | 2020 |
| 5 | AlphaMundi Group | Switzerland | 2020 |
| 6 | Amundi | France | 2020 |
| 7 | AXA Investment Managers | France | 2020 |
| 8 | Belgian Investment Company | Belgium | 2020 |
| 9 | Big Society Capital | UK | 2021 |
| 10 | Blue like an Orange Sustainable Capital | USA | 2020 |
| 11 | BlueOrchard Finance | Switzerland | 2020 |
| 12 | BNP Paribas Asset Management | France | 2020 |
| 13 | CAF | Multilateral | 2020 |
| 14 | Calvert Impact Capital | USA | 2020 |
| 15 | Capria Ventures | USA | 2020 |
| 16 | Cardano Development | Netherlands | 2020 |
| 17 | CDP | Italy | 2019 |
| 18 | CDC Group | UK | 2020 |
| 19 | Christian Super | Australia | 2020 |
| 20 | Community Investment Management | USA | 2020 |
| 21 | COFIDES | Spain | 2020 |
| 22 | Cordiant Capital | Canada | 2020 |
| 23 | Credit Suisse | Switzerland | 2020 |
| 24 | DEG | Germany | 2020 |
| 25 | Denham International Power | USA | 2020 |
| 26 | Developing World Markets | USA | 2020 |
| 27 | Development Partners International | UK | 2020 |
| 28 | DWS Group | Germany | 2020 |
| 29 | Earth Capital | UK | 2021 |
| 30 | Egyptian-American Enterprise Fund | USA | 2020 |
| 31 | European Bank for Reconstruction and Development | Multilateral | 2021 |
| 32 | European Development Finance Institutions | Multilateral | 2020 |
| 33 | European Investment Bank | Multilateral | 2020 |
| 34 | Finance in Motion | Germany | 2020 |
| 35 | FinDev Canada | Canada | 2020 |
| 36 | Finnfund | Finland | 2020 |
| 37 | Flat World Partners | USA | 2020 |
| 38 | FMO - Dutch Development Bank | Netherlands | 2021 |
| 39 | Foundation Corporation Holdings | UAE | 2021 |
| 40 | FullCycle | USA | 2020 |
| 41 | I&P | France | 2020 |
| 42 | IDB Invest | Multilateral | 2020 |
| 43 | IFC Asset Management Company | Multilateral | 2021 |
| 44 | Impact Bridge | Spain | 2021 |
| 45 | Incofin Investment Management | Belgium | 2020 |

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|---|---|---|---|
| 46 | INOKS Capital | Switzerland | 2020 |
| 47 | International Finance Corporation | Multilateral | 2021 |
| 48 | Investing for Development | Luxembourg | 2020 |
| 49 | Islamic Corporation for the Development of the Private | Saudi Arabia | 2020 |
| 50 | Japan International Cooperation Agency | Japan | 2020 |
| 51 | Kohlberg Kravis Roberts & Co. | USA | 2020 |
| 52 | LeapFrog Investments | Mauritius | 2020 |
| 53 | LGT Venture Philanthropy Foundation | Switzerland | 2021 |
| 54 | Lightrock (LGT Lightstone) | UK | 2020 |
| 55 | MicroVest Capital Management | USA | 2021 |
| 56 | MIGA | USA | 2021 |
| 57 | Mirova | France | 2021 |
| 58 | Mountain Nazca | Mexico | 2021 |
| 59 | Neuberger Berman | USA | 2020 |
| 60 | Norfund | Norway | 2020 |
| 61 | Nuveen, a TIAA company | USA | 2021 |
| 62 | Obviam | Switzerland | 2021 |
| 63 | OeEB | Austria | 2021 |
| 64 | Partners Group | Switzerland | 2020 |
| 65 | PG Impact Investments | Switzerland | 2020 |
| 66 | Phatisa Group | South Africa | 2020 |
| 67 | Proparco | France | 2020 |
| 68 | Prudential Financial | USA | 2020 |
| 69 | Quona Capital | USA | 2021 |
| 70 | responsAbility Investments | Switzerland | 2020 |
| 71 | RockCreek | USA | 2020 |
| 72 | Sarona Asset Management | Canada | 2020 |
| 73 | SEAF | USA | 2021 |
| 74 | SIFEM | Switzerland | 2021 |
| 75 | STOA Infra & Energy | France | 2020 |
| 76 | Swedfund | Sweden | 2020 |
| 77 | Symbiotics | Switzerland | 2020 |
| 78 | The Investment Fund for Developing Countries | Denmark | 2020 |
| 79 | The Osiris Group | Hong Kong | 2020 |
| 80 | The Private Infrastructure Development Group | UK | 2020 |
| 81 | The Rise Fund | USA | 2020 |
| 82 | TriLinc Global | USA | 2021 |
| 83 | Trill Impact | Sweden | 2021 |
| 84 | Triple Jump | Netherlands | 2020 |
| 85 | U.S. International Development Finance Corporation | USA | 2020 |
| 86 | UBS Group | Switzerland | 2020 |
| 87 | UOB Venture Management | Singapore | 2020 |
| 88 | VentureWave Capital | Ireland | 2020 |
| 89 | Water.org | USA | 2020 |
| 90 | WaterEquity | USA | 2020 |
| 91 | Zurich Insurance Group | Switzerland | 2020 |

**Table 2. Control mechanisms investors adopt to manage impact risk concerning investee-level operations**

| Sources of impact risk | Control mechanisms adopted by investors | Description of control mechanisms | Classification of control mechanisms (Input/behavior/output) |
|---|---|---|---|
| Substandard operations and/or irresponsible actions of investee companies | Scoring and rating technique | Evaluating potential investee companies by scoring and rating them against pre-defined investment criteria | Input control |
| | ESG risk categorization | Assessing and categorizing the environmental, social, and governance risks of potential investment projects | Input control |
| | Capability building support | Providing technical assistance programs to investee companies to enhance their impact management capability | Input control |
| | Investment contract | Legal agreements between investors and investees about the terms and conditions of investments | Input control |
| | Dialogue | Sharing information to reduce information asymmetry between investors and investees | Behavior control |
| | Board position | Investors taking seats on the board of their investee companies | Behavior control |
| | On-site visit | Investors physically visiting investee companies' operations | Behavior control |
| | Establishing impact metrics and targets | Determining performance dimensions and levels to deliver impact objectives at investee companies | Output control |
| | Impact reporting | Measuring and reporting actual impact performance at investee companies at the end of a milestone period | Output control |
| | Outcome-based corrective action | Undertaking corrective action to address outcome shortfalls at investee companies | Output control |

**Table 3. Control mechanisms investors adopt to manage impact risk concerning investor-level operations**

| Sources of impact risk | Control mechanisms adopted by investors | Description of control mechanisms | Classification of control mechanisms (Input/behavior/output) |
|---|---|---|---|
| Substandard operations and/or irresponsible actions of investor companies | Employee selection and training | Selecting employees with appropriate skills at investor companies and providing them with training to further their impact management capability | Input control |
| | Integrated investment management system | Developing an integrated information system to monitor ongoing investment activities at investor companies | Behavior control |
| | Self-accountability | Establishing self-accountability regarding ongoing investment activities at investor companies | Behavior control |
| | Investment outcome review | Evaluating the overall investment outcome at investor companies at the end of a milestone period | Output control |

**Table 4. Control mechanisms investors adopt to manage impact risk concerning system-level operations**

| Sources of impact risk | Control mechanisms adopted by investors | Description of control mechanisms | Classification of control mechanisms (Input/behavior/output) |
|---|---|---|---|
| Substandard operations of the broader investment ecosystem and/or irresponsible actions of system actors | Crowding in capital flow | Increasing capital supply in investors' preferred sectors in the impact investing market | Input control |
| | Capability building support to investment intermediaries | Providing technical assistance to investment intermediaries to develop their impact management capability | Input control |
| | Advocacy and policy work | Undertaking advocacy and policy work to influence system actors to make positive changes in market rules and regulations | Behavior control |
| | Developing harmonized impact measurement system | Developing a harmonized system for evaluating impact performance consistently and comparably in the impact investing market | Output control |

## Appendix 1. Representative quotations for control mechanisms investors adopt to manage impact risk concerning investee-level operations

| Control mechanisms | Representative quotations from OPIM platform disclosures |
|---|---|
| Scoring and rating technique | STOA has developed a framework and Impact Toolkit … to promote rigor and candor in STOA's assessment. At the screening stage, a high-level assessment is conducted at first, which flags that the project matches at least one of the criteria (Accessible, Functional, Clean). … the project is scored considering the project impact potential and country need. (STOA Infra & Energy)<br>The Actis Impact Score™ (AIS), which has been applied to all new investments since January 2019, is a framework that supports Actis in the identification up to five strategic impact objectives for each portfolio business … As part of the AIS, Actis assesses the likelihood of achieving the investment's expected impact by considering the risk of the investment failing to achieve its intended impact as set out in the ex-ante projections. (Actis) |
| ESG risk categorization | [FMO] screens all transactions on ESG risk. FMO categorizes its investments in different levels of Environmental and Social (E&S) risk, similar to IFC's approach to E&S risk categorization … For direct investments, risk categorization is based on the client's activity, IFC Performance Standards triggered transactions and prevailing country specific ESG challenges. With regard to financial institutions the risk categorization is made on the basis of the bank's existing or proposed portfolio, IFC Performance Standards triggered transactions and prevailing country-specific sensitive issues. (FMO)<br>OeEB undertakes environmental and social (E&S) due diligence on all its investments, assessing the client's ability and commitment to achieve E&S outcomes consistent with the harmonized EDFI requirements over a reasonable period. OeEB uses a categorization system with the categories A, B+, B, C for direct investments in projects or companies and FI-A, FI-B, FI-C for financial institutions including investment funds to reflect the potential magnitude of E&S risks of its investments and to allocate resources and approval levels commensurate to the identified risk. (OeEB) |
| Capability building support | [We have] a specialized Capacity Building team, who are responsible for managing technical assistance projects for investees using donor funding. Symbiotics' Capacity Building team designs customized projects covering topics such as product development, risk management, social performance management and digital financial services. Through these projects, Symbiotics furthers its development impact by enabling investees to ultimately improve the services they provide to end-beneficiaries. (Symbiotics)<br>Proparco's technical assistance offer aims to strengthen the capacities of clients [investees] … in order to address capacity building and/or business transformation/development issues. The objective is to generate more positive impacts or improve their performance, by providing clients with expertise and know-how tailored to their needs. (Proparco) |
| Investment contract | Starting at due diligence, FinDev Canada will discuss and draft with a client a Development Impact Action Plan that outlines expected annual activities, impact KPIs and data reporting frequency. Once the investment is approved, these commitments are written into a final contract with the client. (FinDev Canada)<br>DPI's three impact themes mentioned above, climate change, gender and job creation and enhancements will be measured through proven measurement systems developed by organizations leading efforts in these areas. … DPI is able to include impact goals into shareholder agreements and/or have internal goals set at the time of investment. (Development Partners International) |
| Dialogue | During the investment period, we monitor and review ESG risks annually and these form part of our annual dialogue with fund managers. We expect fund managers to report significant ESG risk incidents, and the measures in place to remediate them and prevent further such incidents. (Credit Suisse) |

| | |
|---|---|
| | Sarona also engages in constructive dialogue with its local investment partners on ESG-related risks and opportunities. Sarona encourages these local investment partners to understand and monitor material risks and opportunities at portfolio companies in a systematic way. (Sarona Asset Management) |
| Board position | In cases of equity investments, the Fund also takes Board positions, allowing for even greater scrutiny of the investments and a strong degree of control when it comes to assessing and managing negative impacts. (Investing for Development)<br>lf changes in the context or specific events produce a risk of negative impact, IFU has the possibility to react through its Board membership. (The Investment Fund for Developing Countries) |
| On-site visit | Finnfund, together with the investee, often develops a project-specific Environmental and Social Action Plan (ESAP) based on the gaps identified during the environmental and social due diligence process. Finnfund supports the investees in meeting the requirements of the ESAPs and monitors compliance through regular communications and on monitoring visits. (Finnfund)<br>The Fund Sustainability Manager or ESG Officer makes annual site visits to Portfolio Companies to review their ESG performance. Over and above possible specific issues of concern, the purpose of the site visit is to assess strengths and weaknesses and develop recommendations for improving ESG performance, focusing on adherence to key ESG commitments and set focus areas. (Development Partners International) |
| Establishing impact metrics and targets | Impact objectives are designated ex ante rather than ex post and reflect an intentional approach to finding and creating impact … Explicit impact objectives are stated for all investments alongside overarching Impact Themes. … Investment memos have a specific section generally titled “Impact Thesis” in which the impact objectives are stated, aligned with the Impact Theme and further defined by KPIs [key performance indicators]. (Prudential Financial)<br>Blue like an Orange monitors and shares the Fund’s progress against “Reach Targets” … The “Reach Targets” have been set for a mock portfolio across the Fund I on the basis of a $200 million fund size. Blue like an Orange management is reflecting on the relevance and importance of setting “reach targets” at Fund level, given the limited information that “persons reached” provides with regard to the achievement of meaningful social impact. (Blue like an Orange Sustainable Capital) |
| Impact reporting | The funds’ investees are required to report on a set of predefined indicators, on a quarterly or semi-annual basis, that allow for an understanding of how the funds are being used and who they are reaching. (Finance in Motion)<br>The responsibility for data collection lies with the Impact team which collects data directly from clients using monitoring reports and data templates. … we will also seek to accelerate our input/output frequency of impact management and measurement, to better respond to internal management needs, and to provide clients with analysis and feedback within timelines that fit their operational cycles. … [It] drives both performance and impact learning … [and] will provide us with a better understanding of development impact and serve as a basis for continuous improvement. (FinDev Canada) |
| Outcome-based corrective action | Actis assesses progress against impact outcomes and works with investee companies to take action in cases where impact outcomes may be at risk. (Actis)<br>Insufficient progress by a borrower company may lead TriLinc to deepen its engagement with the borrower company to understand the rationale for its impact performance. (TriLinc Global) |

## Appendix 2. Representative quotations for control mechanisms investors adopt to manage impact risk concerning investor-level operations

| Control mechanisms | Representative quotations from OPIM platform disclosures |
|---|---|
| Employee selection and training | We recruit people with a passion and commitment to solving some of the most entrenched social issues in the UK. Understanding the social sector in the UK is instrumental to what we do, and we encourage all staff to find both frontline volunteering and trustee roles. … We build our team by hiring people from diverse backgrounds because we believe this improves our ways of working and decision-making. We prioritise quality of thinking, social motivation and understanding of impact. This is because these are harder to teach skills and are essential for our approach. We do not prioritise investment backgrounds, as we believe these skills are easier to teach. … Impact is embedded in our core staff development resources, such as our Learning & Development (L&D) framework, which requires our team to build a fundamental understanding of social issue areas and relevant business models, as well as social impact management over time. (Big Society Capital) |
| Integrated investment management system | By integrating Environmental, Social and Governance (ESG) considerations into the management of portfolio companies, LGT Lightstone believes that businesses can deliver enhanced value for shareholders and stakeholders beyond their core impact. For this purpose, a customized ESG Management System (ESG MS) has been designed and implemented based on industry best practices. The ESG MS builds on guiding elements to ensure relevance and effectiveness of ESG management. … In this way, it is ensured that ESG considerations are formally integrated at each step of the investment process and fed into investment decision-making. (LGT Lightstone) |
| Self-accountability | FMO believes that transparency and accountability in its financing and investments are fundamental to fulfilling its development mandate. It allows our stakeholders to assess if FMO is achieving what it intends to do: empowering entrepreneurs in emerging markets to build a better world. To facilitate this, FMO … discloses selected relevant information about its investments and financing both prior to (explicitly inviting comments from the stakeholder community), and after contracting. Where deemed relevant, FMO works actively with its clients, partners and investees on disclosing project information and stakeholder engagement. In line with the IFC Performance Standards, this process may involve stakeholder analysis and planning, disclosure and dissemination of information, consultation and participation, grievance mechanism, and ongoing reporting to affected communities. (FMO – Dutch Development Bank) |
| Investment outcome review | The Actis RI [Responsible Investing] team review the impact performance of each investment to compare the expected and actual impact returns on an annual basis. … The review occurs annually through the lifetime of the investment … This is an important opportunity to update the firm on impact performance and to draw on lessons learned. Findings from the … reviews are used to improve operational and investment decisions in the delivery of positive impact outcomes. (Actis)<br>BSC has chosen not to link staff compensation with the achievement of financial or impact returns, in case of likely unintended effects. (Big Society Capital) |

## Appendix 3. Representative quotations for control mechanisms investors adopt to manage impact risk concerning system-level operations

| Control mechanisms | Representative quotations from OPIM platform disclosures |
|---|---|
| Crowding in capital flow | Water.org works to highlight market opportunities for lenders in the water and sanitation space to maximize the level of financing flowing to the sector. We are actively collaborating with development finance institutions to develop and deploy targeted financial structures to de-risk upstream capital investment and stimulate the growth of local markets for water and sanitation. Recently, Water.org partnered with IFC to launch a global credit-enhancement facility (GCEF) dedicated to WASH lending. The GCEF represents a market-based master portfolio loan guarantee program designed to encourage commercial banks to increase the availability of water and sanitation loans. (Water.org) |
| Capability building support to investment intermediaries | With over 75% of our investments to date into first time managers, teams or products, helping to build effective intermediaries has been particularly important for us. … We have been providing a range of one on one and group capacity building support to our fund managers and intermediaries. This includes, among other activities: Building Blocks programme: an in-practice guide that helps intermediaries and fund managers self-assess and identify organisational strengths, development needs and where additional support could be valuable to become an effective and sustainable social impact investment intermediary. (Big Society Capital) |
| Advocacy and policy work | Our advocacy and policy work in the sector contributes to our overarching impact strategy to drive widespread change and ensure fair borrower protections across the broader fintech industry, not just for our specific lending partners. CIM has promoted responsible lending practices with various regulatory bodies across different credit verticals and through several robust industry partnerships. For instance in small business lending, there are fewer regulations and consumer protections in place for financial products. Harmful and unregulated products threaten the livelihoods of small business owners and their employees in communities across the country. In an effort to promote borrower-friendly products for small businesses, CIM worked with the Responsible Business Lending Coalition to co-author and develop a set of responsible practices and codified behavior within fintech lending - The Small Business Borrowers' Bill of Rights. (Community Investment Management) |
| Developing harmonized impact measurement system | We consider further harmonisation of impact measurement, indicators and reporting an important focus area. We work with our fellow European Development Finance Institutions (EDFIs) on this, currently leading an EDFI initiative to harmonize the econometric modelling of impact on (direct and indirect) jobs. We also actively participates [*sic*] in various platforms that discuss impact measurement and harmonisation, such as the Harmonised Indicators for Private Sector Operations (HIPSO) and the IRIS+ metric system of the Global Impact Investors Network (GIIN). (CDC Group) |