

INCLUSION FROM A DISTANCE

VIRTUAL WORK AND WORK GROUP INCLUSION

VALTER ARNESSON

MARIA ERLANSSON

Bachelor Thesis

Stockholm School of Economics

2021



Inclusion from a distance – Virtual work and work group inclusion

Abstract:

Diversity has during the last decades been established as a valued business goal for companies worldwide. During this development, inclusion has emerged as the main mediating factor to achieve the benefits of diversity, a mediating factor companies struggle to measure. The outbreak of the COVID-19 pandemic fuelled a switch to remote work, posing a multitude of questions regarding how to best communicate virtually. As both companies and their employees indicate a desire to keep these new work methods, virtual work becomes a research area of high interest. This thesis combines theories on work group inclusion, media richness and gender in organizations to investigate the research question “How does the perceived level of work group inclusion of employees relate to the level of media richness in virtual and face-to-face teams?” with the additional question of “How does this relationship differ depending on the gender of the employees?”. The questions are answered by conducting a quantitative study, using a multivariate regression analysis of a self-served survey answered by 1100 office workers across 4 different male-dominated industries. The analysis finds an interesting gender difference indicating that men demonstrate higher levels of work group inclusion related to using lean media such as text communication while the opposite is true for women and other genders, where instead higher media richness such as video conferencing is related to higher levels of inclusion. This difference reveals how the choice of communication method relates to the perceived work group inclusion and may favour certain genders in the virtual workplace, posing questions regarding how communication practices should be adjusted to virtual work settings.

Keywords:

Virtual teams, media richness, gender, work group inclusion, workplace diversity

Authors:

Valter Arnesson (23803)

Maria Erlansson (23798)

Supervisor:

Marijane Luistro Jonsson, Affiliated Researcher, Department of Entrepreneurship, Innovation and Technology and the SSE Institute for Research (SIR)

Examiner:

Laurence Romani, Associate Professor, Department of Management and Organization

Bachelor Thesis
Bachelor Program in Management
Stockholm School of Economics
© Valter Arnesson and Maria Erlansson, 2021

Acknowledgements

We want to express our sincere gratitude to everyone who has helped us in creating this thesis. Thank you to our wonderful supervision group and to Marijane Jonsson for all the feedback and the effort you have put in guiding us forward. Thank you to our friends and family for taking the time to be our survey pilots. Lastly, a warm thank you to all the companies and study participants for enabling our work, giving us the right connections and participating in the study. We could not have done this without you.

Contents

1.	INTRODUCTION	7
1.1.	Background.....	7
1.2.	Aim and research question	8
1.3.	Delimitation.....	8
2.	LITERATURE REVIEW	10
2.1.	Inclusion	10
2.1.1.	Defining work group inclusion.....	10
2.1.2.	Frameworks of work group inclusion	11
2.1.3.	Antecedents and outcomes of work group inclusion.....	11
2.2.	Remote work	12
2.2.1.	Defining virtual teams	12
2.2.2.	Media richness theory	12
2.3.	Gender in organizations.....	13
2.4.	Research intersection	13
2.4.1.	Inter-personal aspects and virtual teams	14
2.4.2.	Virtual teams and gender.....	14
2.4.3.	Gender and psychological aspects.....	14
3.	THEORETICAL FRAMEWORKS	16
3.1.	Research gap	16
3.1.1.	Theoretical contribution	16
3.1.2.	Empirical contribution.....	16
3.2.	Use and motivation of theoretical frameworks.....	17
3.2.1.	Inclusion	17
3.2.2.	Media richness.....	17
3.2.3.	Gender in organizations.....	17
3.3.	Hypotheses	18
4.	METHOD.....	20
4.1.	Research approach	20
4.2.	Research design	20
4.3.	Research method	21
4.3.1.	Sample selection.....	21
4.3.2.	Construction of survey	21
4.3.3.	Pilot testing and adaptations of survey.....	22

4.3.4.	Data collection.....	22
4.3.5.	Data analysis.....	22
4.4.	Method discussion	23
4.4.1.	Ensuring research quality	23
4.4.2.	Ethical considerations.....	24
5.	EMPIRICAL DATA	25
5.1.	Descriptive statistics	25
5.2.	Aggregate group empirics.....	28
5.2.1.	Data	29
5.2.2.	Hypotheses result	30
5.3.	Gender divided empirics.....	31
5.3.1.	Data	31
5.3.2.	Hypotheses results	33
5.4.	Statistical discussion.....	34
6.	ANALYSIS AND DISCUSSION.....	35
6.1.	Analysis.....	35
6.1.1.	Aggregate level.....	35
6.1.2.	Gender differences	35
6.2.	Discussion	36
7.	CONCLUSION	39
7.1.	Summary	39
7.2.	Contributions of the study	39
7.2.1.	Research implications.....	39
7.2.2.	Implications for management practitioners	39
7.2.3.	Future research	40
8.	BIBLIOGRAPHY	41
9.	APPENDICES	55
9.1.	Appendix 1: Inclusion framework, Shore et al. (2011, p. 1266).....	55
9.2.	Appendix 2: Self-completion questionnaire	55
9.3.	Appendix 3: Survey coding.....	60
9.4.	Appendix 4. Summary of Company Characteristics	62
9.5.	Appendix 5: Correlation table of control variables	62
9.6.	Appendix 6: Correlation table of media richness measures.....	62
9.7.	Appendix 7: Correlation table of dependent measures	63

9.8.	Appendix 8 Media richness by gender	63
9.9.	Appendix 9: Cronbach's Alpha.....	63
9.10.	Appendix 10: Registered data analysis – AsPredicted.....	64

1. Introduction

1.1. Background

Workplace diversity is shown to bring new skills, experiences and insights of value for a work group and many organizations strive for it to have better conditions to achieve their goals (Vohra, Chari, Mathur, Sudarshan, Verma, Mathur, Thakur, Copra, Srivastava, Gupta, Dasmahapatra, Fonia & Gandhi, 2015). The effects are, however, not always positive, as workplace diversity in some cases can increase conflict and turnover rates or lower cohesion and performance (Mannix & Neale, 2005 in Shore, Cleveland & Sanchez, 2018). Mere diversity in numbers is not enough to harness the potential value of a diverse work force. The aim of demographic diversity is diversity of thought (Vohra et al., 2015), which does not occur automatically.

The concept of work group inclusion has emerged as a mediating factor, a way for organizations to reap the benefits of workplace diversity (Brimhall, Lizano & Mor Barak, 2014; Ferdman & Deane, 2013). According to this research field, it is only when an employee perceives to be included in the work group that their full potential and contribution to the team may be fulfilled. Therefore, organizations have increasingly turned to inclusion as a solution to their diversity challenges.

Remote work has become increasingly common, due to technological advances, globalization and specialization. The global COVID-19 pandemic accelerated the leap into remote work for many organizations worldwide. Sweden was one of few countries not to impose lockdowns, but the pandemic still caused the share of the work force working remotely to increase from 4 to 30 percent (Ahlqvist & Lundqvist, 2020). There are also indications that after the pandemic, organizations will incorporate remote work into their practices to a larger extent (Luca, Bartik, Cullen & Glaeser, 2020).

Management practitioners around the world report that the rapid increase in remote work has had more negative effects on minorities than other employees. These reports indicate that, during the pandemic, diverse employees miss connectivity and belonging with colleagues more than others (Ellingrud, Krishnan, Krivkovich, Robinson, Yee, Kukla, Mendy, Sancier-Sultan & Tierney, 2020), women have felt overlooked or ignored in videoconference meetings more often than men (Catalyst, 2020) and employees of colour have become more isolated than others, missing out on vital networks and social connections to other minority members (Schwartz, 2020).

Gender is one of the diversity aspects that have received the most attention both from scholars and practitioners, and yet, many organizations still lack gender diversity. The problems range from extreme expressions of gender inequalities in the workplace, as demonstrated by the metoo-movement, to more subtle every-day expressions of

masculine hegemony (Connell & Messerschmidt, 2005), keeping women and people of other genders from being fully included.

The pandemic has highlighted the need to gain a better understanding of the connection between these three areas – work group inclusion, remote work and gender in organizations. As the literature review will demonstrate, no theoretic framework has conceptualized this connection before and the authors found it a relevant theoretical gap to reduce.

1.2. Aim and research question

The aim of the study is to investigate whether there is a relationship between employees' level of perceived inclusion and the different types of media used to communicate with colleagues. The purpose is also to examine whether there is a difference between how employees of different genders perceive their inclusion in the work group depending on communication methods.

The concepts used to study this are work group inclusion, concerned with individual employees' perceptions of how they are treated in their work group, and media richness, referring to the type of information transmitted in different communication methods. Both of these key concepts will be defined in more detail in the literature review.

The respondents were office workers, defined as employees with occupations that could be carried out in an office space and thus also from a remote office. During the studied period, the office workers worked either face-to-face at a shared geographical location, or virtually, geographically dispersed and relying on technology to communicate and cooperate.

To achieve the research aim, the research question is divided into two parts:

How does the perceived level of work group inclusion of employees relate to the level of media richness in virtual and face-to-face teams?

How does this relationship differ depending on the gender of the employees?

1.3. Delimitation

The study examined employees' perceptions of inclusion in their work group instead of the whole organization. This approach was chosen in line with previous research showing that perceptions of the work group are more relevant in studies on diversity (Parks-Stamm, Heilman & Hearn, 2008 in Shore, Randel, Chung, Dean, Holcomb, Ehrhart & Singh, 2011).

The study was conducted on employees in Sweden, a country ranking high on gender equality both in society (World Economic Forum, 2021) and in the labour market (Equileap, 2021). The same study conducted in another country might yield different results.

Sweden not enforcing lockdowns during the pandemic made the country especially appropriate for the study, since it lacked the added influence on the labour force derived from interventions such as closed schools and child-care, making virtual work one of few changes to office workers' circumstances during the pandemic compared to other countries.

The studied employees were part of local virtual teams, as opposed to global virtual teams. Most worked face-to-face with their teams before the pandemic, which influenced the results as team relationships were formed during both face-to-face and virtual communication methods.

2. Literature review

The thesis studies the intersection of three fields: inclusion, remote work and gender in organizations. First, these three research fields are presented and discussed separately, then their intersection is examined, revealing a research gap.

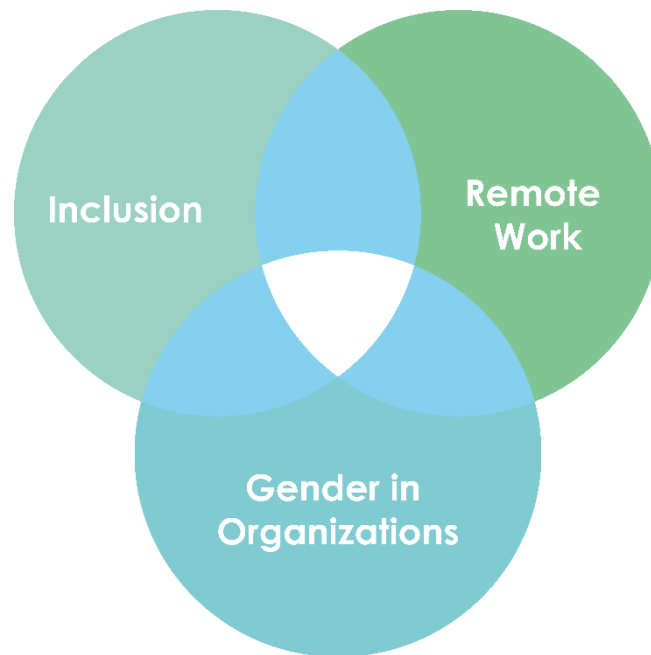


Figure 1. Visualization of intersecting research fields

2.1. Inclusion

2.1.1. Defining work group inclusion

Work group inclusion is a relatively new academic field and grew out of research on employee diversity, a more established concept within management studies. Even though the words diversity and inclusion are often used interchangeably, there is a clear distinction between them, where inclusion is a mediating factor for diversity to reach its full potential. According to Hays-Thomas and Bendick (2013 in Shore et al., 2018), diversity is the mixture of attributes in a group which affects how people behave, think and feel, while inclusion focuses on the culture and practices that shape people's experiences.

In this thesis, the following definition of inclusion is used, proposed by Shore et al. (2011, p. 1265):

[T]he degree to which an employee perceives that [they are] an esteemed member of the work group through experiencing treatment that satisfies [their] needs for belongingness and uniqueness.

2.1.2. Frameworks of work group inclusion

A seminal study by Mor-Barak and Cherin (1998) introduced measures and a theoretical model of inclusion, defining it as a continuum ranging from exclusion to inclusion. Shore et al. (2011) expanded the measure by adding the dimension of uniqueness. Their framework (Appendix 1) was based on Brewer's optimal distinctiveness theory, stating that there is tension between "human needs for validation and similarity to others (on the one hand) and a countervailing need for uniqueness and individuation (on the other)" (Brewer, 1991). Belongingness is here defined as "the need to form and maintain strong, stable interpersonal relationships" (Baumeister & Leary, 1995 in Shore et al., 2011), while uniqueness is defined as "the need to maintain a distinctive and differentiated sense of self" (Snyder & Fromkin, 1980 in Shore et al., 2011).

The authors consider Shore et al.'s (2011) contribution to Mor Barak and Cherin's (1998) framework valuable to the concept of inclusion, because it is more precise in capturing the characteristics of diversity within a group. Even though Mor Barak and Cherin's original framework was aimed at measuring levels of perceived inclusion for minority individuals within a group, the continuum mainly encompasses the belongingness aspect of inclusion and not the uniqueness aspect, failing to incorporate the extent to which the unique characteristics that diverse group members bring to a group are welcomed and utilized. The risk when only measuring belongingness is to interpret assimilation as inclusion, missing the true aim of inclusion as a diversity mediator.

Chung, Ehrhart, Shore, Randel, Dean & Kedharnath (2020) further developed and tested the model by Shore et al. (2011). The division of the inclusion concept into belongingness and uniqueness was used to construct ten measures, five for each component.

In another study, Shore et al. (2018) summarized and categorized the key aspects of perceived employee inclusion into six themes:

- Feeling safe
- Involvement in the work group
- Feeling respected and valued
- Influence on decision-making
- Authenticity
- Recognizing, honoring, and advancing of diversity

2.1.3. Antecedents and outcomes of work group inclusion

Among the antecedents of work group inclusion are:

- Diversity climate
(Ellen & Zonia, 1993; Gonzalez & Denisi, 2009; Leslie & Gelfand, 2008; McKay, Avery & Morris, 2009; Mor-Barak & Cherin, 1998; Thomas & Ely, 1996)

- Inclusive values and behavior by management and supervisors (Avery, McKay, Wilson & Tonidandel, 2007; Ragins & Cornwell, 2001; Scheid, 2005; Wasserman, Callegos & Ferdman, 2012)
- Leaders showing appreciation and inviting group members to provide input (Nembhard & Edmondson, 2006)
- Employees' access to information and participation in decision making (Mor-Barak & Cherin, 1998; Nishii, 2013)
- Procedures for conflict resolution (Roberson & Stevens, 2006)
- Freedom from stereotyping (Bilimoria, Joy & Liang, 2008)

According to Shore et al. (2011), most studies on the outcomes of perceived inclusion have either been theoretical or not able to consistently support its hypotheses. The findings that have gained support are that inclusion is positively related to job satisfaction (Acquavita, Pittman, Gibbons & Castellanos-Brown, 2009 in Shore et al., 2011) and that exclusion from decision making is a predictor of the intention to leave (Mor Barak, Levin, Nissly & Lane, 2006 in Shore et al., 2011).

2.2. Remote work

2.2.1. Defining virtual teams

This thesis uses Morrison-Smith and Ruiz's (2020) definition of virtual teams: "geographically distributed collaborations relying on technology to communicate and cooperate". The concept of virtual teams is often treated as interchangeable with global virtual teams, but this thesis will distinguish between global and local virtual teams to capture the type of virtual teamwork emerging in many organizations today. We define these local virtual teams as being based around a common geographical location, with a combination of employees working remotely and at the physical workspace, with some alternating between them. These virtual teams do not encompass some of the key attributes of global virtual teams, such as great geographical distances, time distances from working in different time zones, language barriers or socio-cultural differences.

2.2.2. Media richness theory

Since communication technology has developed rapidly over the past decades and technology use differs greatly between virtual teams, research on virtual teams can be divided by technologies used. The prevailing theory in this research field is information richness or media richness theory (Daft & Lengel, 1984). According to this theory, face-to-face interaction is the ideal mode of communication, leading to the conclusion that the richer the media used in computer mediated communication, the closer the resemblance to face-to-face communication, and therefore, the better the team performance. The level of media richness depends on "the degree of emotional, normative, or attitudinal cues present" (Daft & Lengel, 1984 in van der Kleij, Lijkwan, Rasker & De Dreu, 2009) and

encompasses both the number of cues and the synchronicity of those cues (Daft & Lengel, 1984).

Media richness theory has received criticism for its assumption that face-to-face communication is the optimal communication mode. Other parameters than the medium, such as individual preferences, skills and attitudes, have been shown to influence the adoption of technology and hence the efficiency with which they are used (Arnfolk & Kogg, 2003). Critics have argued that lean media can have the same ability to exchange social information as face-to-face communication, but merely requires more time and effort to do so (Sole & Edmondson, 2002). Daft and Lengel (1984; 1986) acknowledged that some media were better suited to certain kinds of tasks, suggesting that conveying complex, *equivocal*, messages gained from the use of rich media while simple and explicit, *canonical*, messages could benefit from the use of leaner media (Barry & Fulmer, 2004).

An adaption of media richness theory to encompass the potential benefits of communication technology resulted in the development of media synchronicity theory. This theory posits that computer-mediated communication can create efficiencies compared to face-to-face communication and therefore be equally or more efficient for certain tasks (Dennis & Valacich, 1999).

2.3. Gender in organizations

This study adopts the perspective that organizations are gendered. The concept developed by Joan Acker (1990) shows gender as a structure beyond the individual, emphasizing that organizations and occupations themselves can have a “gender”, continuously constructed through gendered substructures, divided into organizing processes, organization culture, interactions at the job and gendered identities (Acker, 2012).

The effects of gender in organizations become particularly clear when one gender is majority. Kanter (1993) called a group in a significant minority position within an organization ‘token workers’ and showed that such a position would lead to disadvantages for the minority members. Women in male-dominated occupations have been found disadvantaged by being tokens, while men in female-dominated occupations benefit from their token status (Williams, 1992 in Britton & Logan, 2008).

2.4. Research intersection

To the authors’ knowledge, the relationship between work group inclusion and media richness, divided according to gender, has previously not been studied. Previous research has, however, studied areas with close connections to the research intersection, which are presented below.

2.4.1. Inter-personal aspects and virtual teams

Virtual teamwork has been found to negatively affect inter-personal aspects such as team trust, communication frequency, conflict, team identification and openness for information sharing (Gilson, Maynard, Jones Young, Vartiainen & Hakonen, 2015); trust, communication, coordination, social interaction and individual recognition (Mehtab, Rehman, Ishfaq & Jamil, 2017); interpersonal relations, culture and trust (Daim, Reutiman, Hughes, Pathak, Bynum & Bhatla, 2012); respect, acceptance, empathy, trust and access to information (Vohra et al., 2015).

There has been very little research devoted to long-term inter-personal group outcomes, such as “affect management, psychological safety, group emotion, collective efficacy, and social integration” (Martins, Gilson & Maynard, 2004).

2.4.2. Virtual teams and gender

Most studies on how different genders perceive inter-personal aspects of virtual teamwork are relatively old in relation to the developments of communication technologies. They have either researched text-based communication or have not described which computer mediated communication technologies were used. These studies, however, showed clear patterns in gender differences. Compared to men, women have been shown to perceive e-mail communication differently (Gefen & Straub, 1997), perceive members of the group as being more supportive in virtual teams and being less satisfied and perceive conflicts being smoothed over more in face-to-face teams (Lind, 1999), report higher levels of perceived team performance and less severe team problems in virtual teams (Lindsley G. Boiney, 2001), perceive a higher extent of relationship building, commitment and satisfaction and no significant differences in trust, collaboration or performance (Liu, 2009) and feel more included and therefore participate more in teams when using computer mediated communication before face-to-face work sessions compared to the other way round (Triana, Carmen, Kirkman & Wagstaff, 2012).

The findings presented above suggest women perceive to benefit from the use of lean media in virtual teamwork, potentially since these technologies decreased the possibility for social categorization and visibility of surface-level characteristics affecting the perception of, communication between and behavior towards team members (Dennis & Valacich, 1999; Triana et al., 2012). The anonymity attained when collaborating using only text-based media was shown to positively affect women’s perceptions of inter-personal factors in virtual teams, while men perceived the teamwork to suffer from it.

2.4.3. Gender and psychological aspects

Gender dissimilarity is a concept illustrating “the difference between a focal group member and his or her peers with respect to gender” (Guillaume et al., 2012 in Jansen et al., 2017, p. 880) and studies have found it negatively related to perceived inclusion for

all genders (Hope Pelled, Ledford, Gerald & Albers Mohrman, 1999; Tsui, Egan & Ill, 1992 in Bae, Sabharwal, Smith & Berman, 2017; Jansen, Otten & van der Zee, 2017). There are contradictory findings on whether women or men are more effected by gender dissimilarity, with some studies showing the effect to be stronger for women (Gonzalez & Denisi, 2009 in Jansen et al. 2017) and others for men (Tsui et al., 1992 in Jansen et al. 2017; Bae et al. 2017).

There is stronger consensus around gender differences in relation to workplace gender composition, where men in gender balanced workplaces show lower job satisfaction and self-esteem than those in male-dominated workplaces (Wharton & Baron, 1987 in Bae et al. 2017), while women in male-dominated or gender balanced workplaces have higher job satisfaction than those in female-dominated workplaces (Wharton & Baron, 1991 in Bae et al. 2017). These studies are, however, old and these associations might have changed with increased gender equality in society.

3. Theoretical frameworks

3.1. Research gap

From the literature review, a research gap became evident at the intersection of work group inclusion, media richness theory and gender in organizations. The study therefore focused on this intersection, to fill the theoretical and empirical gap.

3.1.1. Theoretical contribution

Theory on work group inclusion and media richness theory have not previously been combined. This study therefore fills a theoretical gap by linking the two fields. Adding the third dimension of gender further contributes to attaining theoretical links that have not yet been examined.

The study not only separates the types of communication methods used by employees, but also the amount of time each type is used. This adds a new facet to the media richness spectrum.

With a lack of conceptual consensus within the field of inclusion, this study contributes by adding empirical findings to Shore et al.'s (2011) conceptual framework, which has become widely accepted in the academic world (Chung et al., 2020; Tang et al., 2015).

3.1.2. Empirical contribution

Much of the previous research has focused on global virtual teams and not local virtual teams. Since the latter has increased dramatically during the COVID-19 pandemic and is predicted to remain high after it has subdued, this is a particularly interesting context to study that has previously received little attention.

Many studies on media richness have been conducted in experimental settings, where types of media and tasks have been examined in isolation. This study contributes by instead investigating real-world employees in their long-term teams and organizations, performing a multitude of tasks using a mix of communication media.

Gender differences in perceptions of inter-personal aspects of virtual teamwork have not been studied extensively in contexts where teams use rich media such as video-based communication. Therefore, this study contributes with insights on gender differences in perceptions of inclusion in the whole spectrum of media richness.

Research on computer-mediated communication quickly becomes outdated as new technologies are introduced and this study therefore contributes to the field by updating the empirical knowledge on currently used technologies.

3.2. Use and motivation of theoretical frameworks

This study used a deductive approach, constructing hypotheses based on theory. Since no existing theory combined inclusion, media richness and gender in organizations, a combination of theoretical frameworks was used.

3.2.1. Inclusion

Two inclusion frameworks constituted the basis for forming hypotheses. First, the six themes of inclusion by Shore et al. (2018) were used to find proxies for inclusion from research on connected inter-personal factors. This provided an empirically founded theoretical base to combine previous findings from studies on inclusion with those on inter-personal aspects of virtual teams. Then, the conceptualization of inclusion by Shore et al. (2011) was used to formulate the hypotheses in a way which there were tools to test, namely the ten measures developed by Chung et al. (2020). Choosing only one of the frameworks was not preferred, since none of them were both useful for finding proxies and possible to test with validated measures.

The Chung et al. (2020) measures constituted the core of the self-administered survey used in the study. Since the measures were a direct development of the Shore et al. (2011) framework and share its theoretical underpinnings, the authors believe them to both have aligning theoretical foundations and practical usefulness.

3.2.2. Media richness

The conceptual framework on media richness developed by Daft and Lengel (1986) was used in the survey as a tool to separate employees' communication methods according to their degree of media richness. This allowed for a deeper examination of employees' virtual work environment than a comparison of face-to-face and virtual teamwork.

Even though the support for media richness theory is debated and other parameters of virtual teamwork affect outcomes similar to inclusion, the framework is considered relevant to this study. Since the study examines real-life conditions where employees are performing tasks with varying degrees of complexity, media synchronicity theory would not be feasible or relevant to test. Perceived inclusion is concerned with interactions within the work group long-term and isolating work into individual tasks would not add knowledge on employee perceptions of their work group as a whole.

3.2.3. Gender in organizations

According to Britton and Logan (2008, p. 12), "the 'theory' of gendered organizations is perhaps less a theory – in the sense of the classic definition of theory as a set of testable hypotheses – as it is a framework for seeing inequality". Therefore, this thesis used Acker's concept as well as theory on tokenism only as motivation for studying

gender differences. Gender theory informed the hypotheses by motivating the expectation that there would be gender differences in employee perceptions.

3.3. Hypotheses

Proxies for work group inclusion in virtual teams were found through matching the six themes of inclusion by Shore et al. (2018) with connected inter-personal aspects of virtual teamwork (as stated in section 2.4.1.):

- *Feeling Safe*
Proxies: Trust, relationship building and team conflict
- *Involvement in the work group*
Proxies: Access to information, openness of information sharing, knowledge sharing and effective communication
- *Feeling respected and valued*
Proxies: Respect within the group and individual recognition
- *Influence on decision-making*
No direct proxies were found, but the concepts participation, collaboration and coordination were considered adjacent to this theme.
- *Authenticity*
Proxies: Acceptance
- *Recognizing, honoring and advancing of diversity*
Proxies: Culture, empathy and commitment

All proxies for inclusion had a negative relationship to low media richness on the aggregate level. In contrast, studies on gender differences (section 2.4.2.) showed that women perceive the use of lean media to have positive outcomes on relevant inter-personal factors. The hypotheses were thereby formulated accordingly.

The hypotheses for the aggregate group level and gender differences were each divided into three parts – one encompassing inclusion and two dividing the inclusion concept into belongingness and uniqueness, in line with the conceptualization by Shore et al. (2011).

Aggregate hypotheses

*H1: The **lower** the media richness, the **lower** the level of perceived belongingness for the sample.*

*H2: The **lower** the media richness, the **lower** the level of perceived uniqueness for the sample.*

*H3: The **lower** the media richness, the **lower** the level of perceived inclusion for the sample.*

Gender difference hypotheses

H4: The **lower** the media richness, the **higher** the perceived belongingness for women and others.

H5: The **lower** the media richness, the **higher** the perceived uniqueness for women and others.

H6: The **lower** the media richness, the **higher** the perceived inclusion for women and others.

The expression “women and others” encapsulates all respondents not identifying as men (further explained in section 5.1.).

4. Method

4.1. Research approach

This study was conducted within an objectivist ontology and the positivistic research paradigm, where social phenomena are assumed to be empirically observable and quantifiable (Bryman & Bell, 2015, pp. 27-28). The study examines the subjective perceptions of individuals, but is not interpretive, as the perceptions are assumed to depict objective truths about the nature of organizations. This is due to the nature of the concept of perceived inclusion, where an organization can only be viewed as objectively inclusive when its members perceive it to be. The aim of the study is to deduce generalizable laws by testing theories, meaning a deductive approach has been used. Regarding perspective on gender, this thesis resides in the functionalist gender theory paradigm, described by Alvesson, Billing and Torhell (2011) as the "gender as a variable-perspective".

4.2. Research design

A cross-sectional design was chosen for the study to allow for a generalized analysis over multiple industries (Bryman & Bell, 2015, pp. 61-66), more specifically administering a self-completion questionnaire to employees in organizations in different industries. While quantitative data do not give as deep knowledge as qualitative, collecting broad data increases the chances of determining patterns of association, in this case between inclusion and media richness, and was therefore preferred to answer the research question.

As the concept of work group inclusion is a personal and sensitive matter, interviewing subjects could risk respondents not sharing their true perceptions. Collecting data through self-completion questionnaires maintains the highest level of anonymity and therefore safety of expressing one's opinions without fear of judgement.

Due to the survey being carried out at only one point in time, the method does not offer internal validity enough to establish any direction of causal influence (Bryman & Bell, 2015, p. 64). Had it been practically possible, an experimental or quasi-experimental design would have been beneficial to determine causal links.

Using a survey made it possible to tailor questions based on the research question and theoretical frameworks and not be dependent on pre-existing survey questions determined by third parties.

4.3. Research method

4.3.1. Sample selection

The population of interest were employees in Swedish companies working in office-based occupations, with work tasks equally possible to conduct at a physical workplace as remotely, and the results will therefore be applicable to this population only. The COVID-19 pandemic, which was active when the study was carried out, was utilized as an opportunity to examine a population of employees where most had transferred from co-located to virtual work settings.

A purposive sampling method was used, where organizations and respondents relevant to the research question were sought out and contacted (Bryman & Bell, 2015, pp. 430-436). Within this approach, a typical case sampling was used, meaning the aim was to include organizations with employees exemplifying the population of interest (Bryman & Bell, 2015, p. 430).

The participating companies were all from male-dominated industries. This was not the intention of the authors but could be explained by the fact that such companies were more interested in participating due to their history of diversity challenges and therefore being more prone to work actively with inclusion. The selection of such a sample could be criticized for not being representative enough, but as the sampling approach is purposive, the demands that apply to random sampling do not apply here. However, the results of the study will not be able to be generalized beyond the type of workplace represented. A variation within the sample still exists, as participating organizations are from different industries.

4.3.2. Construction of survey

The survey consisted of 22 questions, with 4 questions on media richness, 11 questions on perceived work group inclusion, 6 questions on subject characteristics (gender, age, work group size and work location) and 1 attention-control question. See appendix 2 for the full survey.

The survey was constructed both in Swedish and in English, as employees at the participating companies had different proficiencies in the languages and offering both would result in more responses. The translation of the inclusion measures by Chung et al. (2020) was reviewed by two contacts with knowledge in linguistics, Swedish and English.

Media richness was divided into four levels, in line with previous studies. Since the studied subjects were expected to use communication across all levels of media richness, the survey was constructed to measure the hours of usage per typical workday.

Chung et al.'s (2020) measures of inclusion used a 5-point Likert scale. Having used a scale with more response alternatives would have made it possible to reach a more

nuanced range of answers. However, to keep accuracy and not jeopardize the reliability, the same Likert item answers were used.

4.3.3. Pilot testing and adaptations of survey

A pilot survey was conducted in two steps to establish the readability and investigate how the formulated questions were understood.

First, the survey was sent to a diverse group of personal contacts, who discussed each section thoroughly with the authors. Secondly, a group of ten people at one of the participating companies gave feedback on the questions as a group. Several valuable insights led to an edited version with increased clarity and stronger focus on the work group. A few remarks were made about the ambiguity of interpretation of Chung et al.'s (2020) measures, but these were not further altered, to keep as similar to their original study as possible.

4.3.4. Data collection

Each participating organization sent out the survey to their employees who fulfilled the criteria of having office-based occupations. The survey was delivered as a link emailed from the employees' HR-managers for all except one company, where the questionnaire was also uploaded to their internal web. All respondents were given one week to participate in the study.

4.3.5. Data analysis

The data was analysed using a multivariate linear regression model to evaluate relations between the independent variables of media richness and the dependent variable of inclusion, using the central limit theorem to approximate a normal distribution by aiming for a sufficiently large sample size. All analysis was conducted first for the sample as a whole and then for women and others in relation to the men.

As described by the theoretical framework, inclusion was divided into belongingness and uniqueness, with five questions measuring each. The five questions had the mean constituting belongingness respective uniqueness and the mean of all ten questions constituted the measurement of inclusion.

The first model established the relation between the level of inclusion and the time spent using communication methods of varying media richness. By regressing the measurements of inclusion on the different scales of media richness, an indication could be given on how the different communication methods related to perceived inclusion.

$$y_i = \beta_0 + \delta_1 Time_{FTF_i} + \delta_2 Time_{Video_i} + \delta_3 Time_{Audio_i} + \delta_4 Time_{Text_i} + \varepsilon_i \quad (1)$$

A set of control variables were included to increase precision and control for aspects thought to affect inclusion. These were:

- **More digital method**, aimed at incorporating the changes to work methods during COVID-19, noting if respondent switched to a higher degree of digital work.
- **Same method**, noting if respondent stayed with the same work method, being omitted and used as the base case
- **Less digital method**, noting if respondent switched to a lower degree of digital work.
- **Company Characteristics**, to control for differences between companies and industries studied.
- **Work group size**, as smaller work groups make each member both stand out more and have more interactions with each other member. (Soboroff et al., 2020)
- **Employed since before COVID-19 outbreak**, as being employed since before the outbreak has given both opportunities to meet colleagues face-to-face and more time forming relations within the work group.
- **Age**, both to control for maturity and work experience but also to partly capture tech literacy differences.
- **Gender**, to control for gender differences in the aggregate analysis.

The final model was the main analysis of the study, measuring the relation between media richness and inclusion while controlling for changes to work methods and controlling individual and group characteristics that could affect the estimates. The company specific characteristics were included in the θ_i estimate while the individual characteristics were captured in μ_i . See appendix 3 for coding of variables.

$$y_i = \beta_0 + \delta_1 Time_{FTF_i} + \delta_2 Time_{Video_i} + \delta_3 Time_{Audio_i} + \delta_4 Time_{Text_i} + \delta_5 More_Digital_Method + \delta_6 Less_Digital_Method + \theta_i + \mu_i + \varepsilon_i \quad (2)$$

In the aggregated analysis, the gender term was included in the individual characteristics group control variable, while in the gender separated analysis, this term was differentiated at the level of analysis.

The data analysis was planned before data collection and was pre-registered at AsPredicted.org (Appendix 10).

4.4. Method discussion

4.4.1. Ensuring research quality

The reliability of the inclusion measures was perceived to be high, due to using pre-existing, tested, and validated measures based on theory. The level of replicability was also high, due to the transparent depiction of the research process. The measurement validity was likewise high because the research question was concerned with perceived

inclusion and the measures used asked respondents for their personal perceptions. Pre-registration of the study acted as a control-mechanism and ensured credibility.

The measures used for data collection were aimed at capturing the daily life conditions of the respondents. The ecological validity could, however, be jeopardized by the survey instrument itself (Bryman & Bell, 2015, p. 65). It is also possible that the whole truth about the nature of employees' perceptions were not captured by the survey. Employees could have different reasons for not filling out the survey or not doing it truthfully. Since the surveys were anonymous and employees were motivated to fill them out to enhance their own work environment, the authors still found it a relevant data collection method, minimizing manipulation or disturbance to the respondents' "natural environment".

4.4.2. Ethical considerations

Focusing on the personal subject of perceived inclusion led to handling sensitive data. Gender, age span and personal opinions were the types of personal data collected in the study. This data collection was conducted in accordance with the Stockholm School of Economics' regulations, GDPR and by discussing with the collaborators how to ensure the integrity of the respondents and security of the data gathered.

When constructing the questionnaire, the authors aimed to be as inclusive as possible in terms of the gender alternatives offered. To fulfil this, the response alternatives advocated by the Swedish Federation for Lesbian, Gay, Bisexual, Transgender, Queer and Intersex Rights were used (RFSL, 2016).

The authors chose not to conduct an experiment, which could have allowed for more controlled settings and is common in studies on media richness. Apart from practical considerations, this choice was made mainly since it would not be ethical to gather people working together face-to-face in the ongoing pandemic.

5. Empirical Data

5.1. Descriptive statistics

The survey yielded 1100 responses from four companies in the automotive, construction, finance, and telecommunications industries and the mean response rate was 35.09%.

The survey sample was decreased to 1090 by excluding non-usable answers, leaving the sample used for analysis:

Table 1. Survey Sample

	n
Survey responses	1100
Complete responses	1098
Agreeing to participate in survey	1092
Correct control question	1090
Outliers	0
Analysis sample	1090

Due to a low response rate of gender identities other than “woman” and “man”, the categories “non-binary”, “other option”, “uncertain” and “prefer not to answer” were grouped together with women and labelled “women and others” to ensure an inclusive analysis where no gender was excluded for statistical reasons. In this group, 97.62% answered “woman”, meaning it mostly reflects the opinions of the gender “woman”. The gender distribution of respondents was 42.48% women and others and 57.52% men, which closely matched the sample. For details about response rates and gender ratios, see appendix 4.

Descriptive statistics are presented by groups of variable type in three tables. First, the control variables are presented. The full correlations between these measurements are found in appendix 5 and range between -0.11 to 0.22.

Table 2. Descriptive statistics of categorical variables

Gender of respondent	Freq.	Percent	Cum.
Woman or other	463	42.48	42.48
Man	627	57.52	100.00
Age span of respondent			
20-29 years old	101	9.27	9.27
30-39 years old	273	25.05	34.31
40-49 years old	353	32.39	66.70
50-59 years old	296	27.16	93.85
60-69 years old	67	6.15	100.00
If respondent began working before COVID-19 outbreak			
False	84	7.71	7.71
True	1006	92.29	100.00
If respondent has switched to a more digital work method			
False	101	9.27	9.27
True	989	90.73	100.00
If respondent has kept using the same work method			
False	989	90.73	90.73
True	101	9.27	100.00
If respondent has switched to a less digital work method			
False	1090	100.00	100.00
Group size of respondent's closest work group			
2 people	27	2.48	2.48
3-4 people	135	12.39	14.86
5-9 people	490	44.95	59.82
10 people or more	438	40.18	100.00
Company respondent is employed at			
Company A	93	8.53	8.53
Company B	77	7.06	15.60
Company C	18	1.65	17.25
Company D	902	82.75	100.00

As no respondents reported switching to a less digital method, this variable was excluded and the variable same_method is omitted as the base case.

Secondly, the media richness measures are presented. They had a correlation between 0.02 to 0.09, with the full correlation table in appendix 6.

Table 3. Descriptive statistics of media richness measures

Time spent using text communication	Freq.	Percent	Cum.
Never	11	1.01	1.01
Less than 1 hour	326	29.91	30.92
1-2 hours	390	35.78	66.70
3-4 hours	162	14.86	81.56
More than 4 hours	201	18.44	100.00
Time spent using audio communication			
Never	87	7.98	7.98
Less than 1 hour	466	42.75	50.73
1-2 hours	365	33.49	84.22
3-4 hours	106	9.72	93.94
More than 4 hours	66	6.06	100.00
Time spent using video communication			
Never	40	3.67	3.67
Less than 1 hour	375	34.40	38.07
1-2 hours	349	32.02	70.09
3-4 hours	164	15.05	85.14
More than 4 hours	162	14.86	100.00
Time spent using face-to-face communication			
Never	755	69.27	69.27
Less than 1 hour	270	24.77	94.04
1-2 hours	40	3.67	97.71
3-4 hours	11	1.01	98.72
More than 4 hours	14	1.28	100.00

Lastly, the dependent measures together with the inclusion measures are presented. The correlation table between the dependent measures in appendix 7 range from 0.670 to 0.93.

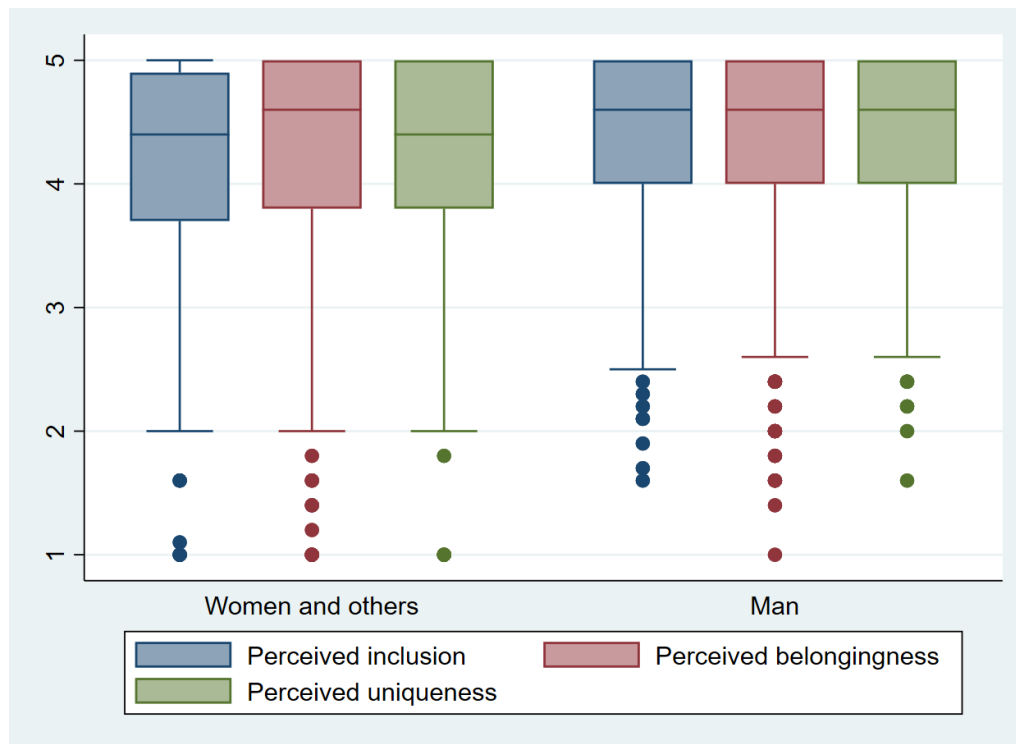
The correlation between uniqueness and belongingness was 0.73 in Chung et al.'s (2020) study, and this study obtains a similar correlation of 0.67. This further validates the difference and relation between belongingness and uniqueness.

Table 4. Descriptive statistics of dependent measures

Variable	Obs	Mean	Std. Dev.	Min	Max
belong1	1090	4.476	.872	1	5
belong2	1090	4.433	.92	1	5
belong3	1090	4.22	1.003	1	5
belong4	1090	4.269	1.009	1	5
belong5	1090	4.117	1.025	1	5
unique1	1090	4.442	.775	1	5
unique2	1090	4.37	.836	1	5
unique3	1090	4.383	.87	1	5
unique4	1090	4.323	.844	1	5
unique5	1090	4.222	.904	1	5
belongingness	1090	4.303	.843	1	5
uniqueness	1090	4.348	.705	1	5
inclusion	1090	4.326	.708	1	5

The dependent measures used are divided by gender to show distribution.

Graph 1. Dependent measures boxplot



5.2. Aggregate group empirics

The analysis of data was first carried out at the aggregate level, divided into separate measures for comparability.

5.2.1. Data

Table 5. Aggregate regressions

VARIABLES	(1) Model 1 Aggregate belongingness	(2) Model 2 Aggregate uniqueness	(3) Model 3 Aggregate inclusion
time_ftf	-0.0144 (0.0354)	-0.0230 (0.0305)	-0.0187 (0.0303)
time_video	0.0532** (0.0238)	0.0561*** (0.0203)	0.0546*** (0.0205)
time_audio	0.0563** (0.0274)	0.00122 (0.0230)	0.0287 (0.0230)
time_text	0.0735*** (0.0258)	0.0621*** (0.0221)	0.0678*** (0.0220)
more_digital_method	0.00299 (0.0879)	0.0122 (0.0701)	0.00762 (0.0737)
gender	0.171*** (0.0532)	0.148*** (0.0452)	0.160*** (0.0450)
group_size	-0.00619 (0.0366)	-0.0419 (0.0281)	-0.0241 (0.0291)
long_time_employee	0.181* (0.101)	0.205*** (0.0789)	0.193** (0.0798)
company_control	-0.0161 (0.0299)	-0.0135 (0.0236)	-0.0148 (0.0243)
Constant	3.735*** (0.184)	3.948*** (0.145)	3.841*** (0.150)
Observations	1,090	1,090	1,090
R-squared	0.039	0.038	0.044
F test	4.676	5.505	5.998
Prob > F	4.19e-06	1.97e-07	3.12e-08

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

A higher level of time spent communicating through video was related to 0.0532 significant higher belongingness, 0.0561 very significant higher uniqueness and 0.0546 very significant higher inclusion. A higher level of audio usage was only significantly related to 0.0563 higher belongingness while higher text usage was related to 0.0735 very significant higher belongingness, to 0.0621 very significant higher uniqueness and 0.0678 very significant higher inclusion.

A very significant gender difference was observed for all measures, where identifying as a man was related to 0.171 higher belongingness, 0.148 higher uniqueness and 0.160 higher inclusion.

Additionally, being employed since before the COVID-19 outbreak was related to 0.181 somewhat significant higher perceived belongingness, 0.205 very significant higher perceived uniqueness and 0.193 significant higher perceived inclusion.

The F-test demonstrated that all three models were significant as a whole, with the model of inclusion being both the most significant and having the highest R-squared value.

5.2.2. Hypotheses result

Only 5.96% of respondents used face-to-face communication over one hour per day, which is explained by the ongoing COVID-19 pandemic. This meant the sample did not utilize face-to-face communication enough to properly analyse the relation of this media richness level to our dependent measures. This variable was therefore not significant enough to analyse and the corresponding variable signs were disregarded. All other media richness variables showed positive signs, as could be expected, since time spent communicating is the prerequisite for forming relationships with the work group.

To answer the hypotheses, the media richness estimates were compared, to see how they related to the dependent measures. For the measure of belongingness, all three levels of video, audio and text communication were significant to at least a 5% level. Comparing them clarified that text communication had the strongest relation to belongingness, audio communication had a lower relation and video communication the lowest. This indicated that there was an adverse relation between media richness and perceived work group inclusion than hypothesised. As there were no significant results for time spent on audio communication for neither uniqueness nor inclusion, it was more difficult to interpret the comparisons for these measures. However, comparing only the time spent on video communication and text communication showed that for both uniqueness and inclusion, text-based communication had a stronger relation to the dependent measures than video communication. This also contradicted the stated hypotheses and aligned with the previous finding regarding an adverse relation between media richness and perceived work group inclusion. It can therefore be concluded that the hypotheses are not supported for any of the measures.

H1	The lower the media richness, the lower the level of perceived belongingness for the sample.	Not supported
H2	The lower the media richness, the lower the level of perceived uniqueness for the sample.	Not supported
H3	The lower the media richness, the lower the level of perceived inclusion for the sample.	Not supported

5.3. Gender divided empirics

Below, the three measures are divided by gender to answer the second group of hypotheses. The communication methods used did not differ between gender categories, see appendix 8 for details.

5.3.1. Data

Table 6. Belongingness by gender

VARIABLES	(1) Model 1.1 Belongingness of women and others	(2) Model 1.2 Belongingness of men
time_ftf	0.0120 (0.0652)	-0.0349 (0.0396)
time_video	0.0748** (0.0377)	0.0363 (0.0297)
time_audio	0.115** (0.0468)	0.00979 (0.0330)
time_text	0.0641 (0.0466)	0.0815*** (0.0277)
more_digital_method	0.00993 (0.157)	0.00936 (0.103)
group_size	0.0443 (0.0636)	-0.0629 (0.0424)
long_time_employee	0.0422 (0.131)	0.331** (0.157)
company_control	-0.0947** (0.0471)	0.0484 (0.0388)
Constant	3.809*** (0.291)	3.815*** (0.243)
Observations	463	627
R-squared	0.048	0.039
F test	3.158	2.814
Prob > F	0.00171	0.00452

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

A higher level of time spent communicating through video was related to 0.0748 higher belongingness for women and others, while the same using audio was related to 0.0115 higher belongingness. None of these estimates were significant for men but a higher level of time spent communicating through text was related to 0.0815 very significant higher belongingness for men.

Except for the media richness measures, being employed since before the COVID-19 outbreak was related to a 0.331 higher perceived belongingness for men but not significant for women and others.

Table 7. Uniqueness by gender

VARIABLES	(1) Model 2.1 Uniqueness of women and others	(2) Model 2.2 Uniqueness of men
time_ftf	0.0180 (0.0575)	-0.0543 (0.0348)
time_video	0.0663** (0.0333)	0.0445* (0.0245)
time_audio	-0.0222 (0.0376)	0.0235 (0.0287)
time_text	0.0606 (0.0395)	0.0664*** (0.0242)
more_digital_method	0.0742 (0.120)	-0.0246 (0.0836)
group_size	0.0110 (0.0460)	-0.0841** (0.0353)
long_time_employee	0.163* (0.0982)	0.236* (0.128)
company_control	-0.0848** (0.0343)	0.0557* (0.0323)
Constant	3.990*** (0.223)	3.998*** (0.201)
Observations	463	627
R-squared	0.032	0.051
F test	2.342	4.168
Prob > F	0.0179	7.17e-05

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

A higher level of time spent communicating through video was related to 0.0663 higher uniqueness for women and others and 0.0445 for men. A higher level of time spent communicating though text was not significant for women and others but related to 0.0664 higher perceived uniqueness for men.

Being part of a categorically larger work group was related to a 0.0841 lower uniqueness for men and being employed since before the COVID-19 outbreak was related to 0.236 higher uniqueness for men and 0.163 for women and others.

Table 8. Inclusion by gender

VARIABLES	(1) Model 3.1 Inclusion of women and others	(2) Model 3.2 Inclusion of men
time_ftf	0.0150 (0.0575)	-0.0446 (0.0335)
time_video	0.0705** (0.0332)	0.0404 (0.0248)
time_audio	0.0462 (0.0395)	0.0167 (0.0277)
time_text	0.0623 (0.0400)	0.0740*** (0.0231)
more_digital_method	0.0421 (0.130)	-0.00760 (0.0863)
group_size	0.0276 (0.0485)	-0.0735** (0.0355)
long_time_employee	0.103 (0.0975)	0.284** (0.133)
company_control	-0.0898** (0.0372)	0.0521 (0.0319)
Constant	3.899*** (0.235)	3.907*** (0.207)
Observations	463	627
R-squared	0.040	0.054
F test	2.783	4.184
Prob > F	0.00515	6.82e-05

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

A higher level of time spent communicating through video was related to 0.0705 higher inclusion for women and others but not significant for men. A higher level of time spent communicating through text was instead not significant for women and others but related to 0.0740 higher perceived inclusion for men.

Being part of a categorically larger work group was related to a 0.0735 lower inclusion for men and being employed since before the COVID-19 outbreak was related to 0.284 higher perceived inclusion for men but not significant for women and others.

5.3.2. Hypotheses results

Gender significantly proved to determine differences in the relationship between perceived inclusion and the media richness of communication methods. For women, high

levels of media richness (video communication) were related to high levels of perceived inclusion, while for men, low levels of media richness (text-based communication) were related to high levels of inclusion. This result was the direct opposite of the hypotheses for gender differences.

H4	The lower the media richness, the higher the perceived belongingness for women and others.	Not supported
H5	The lower the media richness, the higher the perceived uniqueness for women and others.	Not supported
H6	The lower the media richness, the higher the perceived inclusion for women and others.	Not supported

5.4. Statistical discussion

As the chosen method did not support causality, it was not possible to infer whether the utilized communication method strictly dictated the perceived inclusion or if the perceived inclusion within the work group dictated what communication method was chosen by team members. Communication method is however largely chosen at an organizational level which would support that the level of perceived work group inclusion was affected by media richness levels and not the other way around. This is however speculation and most reasonable is to think of it as a two-way causality of uncertain strengths. A better spread of media richness used could also have benefited the analysis and provided more detailed results regarding the different levels of usage and not only general indication.

The study had a limited number of control variables and it is possible that including others would have affected the results. Among the most relevant would have been controlling for the gender composition of work groups, professions and to compare with companies in industries that are not male dominated. The global pandemic, economic downturn and difficulties in the labour market could also be factors affecting the respondents in ways the survey did not capture.

The response rate, 35,09%, was high in relation to the expected rate for a bachelor thesis study (Sebhatu, 2021), but low in relation to desired response rates (Bryman & Bell, 2015, pp. 242-245). A low response rate increases the risk of bias in the findings, something that must be taken into consideration when interpreting the results.

To test the validity of the inclusion measurement, the Cronbach's alpha was calculated for the ten Likert items, which returned a test scale alpha 0.9277 confirming the internal reliability of the measurements (appendix 9).

6. Analysis and discussion

6.1. Analysis

As concluded, the study's hypotheses were not supported and instead the opposite relationship was revealed. As the research question focused on how media richness related to perceived inclusion and not why this was, the research question has been answered. The analysis, however, interprets the results using the chosen theoretical frameworks.

6.1.1. Aggregate level

The mean levels of perceived belongingness, uniqueness and inclusion were all relatively high. According to Shore et al.'s (2011) framework, this is interpreted as the average employee experiencing inclusion in the work group. The mean uniqueness levels were slightly higher than the mean belongingness levels, suggesting a small tendency toward differentiation rather than assimilation according to Shore et al.'s matrix (appendix 1).

The only control variable with a significant estimate was controlling for whether employees begun their employment before the COVID-19 outbreak, being positive and significant for all three measures. This finding is in line with media richness theory, stating that face-to-face communication is the ideal form of communication, and could indicate that those who worked face-to-face before the outbreak already had established connections and experienced the benefits from working face-to-face, affecting the measures of belongingness, uniqueness and inclusion. Important to note is however that this estimate would also capture the general effect from being a long-time employee and having had more time to establish relationships with colleagues. This estimate should therefore be interpreted with caution.

As none of the stated hypotheses were supported, using the six themes of inclusion by Shore et al. 2018 to direct the hypotheses could be questioned. The authors believe, however, that the forming of hypotheses which were unable to be supported was instead derived from the lack of representative proxies and that several of them came from outdated studies.

6.1.2. Gender differences

The regression analysis demonstrated a gender difference for all three inclusion measures that were significant at a 1% level. The highest estimate was given for gender in relation to belongingness, but it was also high for uniqueness and inclusion.

The gender differences are supported by gender theory. Acker argues that inequality regimes are produced and reproduced by, among other things, organizing processes such as "informal interactions while doing the work" (Acker, 2006). Seeing work group

communication as such an interaction highlights that the same type of communication practices may have different implications for people of different genders.

Using the terminology of media richness theory, the interactions necessary for perceived inclusion could be considered an *equivocal* task (Daft & Lengel, 1984). If this was the case, the complex and ambiguous information sharing necessary for high levels of perceived inclusion would be most effectively accomplished by using rich media. Since this is only supported for women and not for men, media richness theory proves to be able to explain only certain facets of the findings.

The hypotheses that women would perceive higher levels of belongingness, uniqueness and inclusion the leaner the media used were based on previous research showing that the anonymity of using communication methods transmitting less rich information would be beneficial due to hindering any possible gender bias derived from surface-level characteristics (Triana et al., 2012). These studies, however, were mainly conducted as experiments with teams of participants who had no previous connection to each other and who only used one communication method each. The contrary results of this study might be derived from the fact that it was performed in a real-world scenario with work groups who communicated using several different methods parallel to each other and who had primarily built their professional relationships during face-to-face interactions before turning to remote work. These circumstances meant that women and others could not become anonymous during text-based communication, as in an experiment setting, because previous interactions informed what would otherwise have been communication exempt from status- and gender-marked cues. Also, it bears repeating that none of the studies used to form the hypotheses studied the exact combination of concepts that our study did, hence the difficulty in formulating hypotheses with great certainty.

6.2. Discussion

After analyzing the answer to the research question using the chosen theoretical frameworks, the following section turns to other theories to suggest different interpretations of the results. As these theories were not the core of the study, their use is by nature more speculative.

Social information processing theory (SIPT) posits that people communicating through lean media adapt to the lack of non-verbal cues by using language-based cues to form an impression of the interaction. This entails using uncertainty reduction strategies such as self-disclosure and question asking to offset the lack of social information inherent in the communication method (Walther, 1992 in Antheunis, Schouten, Valkenburg & Peter, 2012). This theory posits that people attempt to develop social relationships regardless of the type of media used, by “filling in the blanks” (Walther & Tong, 2014; Walther, Van Der Heide, Ramirez, Burgoon & Peña, 2015 in Brown, Fuller & Tatcher, 2016). This could suggest that no degree of media richness is more or less effective at contributing to

perceived inclusion. However, in this research field, lean media has been shown to make impressions of others less accurate and partially based on stereotypes (Johri, 2012 in Brown et al., 2016). This could potentially factor into the findings that perceived inclusion was positively correlated to lean media use for men but not for women and others, as bias towards women and other genders might affect this group more negatively than men when using lean media, where more stereotyping might be used to form opinions on the interaction.

Studies consistently show that women are more skilled than men in nonverbal sensitivity (Rosip & Hall, 2004). How this has been interpreted in relation to media richness, however, differs. For example, Dennis et al. had similar findings as this study regarding gender differences in media richness in relation to decision making performance, where all-female teams performed better than mixed and all-male teams when using rich media (Dennis et al., 1999). Dennis et al. explained their results by referring to the gender differences in nonverbal communication sensitivity and argued that, since women are more skilled at decoding nonverbal communication, they were more affected by the absence of these cues.

Dunaetz, Lisk & Shin (2015) reached the opposite conclusion when they studied gender differences in media richness preferences, finding that men preferred richer media, with the explanation that since men are less skilled in communication than women, they need richer media to a higher extent than women to avoid misunderstandings. They argued that since there is support for men in general being more goal oriented in their communication and women generally being more focused on relationship development in their communication, men need more cues in order to convey and decode a message.

In gender diverse teams, text communication has consistently been found to impair knowledge sharing and knowledge integration (Savicki, Kelley & Lingenfelter, 1996; Robert, Dennis & Ahuja, 2018), both of which are prerequisites for involvement in the work group, one of the six themes of inclusion by Shore et al. (2018). In these settings, women participate less (Adrianson, 2001; Barrett & Lally, 1999; Sussman & Tyson, 2000 in Robert et al., 2018) and according to Robert et al., there are two reasons for this; text communication lacks the nonverbal cues that inhibit aggressive behavior of men (Herring, 1995; Kiesler, Siegel & McGuire, 1984 in Robert et al. 2018) and text can often be misinterpreted as being more emotionally negative than the sender intended (Byron, 2008 in Robert et al. 2018) due to subtle cues, which women are better able to pick up on (Dennis et al., 1999; Gefen & Straub, 1997; Nowak, 2003 in Robert et al. 2018). This leads to text communication being interpreted very differently by people of different genders, creating a less inclusive environment for women.

If the gender differences found in this study are related to gender differences in nonverbal sensitivity, which is merely a speculation in this study, previous research has shown that these skills are attainable also for men. Schmid, Schmid Mast, Bombari & Mast (2011)

showed that priming men and women of information processing style had a positive effect on men when performing nonverbal decoding tasks, while they had no effect or a negative effect on women. This was interpreted as women already using a more favorable cognitive processing style while men could boost their performance to reach the women's levels. These findings suggest that the differing information processing styles are not derived from biological but rather socialized gender differences.

7. Conclusion

7.1. Summary

This study examined the relationship between perceived work group inclusion and media richness in face-to-face and virtual work settings for employees with office-based occupations at four Swedish companies in male-dominated industries. The subject was considered relevant to investigate because of an increase in remote work and efforts to ensure employees' perceptions of inclusion as a way of reaching the diversity goals of many organizations.

The study found that the leaner the media, the higher the inclusion rating on an aggregate group level. When examining gender differences, there was some support for the opposite; for women, rich media (video communication) had a high correlation with high inclusion ratings, while for men, lean media (text-based communication) had a high correlation with high inclusion ratings.

Even though the study did not attain significant results for all measures in order to compare all levels of media richness with perceived inclusion, the gender difference was significant, which was in itself an interesting and important finding.

7.2. Contributions of the study

7.2.1. Research implications

This study was the first to combine theory on work group inclusion, media richness and gender in organizations. As such, it contributed to reducing a theoretical research gap by supporting a connection between work group inclusion and media richness with strong gender differences. This proves the research intersection to deserve further theoretical development.

The findings were based on a large sample, making the study's results robust enough to use for generalizations on similar populations. The fact that a significant gender difference was found even in a country with one of the smallest gender gaps in the world suggests that the differences could be even more extensive in other parts of the world.

7.2.2. Implications for management practitioners

As remote work becomes increasingly common, it is valuable for managers to be aware of the relationship between different communication methods and perceived inclusion. This knowledge may inform the choice of communication methods for an organization or a team. If the speculation that there is a causal link where media richness levels affect perceived inclusion holds, this study's findings could be used either to tailor different

communication methods to employees with different genders, or to make targeted efforts to educate and train employees in communication styles and gender bias in virtual communication. Regardless of the causality, the finding that there are gender differences means that gender needs to be taken into consideration when deciding on communication methods.

The findings show a difference between the belongingness and uniqueness measures, which implies that uniqueness as a component of inclusion adds explanatory value. As most organizations who measure employee inclusion focus on the belongingness aspect, this study supports the value of adding the uniqueness component to get at more complete picture of employees' experiences in the work group.

7.2.3. Future research

Due to the nature of the study, no causal links were established. Future research may therefore be designed to gain such knowledge, to guide organizational policies. Also, several additional control variables (see section 5.4.) could be relevant to study in future research.

Gender is one of many diversity aspects that deserves attention in relation to virtual communication methods. Examining how different minorities perceive inclusion in relation to media richness would be a valuable addition to the research field.

Connecting the findings of this study to theories on nonverbal sensitivity, social information theory and other theories concerning communication and inter-personal factors in teams could add further explanation to the correlation found.

8. Bibliography

Acker, J. (1990). Hierarchies, Jobs, Bodies: A Theory of Gendered Organizations.

Gender & Society, 4(2), 139-158. 10.1177/089124390004002002

Acker, J. (2006). Inequality Regimes Gender, Class, and Race in Organizations. *Gender*

& Society, 20(4), 441-464. 10.1177/0891243206289499

Acker, J. (2012). Gendered organizations and intersectionality: problems and

possibilities. *Equality, Diversity and Inclusion an International Journal*, 31(3),

214-224. 10.1108/02610151211209072

Acquavita, S. P., Pittman, J., Gibbons, M., & Castellanos-Brown, K. (2009). Personal and Organizational Diversity Factors' Impact on Social Workers' Job Satisfaction:

Results from a National Internet-Based Survey. *Administration in Social Work*,

33(2), 151-166. 10.1080/03643100902768824

Adrianson, L. (2001). Gender and computer-mediated communication: group processes

in problem solving. *Computers in Human Behavior*, 17(1), 71-94. 10.1016/S0747-

5632(00)00033-9

Ahlqvist, M., & Lundqvist, A. (2020). *Hemarbete hösten 2020*. ().KANTAR Sifo.

<https://se.sodexo.com/files/live/sites/com->

[se/files/Dokument/Hemarbete%20ho%cc%88sten%202020 fo%cc%88r%20Sodex](https://se.sodexo.com/files/live/sites/com-)

[o.pdf](https://se.sodexo.com/files/live/sites/com-)

Alvesson, M., Billing, Y. D., & Torhell, S. (2011). *Kön och organisation* (2nd ed.).

Studentlitteratur.

Antheunis, M. L., Schouten, A. P., Valkenburg, P. M., & Peter, J. (2012). Interactive uncertainty reduction strategies and verbal affection in computer-mediated communication. *Communication Research*, 39(6), 757-780.

10.1177/0093650211410420

Arn Falk, P., & Kogg, B. (2003). Service transformation—managing a shift from business travel to virtual meetings. *Journal of Cleaner Production*, 11(8), 859-872.

10.1016/S0959-6526(02)00158-0

Avery Derek, R., McKay, P. F., Wilson, D. C., & Tonidandel, S. (2007). Unequal attendance: the relationships between race, organizational diversity cues, and absenteeism. *Personnel Psychology*, 60(4), 875-902. 10.1111/j.1744-

6570.2007.00094.x

Bae, K. B., Sabharwal, M., Smith, A. E., & Berman, E. (2017). Does Demographic Dissimilarity Matter for Perceived Inclusion? Evidence From Public Sector Employees. *Review of Public Personnel Administration*, 37(1), 4-22.

10.1177/0734371X16671367

Barrett, E., & Lally, V. (1999). Gender differences in an on-line learning environment. *Journal of Computer Assisted Learning*, 15(1), 48-60. 10.1046/j.1365-

2729.1999.151075.x

- Barry, B., & Fulmer, I. S. (2004). The Medium and the Message: The Adaptive Use of Communication Media in Dyadic Influence. *The Academy of Management Review*, 29(2), 272-292. 10.2307/20159033
- Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin*, 117: 497-529
- Bilimoria, D., Joy, S., & Liang, X. (2008). Breaking barriers and creating inclusiveness: Lessons of organizational transformation to advance women faculty in academic science and engineering. *Human Resource Management*, 47(3), 423-441. 10.1002/hrm.20225
- Brewer, M. B. (1991). The social self: On being the same and different at the same time. *Personality and Social Psychology Bulletin*, 17, 475-482.
- Brimhall, K. C., Lizano, E. L., & Mor Barak, M.,E. (2014). The mediating role of inclusion: A longitudinal study of the effects of leader–member exchange and diversity climate on job satisfaction and intention to leave among child welfare workers. *Children and Youth Services Review*, 40, 79-88. 10.1016/j.childyouth.2014.03.003
- Britton, D. M., & Logan, L. (2008). Gendered Organizations: Progress and Prospects. *Sociology Compass*, 2(1), 107-121. 10.1111/j.1751-9020.2007.00071.x

- Brown, S. A., Fuller, R., & Thatcher, S. M. B. (2016). Impression formation and durability in mediated communication. *Journal of the Association for Information Systems*, 17(9), 614-647. 10.17705/1jais.00436
- Bryman, A., & Bell, E. (2015). *Business Research Methods* (4th ed.). Oxford University Press.
- Byron, K. (2008). Carrying Too Heavy a Load? The Communication and Miscommunication of Emotion by Email. *The Academy of Management Review*, 33(2), 309-327. 10.5465/AMR.2008.31193163
- Catalyst. (2020). *The Impact of Covid-19 on Workplace Inclusion: Survey*. Catalyst. <https://www.catalyst.org/research/workplace-inclusion-covid-19>
- Chung, B. G., Ehrhart, K. H., Shore, L. M., Randel, A. E., Dean, M. A., & Kedharnath, U. (2020). Work Group Inclusion: Test of a Scale and Model. *Group & Organization Management*, 45(1), 75-102. 10.1177/1059601119839858
- Connell, R. W., & Messerschmidt, J. W. (2005). Hegemonic Masculinity: Rethinking the Concept. *Gender & Society*, 19(6), 829-859. 10.1177/0891243205278639
- Daft, R. L., & Lengel, R. H. (1984). Information richness: A new approach to managerial behavior and organizational design. *Research in Organizational Behavior*, 6:191-233
- Daft, R. L., & Lengel, R. H. (1986). Organizational Information Requirements, Media Richness and Structural Design. *Management Science*, 32(5), 554-571. 10.1287/mnsc.32.5.554

Daim, T., Ha, A., Reutiman, S., Hughes, B., Pathak, U., Bynum, W., & Bhatla, A.

(2012). Exploring the communication breakdown in global virtual teams.

International Journal of Project Management - INT J PROJ MANAG,

3010.1016/j.ijproman.2011.06.004

Dennis, A. R., Kinney, S. T., & Hung, Y. C. (1999). Gender Differences in the Effects of Media Richness. *Small Group Research*, 30(4), 405-437.

10.1177/104649649903000402

Dennis, A. R., & Valacich, J. S. (1999). Rethinking media richness: Towards a theory of media synchronicity. Paper presented at the 12.

<https://www.scopus.com/inward/record.uri?eid=2-s2.0->

[0032759572&partnerID=40&md5=0cff8a5fca4c9643bfa08c1ba48a3a6b](https://www.scopus.com/inward/record.uri?eid=2-s2.0-0032759572&partnerID=40&md5=0cff8a5fca4c9643bfa08c1ba48a3a6b)

Dunaetz, D. R., Lisk, T. C., & Shin, M. M. (2015). Personality, Gender, and Age as Predictors of Media Richness Preference. *Advances in Multimedia*, 2015, 1-9.

10.1155/2015/243980

Ellen, E. K., & Zonia, S. C. (1993). Assessing Diversity Climate: A Field Study of Reactions to Employer Efforts to Promote Diversity. *Journal of Organizational Behavior*, 14(1), 61-81. 10.1002/job.4030140107

Ellingrud, K., Krishnan, M., Krivkovich, A., Robinson, N., Yee, L., Kukla, K., Mendy, A., Sancier-Sultan, S. & Tierney, B. (2020). *Diverse employees are struggling the most during COVID-19—here's how companies can respond*. McKinsey & Company. <https://www.mckinsey.com/featured-insights/diversity-and->

[inclusion/diverse-employees-are-struggling-the-most-during-covid-19-heres-how-companies-can-respond#](#)

Equileap. (2021). *Gender Equality Global Report & Ranking - 2021 Edition*. ().

<https://equileap.com/wp-content/uploads/2021/03/Global-Report-2021.pdf>

Ferdman, B. M., & Deane, B. R. (2013). *Diversity at Work: The Practice of Inclusion*.
John Wiley & Sons, Incorporated.

Gefen, D., & Straub, D. W. (1997). Gender Differences in the Perception and Use of E-Mail: An Extension to the Technology Acceptance Model. *MIS Quarterly*, 21(4), 389-400. 10.2307/249720

Gilson, L. L., Maynard, M. T., Jones Young, N., C., Vartiainen, M., & Hakonen, M. (2015). Virtual Teams Research: 10 Years, 10 Themes, and 10 Opportunities. *Journal of Management*, 41(5), 1313-1337. 10.1177/0149206314559946

Gonzalez, J. A., & Denisi, A. S. (2009). Cross-Level Effects of Demography and Diversity Climate on Organizational Attachment and Firm Effectiveness. *Journal of Organizational Behavior*, 30(1), 21-40. 10.1002/job.498

Guillaume, Y. R. F., Brodbeck, F. C., & Riketta, M. (2012). Surface- and deep-level dissimilarity effects on social integration and individual effectiveness related outcomes in work groups: A meta-analytic integration. *Journal of Occupational and Organizational Psychology*, 85(1), 80-115. 10.1111/j.2044-8325.2010.02005.x

Hays-Thomas, R., & Bendick, M. (2013). Professionalizing Diversity and Inclusion Practice: Should Voluntary Standards Be the Chicken or the Egg? *Industrial and*

Organizational Psychology; Ind.Organ.Psychol, 6(3), 193-205.

10.1111/iops.12033

Herring, S. C. (1995). Gender and Democracy in Computer-Mediated Communication.

Nordlyd (Tromsø, Norway), 23, 1.

Hope Pelled, L., Ledford, J., Gerald E., & Albers Mohrman, S. (1999). Demographic

Dissimilarity and Workplace Inclusion. *Journal of Management Studies*, 36(7),

1013-1031. 10.1111/1467-6486.00168

Jansen, W. S., Otten, S., & van der Zee, K.,I. (2017). Being different at work: How

gender dissimilarity relates to social inclusion and absenteeism. *Group Processes*

& Intergroup Relations, 20(6), 879-893. 10.1177/1368430215625783

Johri, A. (2012). From a distance: Impression formation and impression accuracy

among geographically distributed coworkers. *Computers in Human Behavior*,

28(6), 1997-2006. 10.1016/j.chb.2012.06.038

Kanter, R. M. (1993). *Men and women of the corporation* (2nd ed.). BasicBooks.

Kiesler, S., Siegel, J., & McGuire, T. W. (1984). Social psychological aspects of

computer-mediated communication. *American Psychologist*, 39(10), 1123-1134.

10.1037/0003-066X.39.10.1123

Leslie, L. M., & Gelfand, M. J. (2008). The who and when of internal gender

discrimination claims: An interactional model. *Organizational Behavior and*

Human Decision Processes, 107(2), 123-140. 10.1016/j.obhdp.2008.02.004

- Lind, M. R. (1999). The gender impact of temporary virtual work groups. *IEEE Transactions on Professional Communication*, 42(4), 276-285. 10.1109/47.807966
- Lindsley G. Boiney, P. (2001). Gender Impacts Virtual Work Teams - Men want clear objectives while women value communication. *Graziadio Business Review*, 2001 Volume 4 Issue 4 <https://gbr.pepperdine.edu/2010/08/gender-impacts-virtual-work-teams/>
- Liu, Y. C. (2009). An exploration of gender impact in virtual teams. Paper presented at the , 1 360. <https://aisel.aisnet.org/amcis2009/43/>
- Luca, M., Stanton, C. T., Bartik, A. W., Cullen, Z. B., & Glaeser, E. L. (2020). *What Jobs are Being Done at Home During the Covid-19 Crisis? Evidence from Firm-Level Surveys*. National Bureau of Economic Research. 10.3386/w27422
- Mannix, E., & Neale, M. A. (2005). What Differences Make a Difference? The Promise and Reality of Diverse Teams in Organizations. *Psychological Science in the Public Interest; Psychol Sci Public Interest*, 6(2), 31-55. 10.1111/j.1529-1006.2005.00022.x
- Martins, L. L., Gilson, L. L., & Maynard, M. T. (2004). Virtual Teams: What Do We Know and Where Do We Go From Here? *Journal of Management*, 30(6), 805-835. 10.1016/j.jm.2004.05.002
- McKAY, P. F., Avery, D. R., & Morris, M. A. (2009). A tale of two climates: diversity climate from subordinates' and managers' perspectives and their role in store unit

- sales performance. *Personnel Psychology*, 62(4), 767-791. 10.1111/j.1744-6570.2009.01157.x
- Mehtab, K., Rehman, A. u., Ishfaq, S., & Jamil, R. A. (2017). Virtual Leadership: A Review Paper. *Mediterranean Journal of Social Sciences*, 8(4), 183-193. 10.2478/mjss-2018-0089
- Mor Barak, M.,E., Levin, A., Nissly, J. A., & Lane, C. J. (2006). Why do they leave? Modeling child welfare workers' turnover intentions. *Children and Youth Services Review*, 28(5), 548-577. 10.1016/j.childyouth.2005.06.003
- Mor-Barak, M., & Cherin, D. A. (1998). A Tool to Expand Organizational Understanding of Workforce Diversity: Exploring a Measure of Inclusion-Exclusion. *Administration in Social Work*, 22(1), 47-64. 10.1300/J147v22n01_04
- Morrison-Smith, S., & Ruiz, J. (2020). Challenges and barriers in virtual teams: a literature review. *SN Applied Sciences*, 2(6)10.1007/s42452-020-2801-5
- Nembhard, I. M., & Edmondson, A. C. (2006). Making It Safe: The Effects of Leader Inclusiveness and Professional Status on Psychological Safety and Improvement Efforts in Health Care Teams. *Journal of Organizational Behavior*, 27(7), 941-966. 10.1002/job.413
- Nishii, L. H. (2013). The benefits of climate for inclusion for gender-diverse groups. *Academy of Management Journal*, 56(6), 1754-1774. 10.5465/amj.2009.0823

Nowak, K. L. (2003). Sex Categorization in Computer Mediated Communication

(CMC): Exploring the Utopian Promise. *Media Psychology*, 5(1), 83-103.

10.1207/S1532785XMEP0501_4

Parks-Stamm, E., Heilman, M. E., & Hearn, K. A. (2008). Motivated to Penalize:

Women's Strategic Rejection of Successful Women. *Personality & Social*

Psychology Bulletin; Pers Soc Psychol Bull, 34(2), 237-247.

10.1177/0146167207310027

Ragins, B. R., & Cornwell, J. M. (2001). Pink Triangles: Antecedents and

Consequences of Perceived Workplace Discrimination Against Gay and Lesbian

Employees. *Journal of Applied Psychology; J Appl Psychol*, 86(6), 1244-1261.

10.1037/0021-9010.86.6.1244

RFSL. (2016). *To Ask About Gender and Trans in Surveys*. RFSL.

<https://www.rfsl.se/en/lgbtq-facts/to-ask-about-gender-and-trans-in-surveys/>

Roberson, Q. M., & Stevens, C. K. (2006). Making Sense of Diversity in the

Workplace: Organizational Justice and Language Abstraction in Employees'

Accounts of Diversity-Related Incidents. *Journal of Applied Psychology; J Appl*

Psychol, 91(2), 379-391. 10.1037/0021-9010.91.2.379

Robert, L. P., Jr., Dennis, A. R., & Ahuja, M. K. (2018). Differences are different:

Examining the effects of communication media on the impacts of racial and gender

diversity in decision-making teams. *Information Systems Research*, 29(3), 525-545.

10.1287/isre.2018.0773

Rosip, J. C., & Hall, J. A. (2004). Knowledge of nonverbal cues, gender, and nonverbal decoding accuracy. *Journal of Nonverbal Behavior*, 28(4), 267-286.

10.1007/s10919-004-4159-6

Savicki, V., Kelley, M., & Lingenfelter, D. (1996). Gender, group composition, and task type in small task groups using computer-mediated communication. *Computers in Human Behavior*, 12(4), 549-565. 10.1016/S0747-5632(96)00024-6

Scheid, T. L. (2005). Stigma as a barrier to employment: Mental disability and the Americans with Disabilities Act. *International Journal of Law and Psychiatry; Int J Law Psychiatry*, 28(6), 670-690. 10.1016/j.ijlp.2005.04.003

Schmid, P. C., Schmid Mast, M., Bombari, D., & Mast, F. W. (2011). Gender Effects in Information Processing on a Nonverbal Decoding Task. *Sex Roles*, 65(1), 102-107. 10.1007/s11199-011-9979-3

Schwartz, N. D. (2020, Sept. 6.). Working From Home Poses Hurdles for Employees of Color. *The New York Times*
<https://www.nytimes.com/2020/09/06/business/economy/working-from-home-diversity.html>

Sebhatu, A. (2021). *Doing quantitative research (part 2)*

Shore, L. M., Cleveland, J. N., & Sanchez, D. (2018). Inclusive workplaces: A review and model. *Human Resource Management Review*, 28(2), 176-189. 10.1016/j.hrmr.2017.07.003

- Shore, L. M., Randel, A. E., Chung, B. G., Dean, M. A., Holcombe Ehrhart, K., & Singh, G. (2011). Inclusion and Diversity in Work Groups: A Review and Model for Future Research. *Journal of Management*, 37(4), 1262-1289.
10.1177/0149206310385943
- Snyder, C. R., & Fromkin, H. L. (1980). *Uniqueness, the human pursuit of difference*. Plenum.
- Soboroff, S. D., Kelley, C. P., & Lovaglia, M. J. (2020). Group Size, Commitment, Trust, and Mutual Awareness in Task Groups. *Sociological Quarterly*, 61(2), 334-346. 10.1080/00380253.2019.1625735
- Sole, D., & Edmondson, A. (2002). Situated Knowledge and Learning in Dispersed Teams. *British Journal of Management*, 13, S17-S34. 10.1111/1467-8551.13.s2.3
- Sussman, N. M., & Tyson, D. H. (2000). Sex and power: gender differences in computer-mediated interactions. *Computers in Human Behavior*, 16(4), 381-394.
10.1016/S0747-5632(00)00020-0
- Tang, N., Jiang, Y., Chen, C., Zhou, Z., Chen, C. C., & Yu, Z. (2015). Inclusion and inclusion management in the Chinese context: an exploratory study. *International Journal of Human Resource Management*, 26(6), 856-874.
10.1080/09585192.2014.985326
- Thomas, D. A., & Ely, R. J. (1996). Making differences matter: a new paradigm for managing diversity. *Harvard Business Review*, 74(5), 79.

Triana, M. D., Carmen, Kirkman, B. L., & Wagstaff, M. F. (2012). Does the Order of Face-to-Face and Computer-Mediated Communication Matter in Diverse Project Teams? An Investigation of Communication Order Effects on Minority Inclusion and Participation. *Journal of Business and Psychology*, 27(1), 57-70.

<http://dx.doi.org.ez.hhs.se/10.1007/s10869-011-9232-7>

Tsui, A. S., Egan, T. D., & III, C. A. O. (1992). Being Different: Relational Demography and Organizational Attachment. *Administrative Science Quarterly*, 37(4), 549-579. 10.2307/2393472

van der Kleij, R., Lijkwan, J. T. E., Rasker, P. C., & De Dreu, Carsten K. W. (2009). Effects of time pressure and communication environment on team processes and outcomes in dyadic planning. *International Journal of Human-Computer Studies*, 67(5), 411-423. 10.1016/j.ijhcs.2008.11.005

Vohra, N., Chari (Coordinators), V., Mathur, P., Sudarshan, P., Verma, N., Mathur, N., Thakur, P., Chopra, T., Srivastava, Y., Gupta, S., Dasmahapatra, V., Fonia, S., & Gandhi, H. K. (2015). Inclusive Workplaces: Lessons from Theory and Practice. *Vikalpa*, 40(3), 324-362. 10.1177/0256090915601515

Walther, J. B. (1992). Interpersonal Effects in Computer-Mediated Interaction: A Relational Perspective. *Communication Research*, 19(1), 52-90.
10.1177/009365092019001003

Walther, J. B., & Tong, S. T. (2014). *Inventing partners in computer-mediated communication: How CMC sustains self-fulfilling prophecies and relational attributions* 10.1007/978-3-319-07632-4_49

https://www.scopus.com/inward/record.uri?eid=2-s2.0-84958545038&doi=10.1007%2f978-3-319-07632-4_49&partnerID=40&md5=8e164a8468856d23418301c7b2f9bad7

Walther, J. B., Van Der Heide, B., Ramirez, A., Burgoon, J. K., & Peña, J. (2015). Interpersonal and hyperpersonal dimensions of computer-mediated communication. (pp. 1-22)10.1002/9781118426456.ch1

Wasserman, I. C., Gallegos, P. V., & Ferdman, B. M. (2012). Dancing with resistance: Leadership challenges in fostering a culture of inclusion. (pp. 175-200)10.4324/9780203809761

Wharton, A. S., & Baron, J. N. (1987). So Happy Together? The Impact of Gender Segregation on Men at Work. *American Sociological Review*, 52(5), 574-587. 10.2307/2095595

Wharton, A. S., & Baron, J. N. (1991). Satisfaction?: The Psychological Impact of Gender Segregation on Women at Work. *Sociological Quarterly*, 32(3), 365-387. 10.1111/j.1533-8525.1991.tb00164.x

Williams, C. L. (1992). The Glass Escalator: Hidden Advantages for Men in the "Female" Professions. *Social Problems (Berkeley, Calif.)*, 39(3), 253-267. 10.1525/sp.1992.39.3.03x0034h

World Economic Forum. (2021). *Global Gender Gap Index 2020*.

<https://reports.weforum.org/global-gender-gap-report-2020/the-global-gender-gap-index-2020/selected-country-performances/>

9. Appendices

9.1. Appendix 1: Inclusion framework, Shore et al. (2011, p. 1266)

	Low Belongingness	High Belongingness
Low Value in Uniqueness	<p>Exclusion</p> <p>Individual is not treated as an organizational insider with unique value in the work group but there are other employees or groups who are insiders.</p>	<p>Assimilation</p> <p>Individual is treated as an insider in the work group when they conform to organizational/dominant culture norms and downplay uniqueness.</p>
High Value in Uniqueness	<p>Differentiation</p> <p>Individual is not treated as an organizational insider in the work group but their unique characteristics are seen as valuable and required for group/ organization success.</p>	<p>Inclusion</p> <p>Individual is treated as an insider and also allowed/encouraged to retain uniqueness within the work group.</p>

9.2. Appendix 2: Self-completion questionnaire

<i>English version</i>	<i>Swedish version</i>
<p>Inclusion in the work group</p> <p>Welcome to participate in this survey, a part of a study by Maria Erlansson and Valter Arnesson, students at the Stockholm School of Economics.</p> <p>The purpose of this study is to investigate employees' perception of inclusion in their work group linked to methods of communication. The study will be used in a bachelor thesis in management and will be published after completion.</p>	<p>Inkludering i arbetsgruppen</p> <p>Välkommen att delta i denna enkätundersökning, som ingår i en studie av Maria Erlansson och Valter Arnesson, studenter vid Handelshögskolan i Stockholm.</p> <p>Syftet med studien är att undersöka medarbetares upplevelser av inkludering i sin arbetsgrupp kopplat till kommunikationssätt. Studien kommer att ligga till grund för en kandidatuppsats inom företagsstyrning och kommer efter slutförande att publiceras.</p>

<p>The survey takes about 5 minutes to answer and consists of multiple choice questions.</p> <p><i>Information regarding data protection</i></p> <p>All information shared in this survey is anonymous and confidential. The thesis that will be based on this survey will not contain any information that could lead to participants being identified.</p> <p>Your employer will not be able to identify you as a participant.</p> <p>Participation in this survey is voluntary and can be cancelled at any time. At cancellation of participation, your data will be deleted permanently.</p> <p>All data is stored and managed in a secure way by the Stockholm School of Economics and will be permanently deleted after completion of the project. No personal data will be published.</p> <p>If you want to read more about how the Stockholm School of Economics enforces your rights according to GDPR, please visit https://www.hhs.se/en/about-us/data-protection/</p>	<p>Enkäten tar cirka 5 min att fylla i och består av flervälsfrågor.</p> <p><i>Information om datahantering</i></p> <p>All information du delar i undersökningen är anonym och konfidentiell. Den uppsats som skrivs med denna undersökning som grund kommer inte att innehålla någon information som skulle kunna leda till att du som deltagare kan identifieras.</p> <p>Din arbetsgivare kommer inte kunna identifiera dig som deltagare.</p> <p>Medverkan i denna undersökning är frivillig och kan när som helst avbrytas. Vid avbruten medverkan raderas dina insamlade data permanent.</p> <p>Alla data förvaras och hanteras på ett säkert sätt av Handelshögskolan i Stockholm och kommer att raderas permanent när projektet är slutfört. Inga personliga data kommer att publiceras.</p> <p>Om du vill fördjupa dig i hur Handelshögskolan tillvaratar dina rättigheter enligt GDPR, vänligen besök https://www.hhs.se/en/about-us/data-protection/</p>
<p>I have read the information regarding data protection and agree to participate in the study.</p> <ul style="list-style-type: none"> ▪ Yes, continue to the study. ▪ No thanks, I do not want to participate in this study. 	<p>Jag har tagit del av informationen om datahantering och samtycker till att medverka i studien.</p> <ul style="list-style-type: none"> ▪ Ja, fortsatt till studien. ▪ Nej tack, jag vill inte medverka i denna studie.
<p>1. What is your gender? <i>By gender we mean gender</i></p>	<p>1. Vilket kön har du? <i>Med kön menar vi könsidentitet,</i></p>

<p><i>identity, i.e. the gender you feel like.</i></p> <ul style="list-style-type: none"> ▪ Woman ▪ Man ▪ Non-binary ▪ Other option ▪ Uncertain ▪ Prefer not to answer 	<p><i>alltså det kön du själv känner dig som.</i></p> <ul style="list-style-type: none"> ▪ Kvinna ▪ Man ▪ Ickebinär ▪ Annat alternativ ▪ Osäker ▪ Vill ej svara
<p>2. How old are you?</p> <ul style="list-style-type: none"> ▪ Younger than 20 years old ▪ 20-29 years old ▪ 30-39 years old ▪ 40-49 years old ▪ 50-59 years old ▪ 60-69 years old ▪ 70 years or older 	<p>2. Hur gammal är du?</p> <ul style="list-style-type: none"> ▪ Under 20 år ▪ 20-29 år ▪ 30-39 år ▪ 40-49 år ▪ 50-59 år ▪ 60-69 år ▪ 70 år eller äldre
<p>3. How long have you been working for your current employer?</p> <ul style="list-style-type: none"> ▪ I started working for my employer BEFORE the COVID-19 outbreak (February 2020). ▪ I started working for my employer AFTER or at the SAME TIME AS the COVID-19 outbreak (February 2020). 	<p>3. Hur länge har du arbetat för din nuvarande arbetsgivare?</p> <ul style="list-style-type: none"> ▪ Jag började arbeta för min arbetsgivare INNAN coronapandemins utbrott (februari 2020). ▪ Jag började arbeta för min arbetsgivare EFTER eller ungefär SAMTIDIGT som coronapandemins utbrott (februari 2020).
<p>4. How did you mostly work BEFORE the COVID-19 outbreak (February 2020)?</p> <ul style="list-style-type: none"> ▪ At my workplace (for example office building). ▪ Remotely. ▪ Approximately as much at my workplace as remotely. 	<p>4. Hur arbetade du mestadels INNAN coronapandemins utbrott (februari 2020)?</p> <ul style="list-style-type: none"> ▪ På min arbetsplats (exempelvis kontorsbyggnad) ▪ På distans. ▪ Ungefär lika mycket på arbetsplatsen som på distans.
<p>5. How have you mostly been working AFTER the COVID-19 outbreak (February 2020)?</p>	<p>5. Hur har du mestadels arbetat EFTER coronapandemins utbrott (februari 2020)?</p>

<ul style="list-style-type: none"> ▪ At my workplace (for example office building). ▪ Remotely. ▪ Approximately as much at my workplace as remotely. 	<ul style="list-style-type: none"> ▪ På min arbetsplats (exempelvis kontorsbyggnad) ▪ På distans. ▪ Ungefär lika mycket på arbetsplatsen som på distans.
<p>The past month in your closest work group</p> <p>The following questions concern the contact with your closest work group during the past month. Only include the time you have spent interacting with this work group and not communication with people outside your work group or independent work.</p> <p>Choose the option that best suits your experience. If no alternative suits you, choose the alternative closest to your experience.</p>	<p>Den senaste månaden i din närmaste arbetsgrupp</p> <p>Följande frågor handlar om kontakten med din närmaste arbetsgrupp under den senaste månaden. Inkludera endast den tid du ägnar åt kommunikation och samarbete med denna arbetsgrupp och inte tid som du har kontakt med personer utanför arbetsgruppen eller tid du ägnar åt självständigt arbete.</p> <p>Välj det alternativ som stämmer bäst överens med din upplevelse. Om inget alternativ skulle passa, välj det alternativ som är närmast din upplevelse.</p>
<p>6. How big is your closest work group (including yourself)? <i>If you work an equal amount in several groups, choose one of them.</i></p> <ul style="list-style-type: none"> ▪ 2 people ▪ 3-4 people ▪ 5-9 people ▪ 10 people or more 	<p>6. Hur stor är den arbetsgrupp du arbetar närmast (inklusive dig själv)? <i>Om du arbetar lika mycket i flera olika arbetsgrupper, välj en av dem.</i></p> <ul style="list-style-type: none"> ▪ 2 personer ▪ 3-4 personer ▪ 5-9 personer ▪ 10 personer eller fler
<p>7. When interacting with your closest work group during the past month, how much have you used the following types of communication?</p> <ul style="list-style-type: none"> ▪ Never ▪ Less than 1 hour per workday ▪ 1-2 hours per workday ▪ 3-4 hours per workday 	<p>7. I kontakten med din närmaste arbetsgrupp under den senaste månaden, hur ofta har du använt följande typ av kommunikation?</p> <ul style="list-style-type: none"> ▪ Aldrig ▪ Mindre än 1 timme per arbetsdag ▪ 1-2 timmar per arbetsdag ▪ 3-4 timmar per arbetsdag ▪ Över 4 timmar per arbetsdag

<ul style="list-style-type: none"> ▪ More than 4 hours per workday (One answer per alternative below) ▪ Face to face (meetings and conversations at a physical office) ▪ Video meetings with both sound and image (Zoom, Teams) ▪ Phone calls or digital meetings with only sound ▪ Text-based communication (email, chat, sms, Slack) 	<p>(One answer per alternative below)</p> <ul style="list-style-type: none"> ▪ Ansikte mot ansikte (möten och samtal på fysiskt kontor) ▪ Videomöten med både ljud och bild (Zoom, Teams) ▪ Telefonsamtal eller digitala möten med endast ljud ▪ Textbaserad kommunikation (e-post, chatt, sms, Slack)
<p>8. How have you experienced the interactions with your closest work group during the past month?</p> <p>Rate to what extent you agree with the following statements on a scale from 1 to 5, where 1 = Strongly disagree and 5 = Strongly agree. (One answer per question below)</p> <ul style="list-style-type: none"> ▪ I am treated as a valued member of my work group. ▪ I belong in my work group. ▪ I am connected to my work group. ▪ I believe that my work group is where I am meant to be. ▪ I feel that people really care about me in my work group. ▪ I can bring aspects of myself to this work group that others in the group don't have in common with me. ▪ People in my work group listen to me even when my views are dissimilar. ▪ While at work, I am comfortable expressing opinions that diverge from my group. 	<p>8. Hur har du den senaste månaden upplevt interaktionen med din närmaste arbetsgrupp?</p> <p>Ange i vilken grad du instämmer med följande påståenden på en skala från 1 till 5, där 1 = Instämmer inte alls och 5 = Instämmer helt. (One answer per question below)</p> <ul style="list-style-type: none"> ▪ Jag blir behandlad som en värdefull medlem i min arbetsgrupp. ▪ Jag hör hemma i min arbetsgrupp. ▪ Jag känner gemenskap med min arbetsgrupp. ▪ Jag anser att min arbetsgrupp är den rätta för mig. ▪ Jag känner att andra i arbetsgruppen verkligen bryr sig om mig. ▪ Jag kan bidra med egenskaper till gruppen som de andra inte har. ▪ De andra i arbetsgruppen lyssnar på mig även om mina åsikter skiljer sig från deras. ▪ I arbetet är jag bekväm med att uttrycka åsikter som skiljer sig från gruppens.

<ul style="list-style-type: none"> ▪ I can share a perspective on work issues that is different from my group members. ▪ When my group's perspective becomes too narrow, I am able to bring up a new point of view. 	<ul style="list-style-type: none"> ▪ Jag kan komma med perspektiv på arbetsrelaterade frågor som skiljer sig från mina gruppmedlemmars. ▪ När min grupps perspektiv blir alltför snävt så kan jag ta upp en ny infallsvinkel.
<p>9. When do you feel the most included in your closest work group?</p> <ul style="list-style-type: none"> ▪ I feel more included when I am at the workplace. ▪ I feel more included when working remotely. ▪ I do not experience any difference. ▪ I can not compare the two as I have only worked in one of the settings. 	<p>9. När känner du dig mest inkluderad i din närmaste arbetsgrupp?</p> <ul style="list-style-type: none"> ▪ Jag känner mig mer inkluderad när jag är på arbetsplatsen. ▪ Jag känner mig mer inkluderad när jag jobbar på distans. ▪ Jag upplever ingen skillnad. ▪ Kan ej jämföra, då jag enbart arbetat på ett av sätten.
<p>10. What do you think the theme of this survey has been?</p> <ul style="list-style-type: none"> ▪ The contact with my colleagues. ▪ My breaks from work. 	<p>10. Vad uppfattar du att den här enkäten har handlat om?</p> <ul style="list-style-type: none"> ▪ Kontakten med mina kollegor. ▪ Mina pauser från arbetet.

9.3. Appendix 3: Survey coding

Variable name	Variable type	Coding
Gender	Categorical	0 = Woman 1 = Man 2 = Non-binary 3 = Other option 4 = Unsure 5 = Do not want to answer
Age	Categorical	0 = Younger than 20 years old 1 = 20-29 years old 2 = 30-39 years old 3 = 40-49 years old 4 = 50-59 years old

		5 = 60-69 years old 6 = 70 years or older
Work_Group_Size	Ordinal	0 = 2 people 1 = 3-4 people 2 = 5-9 people 3 = 10 people or more
Long_time_employee	Categorical	0 = I started working for my employer BEFORE the COVID-19 outbreak (February 2020). 1 = I started working for my employer AFTER or at the SAME TIME AS the COVID-19 outbreak (February 2020).
Company_control	Categorical	0 = Company A 1 = Company B 2 = Company C 3 = Company D
More_Digital_Method	Categorical	0 = Have not switched to a more digital work method 1 = Have switched to a more digital work method
Same_Work_Method	Categorical	0 = Have switched work method 1 = Have not switched work method
Less_Digital_Method	Categorical	0 = Have not switched to a less digital work method 1 = Have switched to a less digital work method
Time_FTF	Ordinal	0 = Never 1 = Less than 1 hour per workday 2 = 1-2 hours per workday 3 = 3-4 hours per workday 4 = More than 4 hours per workday
Time_Video	Ordinal	0 = Never 1 = Less than 1 hour per workday 2 = 1-2 hours per workday 3 = 3-4 hours per workday 4 = More than 4 hours per workday
Time_Audio	Ordinal	0 = Never 1 = Less than 1 hour per workday 2 = 1-2 hours per workday 3 = 3-4 hours per workday 4 = More than 4 hours per workday
Time_Text	Ordinal	0 = Never

		1 = Less than 1 hour per workday 2 = 1-2 hours per workday 3 = 3-4 hours per workday 4 = More than 4 hours per workday
Belongingness	Continuous	$= (\text{belong1} + \text{belong2} + \text{belong3} + \text{belong4} + \text{belong5})/5$
Uniqueness	Continuous	$= (\text{unique1} + \text{unique2} + \text{unique3} + \text{unique4} + \text{unique5})/5$
Inclusion	Continuous	$= (\text{belong1} + \text{belong2} + \text{belong3} + \text{belong4} + \text{belong5} + \text{unique1} + \text{unique2} + \text{unique3} + \text{unique4} + \text{unique5})/10$

9.4. Appendix 4. Summary of Company Characteristics

Company	Industry	Number offered to take survey	Number taking the survey	Response rate	Percent men of sample	Percent men of respondents
A	Automotive	350	94	26.86%	68%*	61.70%
B	Construction (finance and HR departments)	105	77	77.33%	19.05%	19.48%
C	Investment	95	18	18.95%	47.37%	38.89%
D	Telecommunications	2585	911	35.24%	68.98%	60.15%
Total	-	3135	1100	35.09%	66.54%	57.09%

*Taken from company's annual report, showing the mean gender ratio from 2019. This was used because information regarding the current gender ratio was not received from the participating company.

9.5. Appendix 5: Correlation table of control variables

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(1) gender	1.000						
(2) age	0.123	1.000					
(3) long_time_employee	0.086	0.218	1.000				
(4) more_digital_method	-0.108	-0.051	-0.092	1.000			
(5) same_method	0.108	0.051	0.092	-1.000	1.000		
(6) less_digital_method	1.000	
(7) group_size	0.036	-0.056	-0.027	0.005	-0.005	.	1.000

9.6. Appendix 6: Correlation table of media richness measures

Variables	(1)	(2)	(3)	(4)
(1) time_ftf	1.000			

(2) time_video	0.083	1.000		
(3) time_audio	0.024	0.090	1.000	
(4) time_text	0.020	0.210	0.388	1.000

9.7. Appendix 7: Correlation table of dependent measures

Variables	(1)	(2)	(3)
(1) belongingness	1.000		
(2) uniqueness	0.670	1.000	
(3) inclusion	0.929	0.897	1.000

9.8. Appendix 8 Media richness by gender

	Women and others			Men		
	Freq.	Percent	Cum.	Freq.	Percent	Cum.
Time spent using text communication						
Never	11	1.01	1.01	3	0.65	0.65
Less than 1 hour	326	29.91	30.92	129	27.86	28.51
1-2 hours	390	35.78	66.70	154	33.26	61.77
3-4 hours	162	14.86	81.56	78	16.85	78.62
More than 4 hours	201	18.44	100.00	99	21.38	100.00
Time spent using audio communication						
Never	87	7.98	7.98	47	10.15	10.15
Less than 1 hour	466	42.75	50.73	198	42.76	52.92
1-2 hours	365	33.49	84.22	142	30.67	83.59
3-4 hours	106	9.72	93.94	45	9.72	93.30
More than 4 hours	66	6.06	100.00	31	6.70	100.00
Time spent using video communication						
Never	40	3.67	3.67	19	4.10	4.10
Less than 1 hour	375	34.40	38.07	173	37.37	41.47
1-2 hours	349	32.02	70.09	141	30.45	71.92
3-4 hours	164	15.05	85.14	61	13.17	85.10
More than 4 hours	162	14.86	100.00	69	14.90	100.00
Time spent using face-to-face communication						
Never	755	69.27	69.27	332	71.71	71.71
Less than 1 hour	270	24.77	94.04	103	22.25	93.95
1-2 hours	40	3.67	97.71	17	3.67	97.62
3-4 hours	11	1.01	98.72	8	1.73	99.35
More than 4 hours	14	1.28	100.00	3	0.65	100.00

9.9. Appendix 9: Cronbach's Alpha

Item	Obs	Sign	Item-test correlation	Item-rest correlation	Average interitem covariance	alpha
------	-----	------	-----------------------	-----------------------	------------------------------	-------

belong1	1090	+	0.8236	0.7772	.4607354	0.9174
belong2	1090	+	0.8276	0.7791	.4546326	0.9171
belong3	1090	+	0.8326	0.7802	.4445922	0.9170
belong4	1090	+	0.7642	0.6939	.4575143	0.9220
belong5	1090	+	0.8079	0.7475	.4471742	0.9190
unique1	1090	+	0.6514	0.5811	.4981944	0.9269
unique2	1090	+	0.8158	0.7698	.4660802	0.9180
unique3	1090	+	0.7987	0.7468	.4652519	0.9189
unique4	1090	+	0.7375	0.6752	.4781789	0.9225
unique5	1090	+	0.7286	0.6595	.4739929	0.9234
Test scale					.4646347	0.9277

9.10. Appendix 10: Registered data analysis – AsPredicted

SSE - Inclusion from a distance: Virtual work and work group inclusion (#61337)

Created: 03/19/2021 06:10 AM (PT)

Public: 05/11/2021 01:32 AM (PT)

Author(s)

Valter Arnesson (Stockholm School of Economics) - 23803@student.hhs.se

Maria Erlansson (Stockholm School of Economics) - 23798@student.hhs.se

1) Have any data been collected for this study already?

No, no data have been collected for this study yet.

2) What's the main question being asked or hypothesis being tested in this study?

How does the level of media richness in virtual and face-to-face teams relate to the level of perceived inclusion of team members depending on gender identity?

Belongingness

H1: The lower the media richness, the lower the level of perceived belongingness for the sample.

H2: The lower the media richness, the higher the perceived belongingness for women and others*.

Uniqueness

H3: The lower the media richness, the lower the level of perceived uniqueness for the sample.

H4: The lower the media richness, the higher the perceived uniqueness for women and others*.

Inclusion (belongingness and uniqueness combined)

H5: The lower the media richness, the lower the level of perceived inclusion for the sample.

H6: The lower the media richness, the higher the perceived inclusion for women and others*.

* When using the phrase "and others", we refer to the gender identities that lie outside of "female" and "male".

3) Describe the key dependent variable(s) specifying how they will be measured.

Inclusion measures (10 questions, answered on a scale from 1 to 5, from strongly disagree to strongly agree).

- Belongingness (5 Q)

- Uniqueness (5 Q)

4) How many and which conditions will participants be assigned to?

Sending out survey to office workers during office hours to answer questions about their perceptions about the real-life experiences of their closest work group during the last month. No manipulation or assigning of conditions.

5) Specify exactly which analyses you will conduct to examine the main question/hypothesis.

The analysis will be made with multiple regression analysis with independent variable: media richness. Control variables: gender, age, employed before COVID-19 outbreak (dummy variable), work group size, fixed firm characteristics and work method (dummy variable).

6) Describe exactly how outliers will be defined and handled, and your precise rule(s) for excluding observations.

If incorrect answer to the control question, data from respondent will be excluded. We don't expect outliers, due to the format of the survey (multiple choice, no continuous variables). In order to follow the legal requirements of GDPR, if there are too few respondents in the "other" gender or in any particular age group, they will be excluded from the analysis of that particular variable. This is to not lose the anonymity of respondents.

7) How many observations will be collected or what will determine sample size? No need to justify decision, but be precise about exactly how the number will be determined.

Determined by the amount of companies and respondents we are able to negotiate access to. Expected response rate: 20% out of 600+ people surveyed.

8) Anything else you would like to pre-register? (e.g., secondary analyses, variables collected for exploratory purposes, unusual analyses planned?)

No expectation of getting enough data to be able to analyze the "other" group in regard to gender identity. Low probability of getting enough data to be able to analyze the group "employed before COVID-19 outbreak". Potentially additional analysis of secondary data to determine trends over time, depending on access to this data.