

Before “et al.”

**Examining Virtual and In-person Settings’ Influence on
Knowledge Sharing in Academia**

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Before “et al.” – Examining virtual and in-person settings’ influence on knowledge sharing in academia

Abstract:

The core mission of academia is deeply rooted in the practice of sharing knowledge. In light of the recent virtualization of academia and knowledge sharing (KS) processes such as the ubiquitous research seminar, debates of how traditional, in-person settings of research seminars compare to the disruptive emergence of virtual settings rise to the surface. Thus, specifically through the lens of research seminars, this study unfolds with the aim of investigating KS under contextual differences, and asks: “*How do virtual and in-person research seminars affect KS?*” The framework of Social Exchange Theory (SET) is employed in this study to investigate the research question. The core concepts of SET: reciprocity, trust, costs, and benefits—all of which impact KS—are examined with respect to both in-person and virtual research seminars. Furthermore, this study takes a qualitative approach and utilizes multiple cases as the foundation for investigation. More specifically, data was collected from 30 semi-structured interviews with researchers from three Swedish universities. In this study, KS willingness is used to study KS. The findings uncover that in-person seminars promote reciprocity and trust, and how this is lacking virtually—thereby reducing KS in online seminars. Despite advantages of in-person settings, virtual seminars have the potential to increase benefits academics expect to attain from sharing knowledge. These findings add to nascent research, emphasizing the need for understanding knowledge management (KM) processes within universities, and provide relevant implications for research institutions and individual researchers in addressing the novel proliferation of technology into traditional academic processes.

Keywords:

Knowledge Sharing, Academia, Virtual Technology, Social Exchange Theory, Research Seminars

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Table of contents

1. Introduction	7
1.1 Background	7
1.2 Research Gap	8
1.3 Research Question	8
1.4 Delimitation	8
2. Literature Review	9
2.1 Knowledge Sharing	9
2.2 Knowledge Sharing and Academia	9
2.3 Knowledge Sharing and Research Seminars	10
2.4 Knowledge Sharing and Virtual Research Seminars	10
3. Theoretical Framework	11
3.1 Social Exchange Theory	11
3.1.1 Costs and Benefits	11
3.1.2 Reciprocity	12
3.1.3 Trust	12
3.2 Theory Discussion	13
4. Methodology	14
4.1 Research stance	14
4.2 Research design	14
4.2.1 A qualitative and abductive approach	14
4.2.2 Multi-case study	14
4.3 Data collection	14
4.3.1 Interview sample	14
4.3.2 Interview design	15
4.3.3 Data analysis process	15
4.4 Method discussion	15
4.5 Ethical considerations	16
5. Empirics	17
5.1 Reciprocity	17
5.1.1 Mutual exchange	17
5.1.1.1 Comparison: Mutual exchange	17
5.1.2 Organizational Support	18
5.1.2.1 Comparison: Organizational Support	19
5.1.3 Relationships	19
5.1.3.1 Comparison: Relationships	19
5.2 Trust	20
5.2.1 Environment	20
5.2.1.1 Comparison: Environment	21

5.2.2 Question-Asking Behavior	22
5.2.2.1 Comparison: Question-Asking Behavior	22
5.2.3 Power Structures	23
5.2.3.1 Comparison: Power Structures	23
5.3 Costs	24
5.4 Benefits	25
6. Analysis	29
6.1 Reciprocity	29
6.2 Trust	30
6.3 Costs and Benefits	32
7. Discussion and Conclusion	34
7.1 Answer to Research Question	34
7.2 Contributions to Literature	34
7.3 Limitations	35
7.4 Suggestions for Future Research	35
Executive summary	37
Bibliography	38
Appendices	46
Appendix 1 - Table of participants	46
Appendix 2 - Email to Interview Subjects	47
Appendix 3 - Interview Questions	47

1. Introduction

1.1 Background

Knowledge is broadly recognized as the primary asset within organizations (Quinn et al., 1996). The collaborative construction of knowledge emerges as a focal strategic undertaking for attaining organizational success, and thus, it necessitates meticulous management (Bollinger, Smith, 2001). For this reason, knowledge management (KM) is integral to the field of management. The concept of KM is encapsulated in capturing, sharing, and utilizing knowledge, with knowledge sharing (KS) being the *most* critical process within the realms of KM (Freeze, Kulkarni, 2007; Kipkosegi et al., 2020; Abbas et al., 2023). Academia—and specifically universities—present an exemplary case for investigating KS, as they foster their reputation and recognition through distributing and enhancing access to research and academic knowledge. Unlike other knowledge-intensive organizations, universities must capitalize on knowledge as a *product* (Ibrahim, Shaalan, 2022). As emphasized by Fan and Beh (2024), the “mission of academia” fundamentally relies on the act of sharing knowledge.

Academia has treasured the role of collaboration and sharing of scholarly work since its conception. Markedly, the early works of Charles Darwin which penetrated significant scientific advancements in the academy were facilitated by his patience in sending handwritten letters and followingly waiting out months before hearing back from colleagues. As such, the demand for KS within academia has always remained steady; and alongside technological advancements, the early 2000s brought steep increases in international research collaborations and communication (Deanna, Pretz, 2020). However, KS activities—particularly the traditional research seminar—have recently been criticized both in general academia and in Sweden for being characterized by hierarchical settings, limited social participation and selective invitations to speakers and viewpoints (Hutto et al., 2022; Björck, Lindgren, 2023). Considering the centrality of KS for academia as a whole, and how all researchers’ academic careers are conditioned by the KS they are exposed to at research seminars—investigating how seminars influence KS presents a valuable case in light of recent criticism (Carter et al. 2017).

Intriguingly, acting as an exogenous shock, the Covid-19 pandemic initiated the rapid digitalization of academia, revolutionizing the research seminar (Febria et al., 2022). What resulted was virtual formats of research seminars that provide new opportunities for academics to target some of the biggest constraints of the traditional, in-person seminar related to resources, time, and convenience—such as being able to invite more people without additional costs, lowering hierarchical structures of social spaces, and increasing the flexibility offered to speakers hosting presentations (Deanna, Pretz, 2020; Vincent, 2021). However, the question of how the contextual nature of virtual research seminars facilitates KS is yet to be better understood.

1.2 Research Gap

Though KS continues to lie at the heart of academia's ever-competitive agenda, research on the cross-section of KS and academia continues to remain scarce (Fan, Beh, 2024). Atop this paucity, the investigation of the virtualization of KS activities in academia—and the proliferation of novel opportunities for KS—is still in its exploratory stage, leading to calls for scholars to explore the advantages and disadvantages of the virtualization of practices such as seminars through a theoretical lens (Olechnicka, Ploszaj, 2024).

Amongst the most popular theories employed by KM scholars to explore KS is social exchange theory (SET) (Wang, Noe, 2010; Serenko, Bontis, 2016). Complementarily, extant KM studies centered on academia have popularly employed SET as a theoretical tool for investigating KS, indicative of a path towards further grounding its high explanatory potential in academia alike other knowledge-intensive organizations (Tan, 2015; Chung, Anh, 2022; Mutahar et al., 2022; Fan, Beh, 2024). However, approximately 88 percent of KS literature concerned with academics has followed quantitative methods, leading Fan and Beh (2024) to advocate for qualitative research to facilitate greater “in-depth insights and perspectives.” This study thus seeks to employ a qualitative methodology to investigate KS in research seminars through SET.

1.3 Research Question

Arguably, discourse on traditional, in-person research seminars becomes more critical in light of opportunities virtual seminars can provide. Academics now have a novel choice for heightened international, diversified collaboration, but at the same time, seemingly still hold closely the traditional seminar. This study therefore explores both the in-person and virtual research seminar to investigate the implications of different contextual settings for KS, asking:

“How do virtual and in-person research seminars affect knowledge sharing?”

1.4 Delimitation

Throughout this study, virtual research seminars refer to research seminars fully conducted via online platforms, as such, hybrid versions of research seminars are not taken into consideration. In addition, this study narrows its scope to Swedish academic institutions and engages with researchers from three Swedish universities. Furthermore, the sample is delimited to academic fields under business and economics.

2. Literature Review

2.1 Knowledge Sharing

Seeing as knowledge exists within the minds of individuals, crucial organizational knowledge is concealed and thus not applicable for others in the absence of *willful* sharing. Effectively, it is not possible to *force* KS. Instead, a facilitating environment is required. Unsurprisingly, adjusting individual KS behavior arguably poses the biggest challenge for organizations in a knowledge-intensive age (Bock et al., 2005).

Knowledge Management (KM) scholars have widely adopted Van Den Hoeff and De Ridder's (2004) two-dimensional model for distinguishing KS behavior. The two active processes—or behaviors—are termed knowledge donating (KD) and knowledge collecting (KC). KD concerns the agency of sharing one's intellectual capital with others, while KC delves into the position of one's agency to acquire intellectual capital from others. Both positions therefore take active stances towards KS in distinct ways (Kmieciak, 2020). For KS to be fruitful, multi-directionality through promoting both KD and KC should be prioritized (Chen et al., 2021).

2.2 Knowledge Sharing and Academia

Contributions to KM literature have been dominated by research within corporations, spurring interest in viewing KS as a profit-generating resource (Dezdar, 2017; Yeshinegus, Hong, 2022). The domineering focus on corporations has subsequently left the investigation of KS in academia scarce—asynchronous with the nature of universities, which are operating in a business concerned with the generation and dissemination of knowledge (Al-kurdi et al., 2018). KS has historically been rooted in academia's development and academics' KS engagement far exceeds the average level observed in other professions where the bulk of KS research is concerned. Contingent upon the recognition of their positioning in a knowledge-intensive industry, universities play an increasingly imperative role on a macro-scale for development and innovation, especially through academia and research output (Veer-Ramjeawon, Rowley, 2019).

To address this research gap, scholars have called for adoption of more effective KM processes in universities; and among them, KS amongst academics emerges as a critical focal point (Buckley, 2012; Al-kurdi et al., 2018; Veer-Ramjeawon, Rowley, 2019). Globally, KS approaches in academia involve seminars, collaborative publications, and conferences (Ibrahim, Shaalan, 2022). Without collaborative KS between researchers and their scholarly work, academia ceases to remain productive (Yang, 2007; Tan, 2015; Ibrahim, Shaalan, 2022). Thus, the valuation of academia is extremely interrelated with KS between local academic faculty, but also academics across global regions (Quarchioni et al., 2020). Still, KS in universities is vulnerable to several challenges (Ramayah et al., 2014; Al-kurdi, 2015). Among relevant challenges is the individualistic, competitive contemporary academic

landscape. The willingness of academics to engage in KS therefore represents a challenging yet attractive feat for academia and leadership when prioritizing the facilitation of a better KS environment (Wang, Noe, 2010).

2.3 Knowledge Sharing and Research Seminars

In denoting a focal point for advancing KS literature concerning academia, research or academic seminars present a valuable case for analysis given their globally fundamental integration within universities. The formal adoption of the research seminar in academic institutions during the 1830s was brought alongside organizational shifts towards the modern research university, which exhibited greater autonomy from state control, and accordingly allowed for heightened open practice of the production and dissemination of academic knowledge (Karlsohn, 2016). In the present-day, the research seminar serves the purpose for researchers to share knowledge while developing their academic positions, exchanging critical feedback, and engaging with “scholarly dialogue” (Febria et al. 2022; Addae, Kwapong, 2023). Research seminars are often conducted on a weekly-basis and academics can engage in seminars with speakers from their own institutions or invited speakers from external institutions.

2.4 Knowledge Sharing and Virtual Research Seminars

With the onset of COVID-19 and the introduction of remote work, the need to adapt quintessential KS activities such as seminars and conferences challenged academia, eventually resulting in virtual formats that have proliferated in certain institutions until the present-day (Deanna, Pretz, 2020). Though videoconferencing technology (VCT) dates to the 1960s, its wide use in academia only came amidst COVID-19. Digital seminar solutions exhibit the potential for real-time feedback, collaboration, and engagement via synchronous interaction. While literature concerning face-to-face research seminars is already lacking despite its fundamental importance for academia, Hardy and Young (2023) and Febria et al. (2022) initiate two of the very few yet crucial academic papers examining KS activities for academics since COVID-19 that exhibit mediation through VCT (Addae, Kwapong, 2022).

3. Theoretical Framework

3.1 Social Exchange Theory

Seeking to explain individuals' exchange processes, Blau (1964) pioneered the most popular use of SET in management literature. SET outlines dyadic exchange between individuals as operating under principles of rational behavior, where like economic exchange, individuals enter into social exchange relationships with the expectancy of the possibility to retrieve rewards (Zhang, Liu, 2021). However, Blau (1964) distinguished social exchanges from economic exchange, since "only social exchange tends to engender feelings of personal obligations, gratitude, and trust" (Cropanzano, Mitchell, 2005). Popularly, KM scholars characterize KS as a social exchange where individuals' KS is influenced by their expectation of retrieved *benefits* and incurred *costs* from KS (Tsai et al., 2012). Blau (1964) additionally outlined the importance of *trust* and *reciprocity* in social exchanges, and both principles have successfully been utilized to explain KS behavior.

Fittingly, Liang et al. (2008) and Liu et al.'s (2011) two sets of influential meta-analyses pushed forward SET as a highly explanatory, contemporary tool for investigating KS. Furthermore, in recognition of the multi-directional nature of KS in knowledge-intensive organizations, KS—and corresponding SET factors—has extensively been viewed as a *generalized* exchange as opposed to being strictly dyadic (Hew, Hara, 2007; Tsai et al., 2012; Zhao, Detlor, 2021).

3.1.1 Costs and Benefits

Blau's (1964) utilitarian framing of SET entails that individuals engage in KS following rational evaluations of *self-interested* benefits and costs, which become critical factors respectively increasing or decreasing KS (Bordia et al., 2006; Wang, Noe, 2010). A cost is simply a negative outcome of KS, while a benefit is what an individual can gain through KS (Zhang, Liu, 2021).

The most prominent KS benefits from the literature have been reputation, or other extrinsic rewards, while the most prominent costs tend to be time, effort, and image risks (Kankanhalli, 2005; Wasko, Faraj, 2005; Wang, Noe, 2010; Sedighi et al., 2017; Zhao, Detlor, 2021; Chung, Anh, 2022; Fan, Beh, 2024). Amidst a prominence of quantitative papers exploring KS through SET, few qualitative papers have served as insightful avenues for uncovering costs and benefits across organizational contexts, especially due to their broad theoretical conceptualizations (Hew, Hara, 2007; Wang, Noe, 2010; Sedighi et al., 2017).

3.1.2 Reciprocity

Reciprocity is recognized as a primary driver of KS (Bock et al., 2005; Lin et al., 2009; Nguyen et al., 2021). Reciprocity in regards to KS has been specified in previous literature as either reciprocal norms or relationships (Sun et al., 2014).

Firstly, the reciprocal norm of reciprocity places emphasis on the give-and-take nature of KS as a social exchange (Dysvik et al., 2015). Thereby, “both sides of the exchange tend to reward each other with similar behavior” (Chen et al., 2021). As such, the norm of reciprocity highlights that knowledge exchanges should be mutual, establishing a positive relationship between reciprocity and KS (Lin et al., 2009). Thus, conducive to the increase in reciprocal KS behaviors, KS willingness increases (Nguyen et al., 2021). Resultantly, researchers have indicated a correlation and positive relationship between knowledge collection and donation due to the reciprocity norm and “expectation of rewarding actions” (Dyskiv et al., 2015; Nguyen et al., 2019; Chen et al., 2021).

Secondly, reciprocal relationships are “the degree to which a person believes he or she can obtain an improved mutual relationship through knowledge sharing,” or an employees’ willingness to maintain ongoing relationships with other members specifically with respect to knowledge donating and collecting (Sun et al., 2014). Reciprocal relationships therefore significantly influence the intention to share knowledge (Tsai et al., 2012). According to Bock et al., (2005): “The greater the anticipated reciprocal relationships are, the more favorable the attitude toward knowledge sharing will be.”

3.1.3 Trust

As Blau (1964) outlined, trust is essential for maintaining stable exchange relationships as trust reduces the complexity arising from interdependence (Liao, 2008; Tsai et al., 2012; Wang et al., 2015). Thus, a higher degree of trust should entail higher KS willingness (Lee, Choi, 2003; Kuo, 2013; Jinyang, 2015; Annansingh et al., 2018; Chung, Anh, 2022; Mutahar et al., 2022).

Though trust is multi-faceted, its definition has been deduced down to “interpersonal trust” for more effective examination of SET on KS. Interpersonal trust comprises two forms of trust—namely, cognitive-based (cognitive) and affect-based (affective) trust (McAllister, 1995; Liu et al., 2011; Liang et al., 2012). Firstly, affective trust is defined as the positive emotional attachment or bond which stems from mutual care and concern between individuals. Secondly, cognitive trust is attributed to the degree to which individuals assess that those who they engage in KS with are competent, and furthermore that knowledge shared will be “appropriately and professionally” used (Holste, Fields, 2010; Jain et al., 2015). Conclusively, according to SET, higher degrees of affective and cognitive trust should increase KS willingness and quality (Chowdhury, 2005; Holste, Fields, 2010; Swat, Harvey, 2011; Tsai et al., 2012; Jinyang, 2015; Islam et al., 2021).

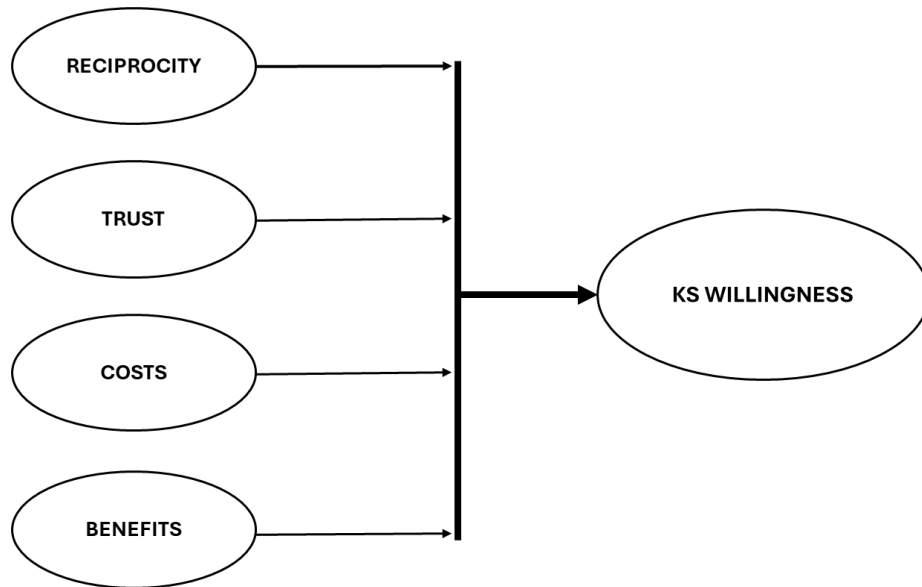


Figure 1: *Calderon and Iftikhar (2024), relationships between SET-factors and KS willingness.*

3.2 Theory Discussion

Though SET constitutes a robust theoretical framework owing to its vast use in KS research, its limitations constitute a premise for acknowledgement in this study (Cropanzano, Mitchell, 2005). Firstly, SET was derived from the study of economic exchange, and therefore the valuation of an intangible good such as knowledge may be undermined, which draws into a second limitation where scholars critique the rationality assumed in social exchange, as the measurement of knowledge becomes difficult to define objectively. Thus, SET may neglect the nuances of human emotions, as several more factors may influence KS and the assessment of trust, reciprocity, costs, and benefits (Serenko, Bontis, 2016). More broadly, scholars have emergently discussed the ambiguities of certain SET factors. For example, the lack of distinctiveness of forms of reciprocity under the broader umbrella factor of “reciprocity” lead Sun et al. (2014) to emphasize that contemporary theoretical contributions should emphasize their distinction rather than using them interchangeably. Therefore, this study has sought to especially aim for the distinctiveness of SET factors’ affect upon KS.

4. Methodology

4.1 Research stance

This thesis is positioned in the philosophy of positivist research. Accordingly, an instrumental aim of this thesis is to investigate KS as a phenomena and make generalizations which can hold true and predict behavior of individuals in similar organizational contexts. In alignment with the positivist tradition, this thesis follows an objectivist ontology to focus on regularities and relationships drawing from the nexus of the data collection and theory. Fittingly, the epistemology of this thesis influences the authors to limit human bias and promote neutrality in search of objective understandings from the social reality studied (Saunders et al., 2019).

4.2 Research design

4.2.1 A qualitative and abductive approach

This thesis adopts an abductive approach to data collection. An inductive approach was first prioritized, facilitating an exploratory pilot study consisting of 10 interviews. Following a qualitative methodology, this study specifically employed semi-structured interviews which allowed the authors to ask follow-up questions to obtain more holistic understandings of the implications of in-person and virtual seminars on academics' KS. Post-completion of the pilot study, the authors deductively designed and carried out 20 semi-structured interviews which utilized and tested SET in line with the positivist philosophy (Saunders et al., 2019).

4.2.2 Multi-case study

Multiple case studies were utilized for the research strategy. To ensure generalizability, or to ensure that findings could be expected to hold across similar academic organizations, this study sought to interview academics from three Swedish universities and rejected the employability of a single case university (Yin et al., 2018; Saunders et al., 2019). The authors' rationale was further informed by the awareness that the Swedish academic institutions selected had experienced an adaptation to virtual research seminars, and furthermore, that the academic seminar largely exhibited a standardized set of practices and structure.

4.3 Data collection

4.3.1 Interview sample

This study is based on 20 interviews with academic faculty from three Swedish universities. As each stage of an academic career offers unique insights from the varying degree of exposure and expertise, researchers in different stages, ranging from PhD students to full professors, were included (*appendix 1*). This study aspires to cover the highly

internationalized fields of finance, economics, and management within the broader field of business and economics.

A pilot study was initially made consisting of 10 interviews. In line with the abductive approach, these interviews provided insight that subsequently resulted in adjustments—improving the interview design to more effectively capture valuable data. The empirical data gathered from the pilot study is not considered in this thesis.

4.3.2 Interview design

The interview design was primarily guided by key concepts found relevant for KS based on previous literature on SET, including: reciprocity, trust, benefits and costs (Blau, 1964). To examine the extent of knowledge donating and knowledge collecting motivated by SET factors, individual *willingness* to engage in both KS behaviors was inquired about in all interviews (Van Den Hoeff, De Ridder, 2004; Fan, Beh, 2024). Additionally, imperative to answering the research question, interviewees' perception of the influence of both settings (in-person and online) on SET factors and KS was importantly assessed.

In the context of academic seminars, knowledge donating can practically occur by presenting research at seminars, providing feedback, and engaging in discussions. Knowledge collecting can take place when actively listening, posing questions, and receiving knowledge through interaction with others.

4.3.3 Data analysis process

Empirical data was obtained from transcription of recorded interviews. Subsequently, a thematic analysis was conducted, and coding based on observable reiterations, patterns and concepts led to an identification of first-order themes. These themes were thereafter coded in a deductive manner and categorized into second-order themes constituting the core concepts of SET: reciprocity, trust, benefits and costs. Aggregating the empirics in this way offered a fundamental understanding of the collected material and laid the foundation of the finalized model (Saunders et al., 2019).

4.4 Method discussion

Saunders et al., (2019) outline central criteria for qualitative methodologies. As this study is cross-sectional, and participants' behavior is susceptible to change, *transferability* over time is negatively affected. Similarly, *transferability* concerns are frequently directed towards qualitative research using an arguably limited number of cases, further influencing this study to ensure a broad spectrum of individuals were observed, effectively facilitated by three case universities. Enhancing *generalizability* is the capacity of this study to test SET in the context of academic seminars, which can extend theoretical development to similar contexts beyond the specific cases underpinning this study. To ensure *validity*, the authors frequently asked clarifying questions during interviews to consciously ensure accurate understanding and avoidance of misrepresentation (Saunders et al., 2019).

4.5 Ethical considerations

Throughout this study, the authors have abided by the EU's General Data Protection Regulation (GDPR), and as members of the Stockholm School of Economics (SSE), the authors further utilized ethical conduct under SSE policy (Saunders et al., 2019).

All respondents were given detailed input about the research purpose and design via email, and thereafter all interviewees voluntarily communicated their participation intent before the induction of actual interviews. Moreover, irrespective of interview setting (virtual or in-person), all interviews began with the authors informing participants of their rights under GDPR to attain consent, and followingly, the purpose and design of the study was reiterated. The authors thereafter ensured that all interviewees felt secure in seeking clarification regarding their personal data and protections. Following suit, consent was asked for recording interviews for transcription purposes—which was clearly communicated to, understood, and accepted by each participant; and additionally, interviewees were informed that all collected data would permanently be deleted by the completion of the thesis. To ensure zero traceability back to any participant, any specifics regarding the universities, persons, and role titles were removed from the thesis, synchronous to ethical obligations made to all interviewees (Saunders et al., 2019).

5. Empirics

The empirical data has been divided into four higher-order themes, reflecting the theoretical framework. Lower-order themes are closely intertwined with research seminars and to properly showcase the effects of the in-person and virtual format on KS, a setting comparison for each lower-order theme is presented. As seen, all lower-order themes are aggregated into theoretical higher-order themes to which they were deemed to contribute to.

5.1 Reciprocity

5.1.1 Mutual exchange

The majority of interviewees highlighted the necessity for mutual exchanges of knowledge—or reciprocal KS engagement—in seminars to induce KS willingness.

JR2: *“What makes me enjoy [a seminar] is the fact that there is an interaction and not just a unilateral speech from 1 person, because that... is really not the point of what we're doing here.”*

SR2: *“I think it's generally appreciated and noticed if you ask many interesting comments or questions in seminars because it benefits the whole group. It's a learning process, jointly.”*

JR4: *“I'm presenting my 3rd year paper in May, and... I know that after that 1 hour seminar, there would be a lot of super helpful feedback that I have to work on and improve the paper.”*

Notably, a *lack* of reciprocal engagement demotivates individuals' KS willingness, especially since interaction is expected as a norm.

SR3: *“What we learn is how to present and interact. If I'm left to fully talk on my own without any interruption, I think my talk becomes worse.”*

5.1.1.1 Comparison: Mutual exchange

A significant share of interviewees emphasized that the in-person seminar facilitates a greater, more frequent degree of anticipated reciprocal KS engagement compared to virtually, leading them to largely prefer KS face-to-face.

JR13: *“People can be engaged in positive and negative ways [in-person]... I think that you get more questions... maybe they try to trip you up... but at least they have*

some sort of connection whereas I think online [there is] a general sense of disengagement.”

Drawing on the above observation, interviewees detailed that individual willingness to mutually exchange knowledge is lower online due to engagement with the *collective* being lowered.

SR3: *“You're less motivated to participate [online] because it's so flat... The dynamic where you hear somebody ask a question and you're like, ‘oh, you're right. I was thinking about something related. Can we go deeper into that?,’ is very rare to get in an online seminar.”*

Interestingly, interviewees also brought to light the valued contextual opportunities for reciprocal KS engagement in-person, representing opportunity costs for KS virtually.

JR11: *“If this is spot-on your topic... you want to communicate with the speaker a lot more... After the seminar I always see people staying to discuss with the speaker about details in their research... But this doesn't happen in the online seminars.”*

5.1.2 Organizational Support

Several interviewees brought up their research institution as a key actor influencing KS behaviors in a reciprocal way. As revealed, an organization can provide critical incentives for KS via seminars. Top institutions tend to prioritize and invest in seminars to ensure they provide high value to researchers in hopes to, in a reciprocal fashion, facilitate greater KS willingness from attending researchers.

AF1: *“If you're a professor.. you have a pressure if you invite someone... that it's gonna be really rewarding for your people... I would almost call it a... competitive spirit that you wanna be inviting... the most interesting names.. [it's] necessary [that] they know how to do a good seminar... And can take questions, take criticism without having an issue with that... You have to motivate [invitations] from a research standard point of view... [Potential speakers] might have done a lot of great things, but since they're at this university somewhere, it's not interesting enough.”*

In cases of low organizational support for KS, KS engagement is less observed, and thus attending seminars to reciprocate the organization's investment and prioritization of KS is not worthwhile to interviewees.

SR2: *“I think we—not top institutions—underestimate the importance of research seminars and spend far too little effort in making them good. Academic organizations vary a lot in how they value contributions to the joint academic environment... The*

more successful departments value this highly and in those settings, seminars are very valuable. Others don't, and in those settings, seminars often deteriorate to an interaction where someone talks for 45 minutes and the audience asks 2 questions and that's not worth it."

5.1.2.1 Comparison: Organizational Support

Interviewees suggest there is inadequate organizational support from their research institutions in making online seminars run well to provide high incentives for KS, especially considering the difficulty of transitioning towards technological infrastructures.

JR6: *"We are getting used to this virtual world—to give feedback, to put your camera on, how do we moderate it?... there are ways to work better with it, [with] equipment, protocols, cameras, how do we interact?... so why don't we pay more attention to how we run this?"*

More traditionally, some research institutions have established critical organizational support for KS which can only be captured via the hosting of in-person seminars.

JR9: *"PhD students get the opportunity to have lunch or a 1-on-1 [in-person] meeting with the seminar speakers, which is quite rare... in most finance and economics departments all over the world."*

5.1.3 Relationships

A significant share of individuals emphasized the importance of strengthening connections with others through KS during seminars, with these relationships incentivizing KS willingness.

JR12: *"[Building relationships is] very important. I think it's a major part of having this entire seminar circus in the first place."*

JR2: *"Knowledge is not just what we read on books or on papers. It's also what you can get from intertwining opinions. It's beneficial for me, for the others, and it strengthens the bonds... between colleagues. And that is extremely important, because science is... never done alone."*

5.1.3.1 Comparison: Relationships

Respondents were aligned in their preference for the in-person seminar in terms of establishing and improving relationships through KS. Consequently, the degree of KS willingness owing to relational reciprocity is higher in-person.

JR12: *“In-person, you just have a different chemistry and a different interaction. A major reason [for attending seminars] is getting to know the other person [and] that doesn't work well over video... Offline, you make a much better personal connection.”*

In-person seminars also prompt contextual interpersonal interaction drawing from KS which are highly valued by academics.

SR5: *“The offline dimension is important. With my colleagues, we go to a seminar, and... keep discussing even after among us... exchanging knowledge [and] thinking about that paper with a colleague... definitely makes... our relationships better.”*

5.2 Trust

5.2.1 Environment

A recurrent theme was the impact of an environment—characterized by the general atmosphere collectively built by individuals in seminars—on KS. Environments harboring trust positively influences individuals’ KS willingness. Furthermore, affective trust through mutual concern and personable exchange was most-cited to increase KS willingness.

JR4: *“The department makes you feel comfortable [sharing knowledge]... Everybody understands the effort that you've put. They want to give you constructive criticism, but they do keep [your effort] at the back of their heads.”*

Contrarily, an environment characterizing low affective trust and thereby reducing individuals’ KS willingness was regularly evidenced.

JR2: *“[Aggressiveness] definitely affects the sharing of knowledge and the purpose for which we are there... If I see such an environment, it definitely affects my chance to ask questions and fully understand.”*

Though not as heavily cited as affective trust, cognitive trust also increased KS willingness. Particularly, an environment where individuals are trusting of others’ competence incentivizes the sharing of research in various stages of development.

SR5: *“I feel very comfortable presenting [something preliminary] to my colleagues because they know I'm not bullshitting... they trust that it's gonna go somewhere. But in an environment where it's very competitive, I don't get the feedback where I need it*

the most [because] I will only present when my paper is polished to signal to people that I did this great job... Fierce competition... doesn't help me wanting to share knowledge because I don't think I'm gonna get a lot [out] of that."

Low cognitive trust in certain environments, observed through a lack of trust in the appropriate employment of shared knowledge by individuals, lowers KS willingness.

JR6: *"Sharing can give more than it takes. There's a slight risk but you always remember somebody who doesn't contribute... [However] there are some people who can't be trusted... [and] then you probably don't wanna share your ideas... It's like you also expose your weaknesses... It is your innermost research... You don't wanna open up to people you don't trust."*

In some instances, individuals valued environments fostering trust over reciprocity for promoting KS willingness.

JR6: *"Respect is more important than being engaged... some people belittle you or your work.. Even if they don't say anything, you can tell or... they take the conversation to themselves."*

Interestingly, senior researchers indicated that their advancement in academia may have led them to become less impacted by low affective trust in certain environments.

SR2: *"I think [respect] used to be very, very important... as a junior researcher... But today, less so than it used to be... Of course, it's never nice to face a somewhat hostile audience... But I would be less rattled today."*

5.2.1.1 Comparison: Environment

Several respondents share that virtual seminars are underwhelming in their facilitation of a trustful environment as virtual technology limits their assessment of affective trust to encourage their KS willingness. Resultantly, KS willingness is negatively affected by low affective trust virtually, and positively affected by high affective trust in-person.

SR5: *"In-person, just by seeing facial expressions and how [people] stay in the room when they're not talking... you have more room for making a fuller assessment [of respect]... because... out of the blue... I [could] perceive [someone's voice] as aggressive online and think this person hates my work. But that's not necessarily the case."*

SR3: *"People have their camera off... It's very important to get confirmation: 'you're still with me, you've followed my story'... [But] this sense of politeness is not [there*

online]... it's almost like we have this agreement... you should be happy I'm there 10 minutes, and then I'm not there."

Moreover, the accountability for the environment to foster affective trust to support KS is greater in-person.

JR2: *"In a [in-person] seminar room... you have to show respect to the speaker... [whereas online there is] less accountability... for your actions."*

However, better assessments of affective trust in-person can also harm KS willingness in the advent of low interpersonal trust.

JR6: *"In-person you can sense more the silent language, the attitude, the leaving, the interrupting... There's many ways to communicate disrespect and it comes across in-person much more."*

5.2.2 Question-Asking Behavior

Engagement from the audience through asking questions was repeatedly cited to detrimentally impact KS willingness when certain individuals failed to foster mutual concern and respect for others.

SR2: *"There are lots of asking questions for asking questions... of course because it's seen as a valuable activity... [but] it's also the case that some people very much want to be visible in these contexts and ask questions whether they are good or bad."*

SR5: *"Unfortunately, we know that people also ask questions to signal to other people that they are smart... And those questions... are often less helpful... Depending on the motivation...you get a different outcome... [and] that's probably the part about seminars and economics that is a bit the crisis."*

5.2.2.1 Comparison: Question-Asking Behavior

Interestingly, interviewees shared that in-person seminars inclined them to *build* trust through KS and effectively assessing how their question-asking behavior influences others, increasing their KS willingness.

JR13: *"I might be able to be more sensitive to the feeling in the room when I'm presenting a question... so I could adapt it slightly as I'm telling it to try to get that query out there in ways that recognize the advantages that I've had in the position that I'm coming from and the privileges I've had. And I don't think you get that online."*

[In-person] you can immediately feel that the question is table. Do people get it? And then who gets it and the reaction. It's muted [online].”

5.2.3 Power Structures

Power structures in seminars observantly establish low affective trust, influencing especially hierarchically lower researchers, to exhibit lower KS willingness.

JR2: *“The aggressiveness with which some questions are asked and the transparent intention of these people to make the presenter uncomfortable, to criticize just for the sake of criticizing, that happens often. They don't engage for really understanding what that person is saying... Of course, to some extent, it's useful to challenge that person, but the purpose is not to punish that person [or] impose your ego... This happens a lot, especially from old professors... They want to impose their ego a lot. They want to really show to the room that they are the best.”*

SR4: *“There are a lot of power dynamics in seminars... Sometimes that power dynamic is about seniority. I've been in seminars where the only people talking were professors, and the only people being silent were PhD students or junior faculty. I don't feel like that's a healthy environment. I think that seminars should be places where anyone can ask questions, but senior people have to be careful not to make their voices too loud so they end up suppressing other people's voices before they've even been raised. As I have become more senior, that's something that... I'm aware of: if I ask a question, and I wanna talk more or ask a follow-up, I might not do so.”*

JR6: *“You would not go and critique certain persons... and that's [what] seminars are about. You give constructive critique... So there's that hierarchy... even for those seniors who are open [and] who want to get that, but not everybody does it... Not everybody can engage equally freely.”*

5.2.3.1 Comparison: Power Structures

Respondents reasoned that virtual seminars may intensify power structures due to technology lowering accountability.

SR4: *“In-person, you can see people... gesture or communicate in an implicit way for someone to be quiet. But online... everyone else is muted, so you could just go on and on, and the space might be taken up by people who don't really reflect on how much space they're taking up.”*

5.3 Costs

3 anticipated costs which lower KS willingness were identified—*image concerns*, *generic time and effort*, and the impact on *others' time and effort*.

Firstly, a significant share of interviewees express a fear of appearing unintelligent and show high concern for how others perceive them, and thus anticipated *image concerns* lower KS willingness.

SR3: “*You are highly aware of what people think about your abilities when you ask a question.*”

JR1: “*The ideal... is that you should feel very free to ask questions, but I don't think that is the... actual practice of it... You want to ask the kind of question that really adds to the seminar... and sometimes it's difficult to know if your question is marginal or more of a substantial nature.*”

However, the presence of affective trust can reduce image concerns.

JR4: “*if you have a question in mind... It's not like, oh, it's a person you have to ask a smart question to... it's okay if you're not understanding anything, and it's fine to ask that.*”

Comparatively, the presence of other researchers may feel less palpable online, lowering *image concerns*, and encouraging KS willingness.

SR5: “*Online... because you don't have to face these people... you might feel more comfortable asking questions because you don't internalize this dimension so much that when I'm asking questions, it's not just about the presenter, but also about all the other people around who are listening to what I'm asking.*”

However, interviewees contradicted this protection mechanism virtually by reasoning that image concerns are heightened from being unable to fluently engage or assess others' perceptions behind a screen.

JR1: “*[Online], the barrier is even higher... I feel that I would really need a substantial comment... and not a marginal one for some reason... [since] you have to... interrupt abruptly, and... there's not this fluent thing around it.*”

In the empirical data, another prevalent cost lowering KS willingness arises when individuals feel like seminars have low value respective to their *time and effort*.

JR9: *"I do have a dilemma... the invited speakers are usually not in my field so I'm less inclined to participate in the seminars. The help is limited because I have to spend a lot of time understanding what you are going to talk about... So I will attend... 20% of the seminars."*

AF1: *"We have a lot of seminars... [and attendance] is supposed to be the norm... But that is also a lot of people's time that is spent... and [they're] stressed out, and [have] a deadline... It's also one of the reasons that we have discussed to... have a bit fewer seminars... People's engagement in the seminars needs to be in place."*

Several interviewees emphasize the flexibility of online seminars, allowing researchers to efficiently allocate their *time and effort* compared to the in-person seminar.

JR2: *"In an online research seminar. I just leave if I'm not interested at some point... [But] In a live seminar... it's way more rigid."*

Lastly, several academics factor in the impact their KS has upon *others' time*, ultimately negatively influencing their KS willingness if they resultantly perceive an improper usage of others' time.

JR7: *"If I thought the question would be wasting people's time... I wouldn't want to get them to explain it to me."*

Ultimately, the ability to conduct an analysis of one's impact upon others through KS is determined to be easier in-person, comparatively reducing KS willingness online when one cannot assess others' perceptions.

JR7: *"Sometimes when you're asking questions, you're not just asking for yourself. You're asking to improve everyone's experience in the seminar. [Virtually], you don't see everyone else... so you may be more worried that you ask a question, then it's wasting people's time and therefore wasting the speaker's time, whereas you get a better sense of that [in-person]."*

5.4 Benefits

5 benefits anticipated from engaging in KS at seminars were identified by the interviewees—*reputation, feedback, broadened perspective, greater reach, and enjoyment*.

As JR7 highlights, the benefit of *reputation* leads interviewees to largely favor in-person seminars due to far more anticipated personalized encounters from presenting in-person.

JR7: *“You go give a presentation somewhere, and... meet [researchers] in a work-stroke social sense... you build your connection with a broader set of colleagues. That's something you don't do quite as much through Zoom because you don't have as much of those side of things... So I think that's a key way of hopefully building your reputation.”*

Notably less personalized interactions online compared to in-person also leave interviewees unsatisfied with *reputation-building* online.

JR12: *“They barely remember me [online], it seems. So in-person just makes a stronger impression and you remember the person more.”*

The *broadening* of one's academic skill-set is further highlighted by interviewees as an important advantage of engaging in KS at seminars.

JR5: *“I think [seminars] are an important aspect of the academic life if you wanna be in touch [with the] type of research that has been done in academia [and] the reality of research.”*

JR4: *“I find it very useful to attend all the seminars... To... send [my] paper into the journals... I can only do so if I had that broader picture, which I cannot... do... just by myself and my co-author and my supervisors.”*

However, the benefit of *broadened perspective* is reduced in virtual seminars due to lower reciprocal KS engagement online than face-to-face, and thus, KS willingness is better maintained during in-person seminars.

JR1: *“You learn less from the [less] questions that others pose [since] you'd also not get to hear the answers from the researchers. That benefit is really quite lost at the virtual seminars.”*

Similarly, the most cited benefit, *feedback*, is largely amplified in the face-to-face setting, leading interviewees to prefer in-person seminars.

JR13: *“I get better feedback from in-person seminars than online seminars. I think that the discussions are better... They're more organic and fluid. Online, it's typically a little bit more static, or fragmented, and people can disengage.”*

However, academics working in more specialized areas than their most proximal colleagues often indicated the increased benefit of accessing more specific and useful *feedback* online.

JR6: *“In the end—if the person who is able to comment on my paper is in Australia and... is rude... but the things he or she says to me are good, I don't care... if you can*

save me a person who is somewhere in Australia mumbling with [a] picture breaking but he can help me... that is valuable for me to make a better paper."

Though in-person seminars generally amplify *reputation*, *feedback*, and *broadened perspective*, the online seminar interestingly amplifies the benefits of *enjoyment* and *greater reach*.

Beginning with *enjoyment*, interviewees shared that online seminars were more worthwhile for their enjoyment due to their research focus, serving as stronger motivation for KS willingness.

SR1: *"[Online] I choose the ones that I'm very interested in. In-person seminars are typically not that interesting... We have to attend in-person seminars because that's... like a public good that we provide the whole department [so] I have no choice... But now we have different types of selection."*

Enjoyment from the audience's end also influences interviewees' motivation to present, and online seminars can nurture this relationship to a higher degree.

JR12: *"I'm attending one online seminar series regularly that is exactly always on a topic in my area of research... [online] there are only people in the audience who are actually interested in the topic. That is an advantage. And, therefore, I [also] don't feel forced to attempt to create a crowd [when I am presenting] because there's naturally always someone interested in being there or enough people."*

With respect to the benefit of *greater reach* and the increased access or spread of academic work through seminars, interviewees identify a clear edge to virtual over in-person seminars.

SR2: *"Online seminars democratized high profile talks...because it made it easier to get access to talks by top people... So that I think is a clear benefit."*

Interestingly, an advantage to spread research and engage in KS through online seminars with valued individuals was highlighted as an advantage specifically catering to junior researchers.

JR9: *"Especially for junior researchers... [the] remote option provides a better accessibility or less cost for senior researchers to participate in my seminars... they don't have to bother [to] come all the way to my seminar... because that's less beneficial for them... I would say the remote options will benefit especially junior researchers for spreading their thoughts and research."*

Despite the benefit of *greater reach* being amplified virtually and motivating KS willingness, some academics are skeptical on the returns to KS online due to low reciprocal engagement online.

SR3: *“Having more people around the world being able to attend is very good in theory, but in practice, I become very doubtful because I don't know what you really get out of it if you just listen in. On one hand, it's much easier to attend very prestigious seminars... but they're still not allowed to ask questions... [So] the marginal benefit of attending might be very small.”*

Broadly, the empirics reveal that though both settings do not differ in the academic benefits or costs retrieved from KS, in-person seminars effectively amplify the benefits of *reputation*, *feedback*, and *broadened perspective*; while, KS costs—*image concerns*, *time and effort*, and *impact on others' time and effort*—are typically noted to increase virtually. As highlighted by SR2 and JR13,

SR2: *“While I have a strong preference for... one setting versus the other, I don't think that the academic benefits are necessarily that different.”*

JR12: *“I think that it is probably the... benefits... that are magnified in face-to-face settings.”*

6. Analysis

6.1 Reciprocity

Blau (1964) highlights reciprocity as a central pillar of SET. Numerous authors have since made significant contributions to existing literature by correspondingly finding that reciprocity significantly impacts KS behavior (Bock, et al., 2005; Lin et al., 2009; Nguyen et al., 2021). These assumptions are clearly affirmed by the findings of this study. For most interviewees, reciprocity did impact KS, such that a higher degree of reciprocity increased their willingness to collect or donate knowledge.

As observed by the lower-order themes of reciprocity—interviewees express a desire for the *mutual exchange* of knowledge *and* to grow *relationships* through sharing knowledge at seminars. In this way, the empirical data suggests that respondents value both, distinctly different, characterizations of reciprocity found in previous literature—reciprocity as a norm *and* reciprocity as a relationship (Sun, et al., 2014). Conditional on a perceived ability to successfully capture reciprocity in both ways, KS willingness is increased. The reciprocal principle of SET (Blau, 1964) is further affirmed when observing the relationship between reciprocity and KS under the contextual influence of the in-person and virtual seminar.

Generally, multi-directional engagement is emphasized by respondents as a fundamental aspect of seminars, and this is particularly lacking virtually. Given that back-and-forth interaction between the presenter and attendees is less seamless with respect to the online format, it becomes more difficult for researchers to reciprocate each other's efforts by either collecting knowledge (e.g. by asking questions to a presenter) or donating knowledge (i.e. by contributing to discussions), which demotivates and ultimately decreases engagement. Effectively, the less established norms of reciprocity in virtual environments entails a lower degree of KS.

As previously concluded, many respondents express a desire to develop relationships through KS and are, therefore, more willing to share knowledge if they believe the seminar facilitates their ability to improve and maintain relationships. As individuals experience the atmosphere as more natural and see more opportunities for personalized KS exchanges in-person, they are more inclined to establish reciprocal relationships and share knowledge in-person. The formation and maintenance of these relationships bring about a valuable and heightened exchange of knowledge between researchers.

In addition to norms and relationships, organizational support has been characterized in previous literature as a form of reciprocity (Bartol et al. 2009). The exchange relationship between interviewees and their respective research institution was found to influence KS willingness in the seminar context, particularly determined by the investment and appreciation shown by the research institution for its members' KS contribution—consistent with Lu et al. (2006), Bartol et al. (2009), Witherspoon et al. (2013), and Chung, Anh (2022),

who all blossom on the notion of organizational support specifically *for* KS (King, Marks, 2008; Choi, et al. 2022). The empirical material further reveals that accomplished research institutions seem to highly recognize the value of KS among researchers as they invest to incentivize seminar attendance by, for instance, inviting high quality speakers. KS was found to be higher within institutions that provide requested resources, as respondents feel like their KS contribution is appreciated and reciprocate back through increased seminar engagement (Kim, et al. 2013). Considering that *organizational support* acts as a driving force of reciprocity, which in turn fosters KS—the empirical data conform to SET (Choi, et al., 2022).

Initiatives of organizational support are seemingly more prevailing in-person. Furthermore, the in-person setting provides organizations with possible approaches to incentivize researchers' seminar engagement in ways that are impractical to implement online (e.g. offering dinners with invited speakers). Moreover, there appears to be an underwhelming understanding and investment towards the organizational support needed to underpin researchers' adaptation to the technological infrastructure or to establish satisfactory moderation of online seminars that motivates individuals to participate. As respondents perceive that research institutions support virtual KS to a lesser extent, their willingness to share knowledge is comparatively lower.

6.2 Trust

The empirics strongly indicate that the academic seminar represents an ideal space for KS, yet affective and cognitive trust act as integral factors affecting interviewees' KS willingness (Holste, Fields, 2010; Jain et al., 2015; Jinyang et al., 2015). Such findings hold to the foundational role of trust in social exchanges (Blau, 1946). Moreover, affective trust was most emphasized for affecting KS willingness. Meaning, individuals were more likely to engage in KS based on higher degrees of mutual concern, respect, or emotional ties between seminar participants (Jain et al., 2015). Furthermore, the primary importance of trust aligns with previous studies utilizing SET to investigate KS in academia (Annansingh et al., 2018; Chung, Anh, 2022; Mutahar et al., 2022).

The empirics extensively reflect that an *environment* motivating KS willingness nurtures a high degree of affective trust; and subsequently, that lower degrees of affective trust result in much lower KS willingness (Chowdhury, 2005; Liao, 2008; Tsai et al., 2012; Rutten et al., 2016; Chung, Anh, 2022). In certain instances, trust was distinguished as more important than reciprocity for inducing KS willingness. This finding is not clearly outlined by Blau (1964), who—when discussing the relationship between trust and reciprocity—specifically distinguished that reciprocity builds trust between individuals engaging in KS through creating reliable expectations for *mutual exchanges* of knowledge. Though this study does not challenge Blau's (1964) conceptualization, given that respondents were more motivated to engage in KS in-person due to the expectation of a *mutual exchange* of knowledge, this study provides additional insight suggesting that affective trust must be anticipated by individuals to engage in KS preliminary to valuing reciprocity. Interestingly, there was

indication that as researchers rise in hierarchy, lower affective trust in seminar environments may not influence KS willingness as strongly. Such findings are supported by Hosen et al. (2022), who found that more experienced and confident academics find trust less important for KS.

Question-asking behavior during seminars further emboldened the importance of affective trust on KS through showcasing how individualistic or opportunistic engagement-behavior of participants during seminars lowers KS willingness (Annansingh et al., 2018). This finding leads into the third empirical theme, where various participants shed light on *power structures* within seminars which fail to nurture affective trust and consequently lead to much lower KS willingness; most especially for participants in positions of traditionally lower power-holding positions—such as women or junior researchers. Particularly, a seeming correlation between seniority and opportunistic behavior, lowered affective trust and equal KS in seminars across all fields interviewed (Tsai et al., 2012).

Cognitive trust was also observed to affect KS. As Mohammed and Kamalanabhan (2020) detail, cognitive trust is built upon the confidence individuals have on the expertise of others. Thus, it becomes clear that in competitive seminar *environments*, lowered cognitive trust stems from a lack of willingness to engage in reciprocal KS with perceivably less polished and therefore less beneficial work (Jain et al., 2015). However, at the Swedish institutions interviewed, no individuals felt exposure to opportunistic environments existed at their current institutions and therefore believed that some risk to KS was acceptable given the outweighing gains expected. Following Annansingh et al. (2018), trust requires the willingness to be accepting of KS risks in the increasingly collaborative academic setting. Thus, this study suggests that in less-competitive academic environments which foster high levels of affective trust, cognitive trust is evaluated less consciously by interviewees when determining their KS willingness; and therefore affective trust reduces the propensity of knowledge hoarding in seminars.

The key understanding for trust on KS under different contextual settings is that interviewees are equipped to make a fuller assessment of affective trust during in-person seminars, and resultantly, their KS willingness increases from more accurately anticipating whether an *environment* or individual's *question-asking* behavior promotes affective trust. Fuller assessments of trust reduce complexities and thereby improve KS (Blau, 1964). A lack thereof to make reliable assessment of affective trust in virtual seminars can make individuals more susceptible to uncertainty and vulnerability, lowering KS willingness (Jinyang, 2015). Rutten et al. (2016) provide a general explanation for this observation in that online channels for KS such as VCT are depersonalized, which can complicate social interactions by inducing mistrust, as SR5's quote effectively underscores. Moreover, technology-mediated KS is exposed to fewer personal emotions, undermining affective trust which is inherently built on emotions (Holste, Fields, 2010; Kipkosgei et al., 2020). Notably still, a fuller assessment of trust in-person can entail its own consequences, where clear and directly disrespectful

question-asking behavior, *power structures*, or *environments* are heightened in-person, lowering affective trust, and therefore reducing KS willingness to a great extent.

Interestingly, the ability to make a fuller assessment in in-person seminars of one's *own* influence on building and maintaining affective trust through KS is another advantage highlighted for motivating KS willingness. This finding is supported by Kipkosgei et al. (2020), who suggest that KS effectively builds trust and nurtures long-lasting social exchanges. A final comparison relates to *power structures*. Though power structures are inherently present in-person and negatively influence KS willingness, online seminars can further inhibit KS willingness owing to power structures by reducing the social costs for individuals who disproportionately take up space in seminars, falling short to in-person seminars which can prompt more collective efforts to promote trust and KS towards a better direction.

6.3 Costs and Benefits

The understanding that costs and benefits are evaluated as decisive factors influencing KS willingness according to SET remains true in the context of research seminars (Blau, 1964; Bordia et al., 2006; Wang, Noe, 2010; Fan, Beh, 2024).

Time and effort and *image concerns* were identified as KS costs at research seminars, similar to various other organizational contexts (Sedighi et al., 2017; Zhang, Liu, 2021; Zhao, Detlor, 2021; Fan, Beh, 2024). Interestingly, trust has the ability to reduce costs and increase KS. For instance, *image concerns* are alleviated by affect-based trust, where perceptions of mutual care increase engagement. Notably, such emotionally-influenced trust translates better in-person versus online; and generally, virtual seminars heighten the degree of all anticipated costs specific to KS. For instance, the cost of wasting *others' time and effort* deterring one's KS willingness increased due to overestimations of how one's KS would negatively influence others online.

Respondents mention KS benefits prominently found in previous literature—namely *reputation*, *enjoyment*, *broadened perspective*, and *feedback* (Kankanhalli, 2005; Wasko, Faraj, 2005; Sedighi et al., 2017; Zhang, Liu, 2021; Zhao, Detlor, 2021; Chung, Anh, 2022). While the empirical data is supportive of online seminars for promoting KS with respect to a few benefits (e.g. *greater reach*), there is seemingly no support for virtual seminars in terms of retrieving benefits inherently requiring reciprocal exchange (e.g. *broadened perspective* and *feedback*). Interestingly, *broadened perspective* and *feedback* are both naturally benefits one would expect to increase from *greater reach*.

Though *greater reach*—or the greater spread or access to academic work—is significantly bolstered through online seminars, the lack of reciprocal exchange can undermine the marginal benefit of *greater reach* alone for motivating KS willingness. Furthermore, the norm of reciprocity is positively interrelated with *broadened perspective* and *feedback*, and thus, KS motivated by these benefits is higher in-person where *mutual exchanges* of

knowledge are greater. Similarly, *reputation* is positively interrelated with relational reciprocity and KS motivated by reputation-enhancement is supported more evidently in-person from heightened relational reciprocity.

However, nuances are present to how virtual seminars increase benefits. Markedly, heightened *enjoyment* in virtual seminars through a better alignment of personal research interests motivates KS willingness. Similarly, *feedback* received virtually from people more closely aligned with one's research area increases KS willingness. Markedly, *greater reach* through online seminars symbolized the democratization of knowledge between researchers and institutions internationally. Thus, academics recognize the advantages of online seminars for expanding KS with researchers beyond their proximity to improve the reward of certain benefits.

Markedly, the investigation of costs and benefits reveals that virtual seminars do present certain unique advantages to alleviating costs which are not replicable in-person. For instance, respondents mention how the online setting allows individuals to more comfortably ask questions more anonymously behind a screen or more easily leave a seminar; and similarly for benefits, greater reach increases via the online seminars by increasing audiences. However, the nature of such advantages are not necessarily advantages for KS. On the collective level, these virtual "advantages" reduce multi-directional KS, and thereby amplify costs or reduce benefits for the collective. In practice, the significant limitation of the online seminar to enable seminar attendees and presenters to reap reciprocal benefits and enjoy the "rewards" of KS decreases KS willingness online compared to in-person, which can explain why individuals are often unsatisfied with the online seminars.

7. Discussion and Conclusion

7.1 Answer to Research Question

This study has unfolded in recognition of the novelty of the widespread introduction of virtual technology into academia—specifically, this study sought to investigate the research seminar, which bears the epitome of KS to answer: “*How do virtual and in-person research seminars affect KS?*”

Each setting was found to uniquely influence KS by affecting SET factors. KS is highly favored and proves more fruitful in-person as this setting most optimally promotes reciprocity or multi-directional knowledge sharing. Intriguingly, though academia at large may be inhibited by individualism, research seminars foster collectivist ideals, most effectively highlighted by the importance academics give to relational reciprocity. Similarly, the in-person setting heightens affective trust, increasing KS willingness. Meanwhile, a lower ability to fully assess affective trust online reduces KS willingness. Additionally, costs and benefits of KS which respectively decreased or increased KS willingness did not differ between in-person and online seminars, however, the in-person setting amplified the large majority of benefits derived, while all costs were instead heightened online.

Though SET factors were more pronounced to support KS in-person, the answer to the research question cannot simply be deduced to proposing in-person seminars as the overwhelming “winner” for facilitating KS. Interestingly, it was observed that organizational support for *virtual* KS is largely lacking. There seems to be an omnipresent dilemma amongst research institutions regarding how to efficiently incentivize KS via virtual solutions, but not enough consensus on fixing this issue. Virtual seminars show potential for increasing *enjoyment, feedback, and greater reach*, highlighting the demand for collaboration beyond academics’ proximity and tailored to individual needs which in-person seminars are unable to fulfill. This underscores the potential of virtual seminars to strengthen KS willingness. While the virtual seminar does not serve as a substitute for the in-person seminar, as a complement, it can certainly be improved to fully capture its advantages for KS.

7.2 Contributions to Literature

Within the overlooked field of KS research in academia, this thesis occupies a unique position by specifically examining how KS manifests within research seminar settings, a topic that remains underexplored in existing literature (Fan, Beh, 2023). Furthermore, through a comparison of traditional, in-person seminars and recently emerged virtual options, this study offers new insights into KS in the contemporary academic landscape. Thus, this research not only bridges a substantial gap in existing research but also advances the discourse on how digitalized solutions affect the practices and objectives of academia.

Central to this study is the application of Social Exchange Theory (SET). Seeing as the theory dates back to Blau (1964), and has since been widely applied to KS research in markedly

varied and unique ways, there has naturally been a very broad conceptualization of core concepts of the theory—one of them being reciprocity (Sun et al., 2014). Considering the dispersed theoretical conceptualizations of reciprocity, as encouraged by Sun et al. (2014), this study contributes to clarifying the ambiguity of the concept by more precisely distinguishing between the different types of reciprocity and their influence on KS. Moreover, organizational support was not included in Blau's (1964) conceptual structure for reciprocity, yet still, it is revealed by this study as an important aspect of reciprocity, aligning with more recent and emerging literature identifying organizational support as a determining factor for KS (Lu et al., 2006; Witherspoon et al., 2013; Chung, Anh, 2022).

Costs and benefits are also broadly conceptualized in previous literature. Through a qualitative approach, this study refines existing, mainly quantitative, literature by uncovering nuances of costs and benefits of KS in academic seminars (Wang, Noe, 2010; Sedighi et al., 2017). SET—as outlined by Blau (1964)—emphasizes the self-interested nature of costs and benefits, however this study uncovers that individuals' assessment may not be limited to self-interest, as interviewees rationally assess how sharing knowledge would impact *others' time and effort*, where a heightened cost upon others reduces KS willingness. Therefore, a rational evaluation of costs and benefits may not be limited to self-interest and the theoretical foundation of SET—originally based on economic exchange—may be critiqued for investigating KS. Such theoretical findings are nascent, but align with few scholars (Bordia et al., 2021; Zhang, Liu, 2021).

7.3 Limitations

The empirical data considered in this study was primarily collected, and later analyzed, in a deductive manner—facilitated by the interview guide that reflected, and tested, the theory's assumptions. While the premises and assumptions of SET hold true in the context of academic seminars and resultantly enriched conclusions outlining the effects of in-person and virtual settings, there is a risk that unobserved complexities and aspects affecting KS are unconsidered by this study. Additionally, since this study utilized KS willingness provided its high employment in previous KS literature to study KS, a potential limitation characterizes that intent may not always coincide with behavior (Fan, Beh, 2024).

Moreover, though multi-case studies were employed to strengthen the transferability of results, the cross-sectional design of this study likely hinders this goal to remain true across time provided that the adoption and development of virtual seminars still occur and, thus, perceptions about virtual and in-person settings can expectedly change (Yin et al., 2018; Saunders et al., 2019).

7.4 Suggestions for Future Research

Future research should seek to advance the nascent literature on KS within academia (Fan, Beh, 2024). Particularly, advancements in technological integration within the academy are a contemporary phenomenon left underexplored. Taking KS for granted is conducive to

ignoring the acceleration of scientific collaboration which may otherwise benefit in light of theoretical underpinnings on how KS willingness is affected.

Executive summary

The findings of this study are valuable for both universities' management and individual researchers. Practical implications drawing from this study's underpinnings are particularly valuable considering the central role that knowledge sharing at research seminars has in impacting every researcher's career. By understanding how each setting influences KS, research institutions can leverage insights from this study to refine their strategies for organizing virtual and traditional seminars. Understanding how in-person and virtual seminar formats influence KS can also have implications for individual researchers, who may alter their knowledge sharing behavior to better facilitate knowledge sharing in research seminars.

A critical implication for managers is to prioritize organizational support for incentivizing academics' knowledge sharing. Particularly, more proactive support at the departmental level is needed for knowledge sharing activities such as the research seminar. Currently, however, there is not enough consensus on supporting knowledge sharing in virtual formats, leading to dilemmas on the moderation, length, and other ways to better facilitate interaction between participants and incentivize knowledge sharing online. Therefore, this study emphasizes the need for managers to realize the criticalness of attracting coordinated efforts to foster more seamless knowledge sharing in virtual seminars. A lack of focused efforts by university management effectively works against virtual seminars and their potential as complements to the in-person seminar. Institutions should therefore test more creative ways to run virtual seminars to encourage mutual exchanges of knowledge and collect feedback.

Moreover, this study underscores the importance for upper management in academic institutions to foster trust in seminar environments to nurture knowledge sharing amongst all members. Establishing a code of conduct and norms for engagement—such as having cameras on or ensuring that individuals do not feel that they are disruptive when speaking online—can foster affective trust and personalize the seminar online. Low cognitive trust was also recognized as being particularly negative in influencing knowledge sharing in competitive environments, and therefore managers should emphasize the expertise of all academics—especially for knowledge sharing during the seminar.

Managers should also strive to maximize benefits—especially online since many benefits positively interrelated with reciprocity were lacking—and minimize costs to knowledge sharing in seminars. As an example, the cost of academics' *time and effort* from engaging in knowledge sharing at academic seminars was discussed as a significant factor which lowered knowledge sharing willingness. The academic seminar typically occurs on a weekly basis, however, the frequency of seminars and a lack of alignment with researchers' interests, especially as they become more senior, can be a particular problem for knowledge sharing. Therefore this study proposes that some academic institutions should think more critically about the frequency of their seminars, the diversity of topics, as well as the diversity in how the seminar is arranged. Perhaps novel and more creative methods for encouraging knowledge sharing at seminars may be considered by managers.

Bibliography

- Abbas, Khalid, et al. "Systematic analysis of the factors that impact upon the mindset of knowledge sharing behaviour (KSB) for individuals within Academia." *Administrative Sciences*, vol. 13, no. 7, 6 July 2023, p. 161, <https://doi.org/10.3390/admsci13070161>.
- Addae, David, and Olivia A. Kwapong. "Phd students' perceptions of research seminars in doctoral education: A case study." *Cogent Education*, vol. 10, no. 1, 27 Feb. 2023, <https://doi.org/10.1080/2331186x.2023.2183701>.
- Al-Kurdi, Osama, et al. "Knowledge sharing in higher education institutions: A systematic review." *Journal of Enterprise Information Management*, vol. 31, no. 2, 5 Mar. 2018, pp. 226–246, <https://doi.org/10.1108/jeim-09-2017-0129>.
- Al Kurdi, Osama, et al. "Knowledge sharing culture in higher education: Critical literature review." *Higher Education in the Twenty-First Century II*, 29 Oct. 2015, pp. 83–96, <https://doi.org/10.1201/b19335-9>.
- Annansingh, Fenio, et al. "Academics' perception of knowledge sharing in higher education." *International Journal of Educational Management*, vol. 32, no. 6, 13 Aug. 2018, pp. 1001–1015, <https://doi.org/10.1108/ijem-07-2016-0153>.
- Bartol, Kathryn M., et al. "Social Exchange and knowledge sharing among knowledge workers: The moderating role of perceived job security." *Management and Organization Review*, vol. 5, no. 2, July 2009, pp. 223–240, <https://doi.org/10.1111/j.1740-8784.2009.00146.x>.
- Blau, P. M. (1964). *Exchange and power in social life*. New York: Wiley.
- Bordia, Prashant, et al. "Differences in sharing knowledge interpersonally and via databases: The Role of Evaluation Apprehension and perceived benefits." *European Journal of Work and Organizational Psychology*, vol. 15, no. 3, Sept. 2006, pp. 262–280, <https://doi.org/10.1080/13594320500417784>.
- Bollinger, Audrey S., and Robert D. Smith. "Managing organizational knowledge as a strategic asset." *Journal of Knowledge Management*, vol. 5, no. 1, 1 Mar. 2001, pp. 8–18, <https://doi.org/10.1108/13673270110384365>.
- Björck, C., & Lindgren, M. (August 2023). *Potentials and Challenges in Redesigning Traditional Text Seminars in Doctoral Education in Sweden*. <https://utdanningogpraksis.no/index.php/up/article/view/3630/8969>

- Buckley, Sheryl. "Higher education and knowledge sharing: From Ivory Tower to twenty-first century." *Innovations in Education and Teaching International*, vol. 49, no. 3, Aug. 2012, pp. 333–344, <https://doi.org/10.1080/14703297.2012.703015>.
- Carter, A., Croft, A., Lukas, D., & Sandstrom, G. (November 2017). *Women's visibility in academic seminars: women ask fewer questions than men*. <https://arxiv.org/abs/1711.10985>
- Chai, Das, & Rao. (2011). Factors affecting bloggers' knowledge sharing: An investigation across gender. *Journal of Management Information Systems*
- Chen W, Zhu X, Sun S, Liao S and Guo Z (2021) The Impact of Employees' Psychological Capital on Innovative Work Behavior: The Chain Mediating Effect of Knowledge Donating and Knowledge Collecting. *Front. Psychol.* 12:761399. doi: 10.3389/fpsyg.2021.761399
- Choi, Sue Young, et al. "The effects of socio-technical enablers on knowledge sharing: An exploratory examination." *Journal of Information Science*, vol. 34, no. 5, 3 Apr. 2008, pp. 742–754, <https://doi.org/10.1177/0165551507087710>.
- Chen, Weijing, et al. "The impact of employees' psychological capital on Innovative work behavior: The chain mediating effect of knowledge donating and knowledge collecting." *Frontiers in Psychology*, vol. 12, 14 Dec. 2021, <https://doi.org/10.3389/fpsyg.2021.761399>.
- Cheung, & Lee. (2013). Understanding the continuance intention of knowledge sharing in online communities of practice through the post-knowledge-sharing evaluation processes. *Journal of the American Society for Information Science and Technology*
- Choi, W., Goo, W., & Choi, Y. (2022). Perceived Organizational Support and Knowledge Sharing: A Moderated-Mediation Approach
- Chowdhury, Sanjib. "The Role of Affect- and Cognition-Based Trust in Complex Knowledge Sharing." *Journal of Managerial Issues*, vol. 17, no. 3, 2005, pp. 310–26. JSTOR, <http://www.jstor.org/stable/40604504>. Accessed 16 Apr. 2024.
- Chung, Du Thi, and Pham Thi Tram Anh. "Factors affecting knowledge sharing behaviour in public higher education institutions: An empirical study of vietnam." *Cogent Business & Management*, vol. 9, no. 1, 8 Dec. 2022, <https://doi.org/10.1080/23311975.2022.2155002>.
- Cropanzano, Russell, and Marie S. Mitchell. "Social Exchange theory: An interdisciplinary review." *Journal of Management*, vol. 31, no. 6, Dec. 2005, pp. 874–900, <https://doi.org/10.1177/0149206305279602>.

- Deanna, Rocío, and Chelsea Pretz. “*The flourishing of virtual seminars: Strengthening the globalization of research through sol seminars online.*” *TAXON*, vol. 69, no. 6, Dec. 2020, pp. 1410–1412, <https://doi.org/10.1002/tax.12412>.
- Dezdar, Shahin. “Promoting knowledge sharing in academic environments using non-monetary factors.” *Library Review*, vol. 66, no. 8/9, 27 Oct. 2017, pp. 595–611, <https://doi.org/10.1108/lr-11-2016-0092>.
- Dysvik, Anders, et al. “Knowledge donating and knowledge collecting.” *Leadership & Organization Development Journal*, vol. 36, no. 1, 2 Mar. 2015, pp. 35–53, <https://doi.org/10.1108/lodj-11-2012-0145>.
- Fan, Zhenyu, and Loo-See Beh. “Knowledge sharing among academics in Higher Education: A systematic literature review and future agenda.” *Educational Research Review*, vol. 42, Feb. 2024, p. 100573, <https://doi.org/10.1016/j.edurev.2023.100573>.
- Febria, Catherine M., et al. “Early career researchers benefit from inclusive, diverse and international collaborations: Changing How Academic Institutions utilize the Seminar Series.” *Journal of Great Lakes Research*, vol. 48, no. 3, June 2022, pp. 849–855, <https://doi.org/10.1016/j.jglr.2022.03.017>.
- Freeze, Ronald D., and Uday Kulkarni. “Knowledge management capability: Defining knowledge assets.” *Journal of Knowledge Management*, vol. 11, no. 6, 30 Oct. 2007, pp. 94–109, <https://doi.org/10.1108/13673270710832190>.
- Hardy, Anne, and Tamara Young. “Online connections: Designing Virtual Seminars for academic knowledge transfer.” *Tourism and Hospitality Research*, 9 Nov. 2023, <https://doi.org/10.1177/14673584231213217>.
- Hew, Khe Foon, and Noriko Hara. “Knowledge sharing in online environments: A qualitative case study.” *Journal of the American Society for Information Science and Technology*, vol. 58, no. 14, Dec. 2007, pp. 2310–2324, <https://doi.org/10.1002/asi.20698>.
- Herstedt, Ulrika. “Report: Uncertainty – a Reality for Junior Researchers in Sweden.” *SULF*, 3 Mar. 2021, sulf.se/en/news-en/report-uncertainty-a-reality-for-junior-researchers-in-sweden/.
- Holste, J. Scott, and Dail Fields. “Trust and tacit knowledge sharing and use.” *Journal of Knowledge Management*, vol. 14, no. 1, 23 Feb. 2010, pp. 128–140, <https://doi.org/10.1108/13673271011015615>.
- Hosen, Mosharrof, et al. “Knowledge sharing behavior among academics: Insights from theory of planned behavior, perceived trust and organizational climate.” *Journal of Knowledge Management*, vol. 27, no. 6, 3 Nov. 2022, pp. 1740–1764, <https://doi.org/10.1108/jkm-02-2022-0140>.

- Ibrahim, Samar, and Khaled Shaalan. "A systematic review of Knowledge Management Integration in higher educational institution with an emphasis on a blended learning environment." *International Conference on Information Systems and Intelligent Applications*, 23 Oct. 2022, pp. 319–339, https://doi.org/10.1007/978-3-031-16865-9_25.
- Islam, Talat, et al. "Unleashing the mechanism between affect-based trust and employee creativity: A knowledge sharing perspective." *Global Knowledge, Memory and Communication*, vol. 71, no. 6/7, 3 Sept. 2021, pp. 509–528, <https://doi.org/10.1108/gkmc-04-2021-0071>.
- Jain, Kamal Kishore, et al. "Organizational climate, trust and knowledge sharing: Insights from Malaysia." *Journal of Asia Business Studies*, vol. 9, no. 1, 5 Jan. 2015, pp. 54–77, <https://doi.org/10.1108/jabs-07-2013-0040>.
- Jin, Zhou, Lee, & Cheung. (2013). Why users keep answering questions in online question answering communities: A theoretical and empirical investigation. *International Journal of Information Management*.
- Jinyang, Li. "Knowledge sharing in virtual communities: A Social Exchange Theory Perspective." *Journal of Industrial Engineering and Management*, vol. 8, no. 1, 18 Mar. 2015, <https://doi.org/10.3926/jiem.1389>.
- Karlsohn, Thomas. "The academic seminar as Emotional Community." *Nordic Journal of Studies in Educational Policy*, vol. 2016, no. 2–3, Jan. 2016, p. 33724, <https://doi.org/10.3402/nstep.v2.33724>.
- King, William, and Peter Marks. "Motivating knowledge sharing through a knowledge management system." *Human Resource Management International Digest*, vol. 16, no. 3, 25 Apr. 2008, <https://doi.org/10.1108/hrmid.2008.04416cad.005>.
- Kipkosgei, Felix, et al. "Coworker Trust and knowledge sharing among public sector employees in Kenya." *International Journal of Environmental Research and Public Health*, vol. 17, no. 6, 18 Mar. 2020, p. 2009, <https://doi.org/10.3390/ijerph17062009>.
- Kmiecik, Roman. "Trust, knowledge sharing, and innovative work behavior: Empirical evidence from Poland." *European Journal of Innovation Management*, vol. 24, no. 5, 13 Oct. 2020, pp. 1832–1859, <https://doi.org/10.1108/ejim-04-2020-0134>.
- Kuo, Tsung-Hsien. "How expected benefit and Trust Influence Knowledge Sharing." *Industrial Management & Data Systems*, vol. 113, no. 4, 19 Apr. 2013, pp. 506–522, <https://doi.org/10.1108/02635571311322766>.

- Lee, Heeseok, and Byounggu Choi. "Knowledge management enablers, processes, and organizational performance: An integrative view and empirical examination." *Journal of Management Information Systems*, vol. 20, no. 1, July 2003, pp. 179–228, <https://doi.org/10.1080/07421222.2003.11045756>.
- Liang, Ting-Peng, Chih-Chung Liu, and Chia-Hsien Wu. "Can Social Exchange Theory Explain Individual Knowledge-Sharing Behavior? A Meta-Analysis." *ICIS 2008 Proceedings - Twenty Ninth International Conference on Information Systems*, 2008, 171.
- Liao, Li-Fen. "Knowledge-sharing in R&D departments: A Social Power and Social Exchange Theory Perspective." *The International Journal of Human Resource Management*, vol. 19, no. 10, Oct. 2008, pp. 1881–1895, <https://doi.org/10.1080/09585190802324072>.
- Lin, Ming-Ji James, et al. "Fostering the determinants of knowledge sharing in professional virtual communities." *Computers in Human Behavior*, vol. 25, no. 4, July 2009, pp. 929–939, <https://doi.org/10.1016/j.chb.2009.03.008>.
- Liu, Chih-Chung, et al. "Knowledge sharing as social exchange: Evidence from a meta-analysis." *Pacific Asia Journal of the Association for Information Systems*, 2011, pp. 21–47, <https://doi.org/10.17705/1pais.03402>.
- Lu, Lin, et al. "Managerial knowledge sharing: The role of individual, interpersonal, and organizational factors." *Management and Organization Review*, vol. 2, no. 1, Mar. 2006, pp. 15–41, <https://doi.org/10.1111/j.1740-8784.2006.00029.x>.
- McAllister, Daniel J. "Affect- and cognition-based trust as foundations for interpersonal cooperation in organizations." *Academy of Management Journal*, vol. 38, no. 1, Feb. 1995, pp. 24–59, <https://doi.org/10.5465/256727>.
- Mohammed, Neethu, and T.J. Kamalanabhan. "Interpersonal Trust and employee knowledge sharing behavior." *VINE Journal of Information and Knowledge Management Systems*, vol. 50, no. 1, 14 Oct. 2019, pp. 94–116, <https://doi.org/10.1108/vjikms-04-2019-0057>.
- Mutahar, Yaser, et al. "The contribution of trust to academic knowledge sharing among academics in the Malaysian Research Institutions." *Cogent Business & Management*, vol. 9, no. 1, 21 Feb. 2022, <https://doi.org/10.1080/23311975.2022.2038762>.
- Nguyen, Tuyet-Mai, et al. "Motivation in organisational online knowledge sharing." *Journal of Knowledge Management*, vol. 26, no. 1, 18 Oct. 2021, pp. 102–125, <https://doi.org/10.1108/jkm-09-2020-0664>.

- Nguyen, Tuyet-Mai, Tuan Phong Nham, et al. "Motivation and knowledge sharing: A meta-analysis of main and moderating effects." *Journal of Knowledge Management*, vol. 23, no. 5, 10 June 2019, pp. 998–1016, <https://doi.org/10.1108/jkm-01-2019-0029>.
- Olechnicka, Agnieszka, et al. "Virtual academic conferencing: A scoping review of 1984–2021 literature. novel modalities vs. long standing challenges in scholarly communication." *Iberoamerican Journal of Science Measurement and Communication*, vol. 4, no. 1, 5 Apr. 2024, pp. 1–31, <https://doi.org/10.47909/ijsmc.93>.
- Quarchioni, Sonia, et al. "Knowledge management in higher education: A literature review and further research avenues." *Knowledge Management Research & Practice*, vol. 20, no. 2, 2 Mar. 2020, pp. 304–319, <https://doi.org/10.1080/14778238.2020.1730717>.
- Quinn, James Brian, et al. "Leveraging intellect." *Academy of Management Perspectives*, vol. 10, no. 3, Aug. 1996, pp. 7–27, <https://doi.org/10.5465/ame.1996.9704111471>.
- Ramayah, T., et al. "Assessing knowledge sharing among academics." *Evaluation Review*, vol. 38, no. 2, Apr. 2014, pp. 160–187, <https://doi.org/10.1177/0193841x14539685>.
- Rutten, Werner, et al. "The impact of (low) trust on knowledge sharing." *Journal of Knowledge Management*, vol. 20, no. 2, 4 Apr. 2016, pp. 199–214, <https://doi.org/10.1108/jkm-10-2015-0391>.
- Saunders, M.N.K., Lewis, P. and Thornhill, A. (2019) *Research Methods for Business Students*. 8th Edition, Pearson, New York.
- Serenko, Alexander, and Nick Bontis. "Negotiate, reciprocate, or cooperate? the impact of exchange modes on inter-employee knowledge sharing." *Journal of Knowledge Management*, vol. 20, no. 4, 11 July 2016, pp. 687–712, <https://doi.org/10.1108/jkm-10-2015-0394>.
- Sun, Y., Peng, Z., Lim, K., & Wang, W. (2014). *Norm of Reciprocity, Reciprocal Benefits, and Reciprocal Relationships: A Revisit of the Role of Reciprocity in Knowledge Sharing*
- Swart, Juani, and Philippa Harvey. "Identifying knowledge boundaries: The case of networked projects." *Journal of Knowledge Management*, vol. 15, no. 5, 13 Sept. 2011, pp. 703–721, <https://doi.org/10.1108/13673271111174285>.
- Tan, Christine Nya-Ling. "Enhancing knowledge sharing and research collaboration among academics: The Role of Knowledge Management." *Higher Education*, vol. 71, no. 4, 11 July 2015, pp. 525–556, <https://doi.org/10.1007/s10734-015-9922-6>.

- Thi Chung, Du, and Pham Thi Tram Anh. "Factors affecting knowledge sharing behaviour in public higher education institutions: An empirical study of vietnam." *Cogent Business & Management*, vol. 9, no. 1, 8 Dec. 2022, <https://doi.org/10.1080/23311975.2022.2155002>.
- Tsai, Ming-Tien, et al. "Understanding IT professionals' knowledge sharing intention through KMS: A Social Exchange Perspective." *Quality & Quantity*, vol. 47, no. 5, 3 Mar. 2012, pp. 2739–2753, <https://doi.org/10.1007/s11135-012-9685-4>.
- Van den Hooff, Bart, and Jan A. De Ridder. "Knowledge sharing in context: The influence of Organizational Commitment, communication climate and CMC use on Knowledge sharing." *Journal of Knowledge Management*, vol. 8, no. 6, 1 Dec. 2004, pp. 117–130, <https://doi.org/10.1108/13673270410567675>.
- Veer-Ramjeawon, Poonam, and Jennifer Rowley. "Embedding Knowledge Management in higher education institutions (heis): A comparison between two countries." *Studies in Higher Education*, vol. 45, no. 11, 30 Apr. 2019, pp. 2324–2340, <https://doi.org/10.1080/03075079.2019.1608431>.
- Vincent, Peter. "Rethinking the Research Seminar for a Post-COVID World with Cassyni." *Impact of Social Sciences*, 11 Mar. 2022, blogs.lse.ac.uk/impactofsocialsciences/2021/09/01/rethinking-the-research-seminar-for-a-post-covid-world-with-cassyni/.
- Wang, Sheng, and Raymond A. Noe. "Knowledge sharing: A review and directions for future research." *Human Resource Management Review*, vol. 20, no. 2, June 2010, pp. 115–131, <https://doi.org/10.1016/j.hrmr.2009.10.001>.
- Wang, Hsing-Kuo, et al. "Knowledge sharing in knowledge workers: The roles of Social Exchange Theory and the theory of planned behavior." *Innovation*, vol. 17, no. 4, 2 Oct. 2015, pp. 450–465, <https://doi.org/10.1080/14479338.2015.1129283>.
- Yang, Jen-te. "The impact of knowledge sharing on organizational learning and effectiveness." *Journal of Knowledge Management*, vol. 11, no. 2, 10 Apr. 2007, pp. 83–90, <https://doi.org/10.1108/13673270710738933>.
- Yeshinegus, Hanna, and Jianzhong Janne Hong. "Influencing factors of academic staff' knowledge sharing: A case of government universities in Addis Ababa, Ethiopia." *Innovation: The European Journal of Social Science Research*, 22 Aug. 2022, pp. 1 19, <https://doi.org/10.1080/13511610.2022.2113041>.
- Zhang, Xing, and Shan Liu. "Understanding relationship commitment and continuous knowledge sharing in online health communities: A Social Exchange Perspective."

Journal of Knowledge Management, vol. 26, no. 3, 25 June 2021, pp. 592–614, <https://doi.org/10.1108/jkm-12-2020-0883>.

Zhao, Li, and Brian Detlor. “Towards a contingency model of knowledge sharing: Interaction between social capital and social exchange theories.” *Knowledge Management Research & Practice*, vol. 21, no. 1, 8 Jan. 2021, pp. 197–209, <https://doi.org/10.1080/14778238.2020.1866444>

Appendices

Appendix 1 - Table of participants

Code name	Research position	Gender
JR1	Junior Researcher	Female
SR1	Senior Researcher	Female
JR2	Junior Researcher	Male
SR2	Senior Researcher	Female
JR3	Junior Researcher	Male
JR4	Junior Researcher	Female
JR5	Junior Researcher	Male
JR6	Junior Researcher	Female
JR7	Junior Researcher	Male
SR3	Senior Researcher	Female
SR4	Senior Researcher	Male
JR8	Junior Researcher	Female
SR5	Senior Researcher	Female
JR9	Junior Researcher	Male
JR10	Junior Researcher	Female
JR11	Junior Researcher	Male
JR12	Junior Researcher	Male
AF1	Academic Faculty	Female
JR13	Junior Researcher	Male
JR14	Junior Researcher	Female

As per The Swedish Association of University Teachers and Researchers & National Junior Faculty, "a junior researcher is defined as a researcher with a doctorate who does not yet have stable employment on the academic career ladder and may be employed as, for example, a postdoc, (PhD

qualified) lecturer, researcher, assistant professor or hold another type of position with primarily research tasks.” (Herstedt, 2021). Senior researchers are therefore defined in this study as those above assistant professors; and though not in accordance with this definition, PhD students are further denoted as “Junior Researcher” in this study to ensure no traceability.

Appendix 2 - Email to Interview Subjects

Heading:

Stockholm School of Economics: Research Seminars Interview Request

Dear x,

Our names are Linnéa Calderon and Inayah Iftikhar. We hope this email finds you in good health! We are reaching out to you to conduct a brief interview to support our thesis at the Stockholm School of Economics (SSE) centered on **Swedish academia**.

Our thesis focuses on the perceptions of academic faculty members on the practices of traditional (in-person) vs. virtually-influenced (i.e. online or hybrid) research seminars.

We are looking to conduct a **20-minute online or in-person interview at a time most suitable for you between March 4th and March 29th**. As we are very flexible regarding the time of day, please do not hesitate to suggest a comfortable time for your schedule. We are incredibly appreciative to be in contact with you and look forward to sharing a conversation.

Best regards,

Linnéa and Inayah

Appendix 3 - Interview Questions

Perspective as an Attendee

Benefits:

- What benefits do you gain by attending (traditional/virtual) research seminars? Do you feel that you gain more from attending a traditional/ virtual seminar?
- What makes you enjoy a (traditional/virtual) research seminar presentation and discussion?

Costs:

- Is the time and effort spent attending (traditional/virtual) seminars worthwhile?

- Would you ever hesitate to share knowledge due to any concerns about how others perceive you in a (traditional/virtual) seminar?
- Are any barriers to sharing knowledge reduced with virtual research seminars? (i.e. is hierarchy in knowledge sharing diluted?)
- Are there any other challenges you perceive when attending (traditional/virtual) research seminars?

Reciprocity:

- Has receiving knowledge from (traditional/virtual) seminars made you more willing to engage in them over time?
- When you engage, do you expect to get a valuable response in a (traditional/virtual) seminar?

Reciprocal Relationship

- By engaging in the (traditional/virtual) research seminar, does the relationship between your colleagues and yourself improve?
 - *Why is it important for you to improve your relationships with colleagues through research seminars?*

Trust:

- What have your colleagues done to make you comfortable to share knowledge in the (traditional/virtual) research seminar environment?
- Is there anything that makes you less comfortable to participate in the (traditional/virtual) research seminar?
- How do you perceive the level of interest your colleagues have in your opinions when engaging in a (traditional/virtual) discussion?

Perspective as a Presenter

Benefits:

- What motivates you to share your expertise with others as a presenter in a (traditional/virtual) seminar?
- What benefits do you gain by presenting in a (traditional/virtual) seminar?
- What makes you enjoy a (traditional/virtual) research seminar discussion?

Costs:

- Is the time and effort spent preparing and presenting at (traditional/virtual) seminars worthwhile?

- Does the experience of presenting ever suffer from how the audience in a (traditional/virtual) engages?
- What challenges do you encounter when preparing and delivering (traditional/virtual) seminar presentations?

Reciprocity:

- Do you expect other people to reciprocate your effort as a presenter through their engagement with your presentation?
- When you present in a (traditional/virtual) seminar, do you expect to receive effective and fruitful feedback?

Reciprocal Relationship

- Have your relationships with other colleagues grown by presenting in (traditional/virtual) research seminars?
- Can you describe any instances where presenting at (traditional/virtual) seminars has led to meaningful connections or professional relationships?

Trust:

- How important is it for you as a speaker to have a sense of trust in the fact that people are respectful and engaged in a seminar? Are people more or less respectful in a (traditional/virtual) seminar?
- Is there anything that makes you less comfortable to present in the (traditional/virtual) research seminar?
- How do you assess the level of support from the audience during (traditional/virtual) seminars?

EXTRA QUESTIONS:

- Concretely, what would be your critique of the traditional research seminar?
- Concretely, what would be your critique of the virtual research seminar?
- Are there any incentives to attend virtual and traditional seminar settings?