1. Introduction

As I was casually reading threads on *Baidu Tieba* (百度贴吧), a popular community forum in China, I was impressed with the talkative atmosphere *Tieba* users created. The forum participants seemed to have a strong desire to share what they encountered in everyday life with each other. They talked about, for example, buying a new house to secure a school place, shared the frustration of breathing smog-filled air, and asked others about where to buy safe milk powder for babies. Although they went to the forum just to meet people and talk about their daily routines, public issues concerning political policies sometimes emerged during their everyday chat. For example, people living in Beijing complained on the forum about the city's license plate auctions, which were designed to reduce traffic congestion but now are even more strictly imposed to deal with air pollution. During their talk, they were discussing ways to express their opposition to the license-plate lottery system, which car buyers need to participate in. Some even proposed to organize collective action to show their discontent about this policy; others suggested to sue the Beijing government over the license-plate lottery system because they felt it violated citizens' rights. In this commercial-lifestyle forum, people talked about their struggles in everyday life, shared their feelings, and thought about doing something. They were not apathetic citizens who did not care about public affairs. Instead, through the course of everyday talk on *Tieba*, their private issues and concerns led to discussions on the good of the broader community. The examples here show that ordinary citizens have their own way of discussing politics in everyday life beyond formal politics.

Citizens’ active discussion about issues concerning their life on *Tieba*, which often mixed politics with private matters, extended my understanding of the role of the internet in expanding and developing the public sphere in China. This prompted me to explore citizen interactions in online spaces beyond explicitly political ones. I observed citizens’ everyday talk on the *Yaolan* forum, a popular, private forum dedicated to child-rearing and parenting issues, which is located at the very periphery of politics. After reading through discussion threads on the forum, I noticed that participants did not directly discuss political or policy issues, but rather ordinary conversations often turned political. They scaled-up from private to public matters and connected private concerns and experiences to issues facing the broader community.

For instance, many parents shared their experience of buying school-zone houses. They talked about the hiking housing price, the limited educational resources for children
who are not covered by the childcare system, and also reflected on the inequality in educational choice between children from rich- and low-income families. I was not concerned with how such discussions impact the educational system or policy; rather, I was curious what online discussions in everyday spaces tell us about civic engagement in the Chinese public sphere. The taken-for-granted ordinary conversations about buying houses near a school on the Tieba and Yaolan forums do not touch upon grand issues about the political system, but they speak to the everyday needs, wants, and desires of ordinary Chinese citizens grounded in life realities. As everyday social spaces, Tieba and Yaolan provide chances for private individuals to gather and talk about everyday life experiences. They articulate their interests and make claims to rights by using vernacular language, sharing emotions, and thinking, discussing, and discovering new ideas about what they can do. The mundane political talk in such spaces enables people to connect their everyday experiences to issues of public concern. The political talk on these forums demonstrates that political engagement is likely to emerge in the private life of Chinese citizens via everyday conversations. This implies that everyday online spaces may be the new and alternative places where people can talk about politics and engage in it. Accordingly, this study wonders how Chinese citizens’ everyday political talk in such spaces impacts their practice of citizenship and whether they will contribute to an active online public sphere in China.

1.1 Everyday political talk in minjian: alternative structures of citizen interactions in China

The significance of everyday political talk in the political process has long been acknowledged in Western democracies; some even maintain that it represents the heart of a strong democracy (Barber, 1984). Everyday talk, as a form of minimal communicative action, has also been at the root of Habermas’s idea of the public sphere. According to Dahlgren (2002, 2006), talking about politics in an everyday life context is part of civic culture. It constitutes the “cultural origins of civic agency” which influences how the public sphere functions. Moreover, everyday political talk in the informal public sphere is an essential element that makes up the deliberative system. This incorporates talk-based mechanisms to deal with public issues and political conflicts (Mansbridge and Parkinson, 2012, p.5). Deliberative democracy scholars argue that the soundness of the democratic system relies on a well-functioning deliberative system (Mansbridge, 1999; Chambers, 2009; Parkinson, 2006; Mansbridge et al., 2012). This includes public opinion formation in the informal public sphere and decision-making in formal settings and connects the two
components as a whole. Through everyday political talk in informal settings, the political emerges from citizens’ lived realities and, consequently, public opinion is rooted in the perspectives of everyday citizens. Informal political talk is thus considered a channel for ordinary citizens to bring up everyday life issues, which they feel need to be discussed publicly. It thus plays a crucial role in the deliberative system.

Everydayness has three layers of meaning here. It first refers to the mundaneness of communicative acts that citizens perform daily. These are often non-purposive, non-conscious, unstructured, and taken-for-granted. Second, it implies that what people talk about are matters concerning their everyday life. Third, and this is the most important connotation, it emphasizes that everyday political talk is “a public-spirited way of talking”. It connects individuals’ personal life experiences with the larger community in the context of everyday life (Graham and Hajru, 2011, p. 20). To give an example, Yaolan users habitually gather on the forum to talk about their childrearing experiences. However, one family’s private concerns (buying a school-zone house) may turn to be a matter of common concern (unequal chances in education) through their talk. Put simply; informal political talk refers to a bottom-up manner of politicizing everyday life experiences and personal concerns, which implicitly involves power dynamics in the broader society.

So, what does everyday political talk mean in the Chinese context? In China, there is still a lack of formal channels for citizens to engage in politics; e.g., the party-state does not fully grant citizens a chance to participate in political elections, nor are they fully guaranteed legal channels to hold authorities accountable. Everyday political talk may then serve as an alternative way to connect ordinary Chinese citizens to public matters and encourage them to think about and act upon politics. If everyday political talk can serve as an effective bottom-up form of political engagement based on people’s lived experiences, it may bring change that is good for the personal lives of individual people but does not directly target grand political aims such as freedom and democracy. Everyday political talk here is mainly critical about power relations at the micro level. Thus, it serves to expand our understanding of civic agency and interaction in an everyday life context, and sheds light upon the micro dynamics of politics in the informal public sphere. Furthermore, it may help to move the studies on citizen interactions in China forward by grounding it in the local lifeworld where people have everyday communications.

Habermas and other political theorists argue that civil society is the central site of political talk in Western societies (Habermas, 1996; Cohen and Arato, 1992; Edwards, 2004). In Habermas’ normative view of the public sphere, civil society is the realm where
free and equal citizens exercise public debate, form public opinion, and monitor the authorities’ administration of power, in order to serve the public interest. Ever since notions of the public sphere and civil society were introduced into Chinese academia in 1986, scholars have been drawing from these Western-centric concepts as a means of understanding and imagining Chinese political society and politics. However, the application of these concepts in the Chinese case has in the scholarly debate been regarded as controversial. Because these were initially grounded in the historical circumstances of democratic development in early modern Europe, many scholars have argued that this conceptual framework cannot be adequately applied to theorize the public realm of China, which has a fundamentally different historical background (Wakeman, 1993; Brown, 2014; Huang, 1993).

The study of political citizenship and civil society in modern China invites us to go back to recent Chinese sociopolitical history. A period of rapid modernization began in the 1980s, when the National People’s Congress (NPC) began the process of making a ‘new China’ by further opening its doors to Western nations. The rapid development was accompanied by the ever-increasing promotion of Western civic values grounded in individual rights and civic awareness by the state among the people, aiming to transform the Chinese masses into modern citizens (Ma, 1994). China does not have a tradition of modern (liberal) democracy. In pre-modern China, Chinese people’s citizenship (membership in larger communities) was more socially oriented and rarely accompanied by a claim or a right to political participation (Wong, 1999). Not until late 20th century (1980s) were practices of political citizenship promoted by Chinese intellectuals and political elites who were influenced by Western connotations of citizenship (Goldman and Perry, 2002).

However, diverging from the liberal democratic trajectory, Chinese citizens were usually encouraged to take part in politics along the lines promoted by the state. Since the 1980s, it is the NPC that has been playing a crucial role in catalyzing citizenship, civil society, and political participation by the Chinese people (Goldman and Perry, 2002). It is noteworthy that, in the making of a modern citizenry, civil society and the state are considered to be mutually dependent and are supposed to develop in a harmonious relationship. The emphasis of harmony is different from how civil society works in Western democracies where it is separate from the state. By transplanting the idea of civil society into the Chinese context, intellectuals integrated it with the concept of shimin shehui (townspeople’s rights), which implies urban civil rights and claims greater popular
participation. Later the government gradually advocated citizen rights while it was in the process of constructing a civil society. By sharing the same focus of making a modern citizenry, civil society was co-opted with China's modernization plan, serving the aim of enhancing civic awareness, guaranteeing individual rights, and thus transforming Chinese individuals into modern citizens (Ma, 1994).

Since the 1990s, with the growth of civic groups and NGOs, civil society has been established more firmly in China. It is not only associated with demands for civil rights, but also values civic duties and social obligations (Chan, 2010). Nowadays, civil society is narrowly defined as an autonomous social structure in China which consists of NGOs and other social organizations. The civil society organizations, on the one hand, work on providing social services; on the other, promote greater public participation, connecting the broader citizenry with the administration of political power. However, their operation is still not independent of the state’s control.

What are the problems with Western notions of the public sphere and civil society as conceptual frameworks for understanding Chinese political society? Firstly, Chinese civil society is, unlike its Western counterpart, positioned by the government in a partnership relation with the state. In Western liberal democracies, the organization of social life has a certain degree of autonomy from the state’s administrative power. However, as civic organizations are only allowed to operate when they follow the regulations of the state registration system, Chinese civil society does not have the capacity for social self-organization. Activities in the civil society presuppose active involvement of the state. Secondly, state-civil society dynamics are shaped as a form of pastoral governance in the Chinese political landscape. Until now, it has been the state that imposes meanings of citizenship upon people living under its rule (Goldman and Perry, 2002). The inclusion or exclusion of social actors in civil society, and thus who are and who are not allowed to articulate their political views in the public sphere, are still determined by the authoritarian state. Moreover, Chinese civil society shows exclusionary and class-biased characteristics in its outcry for liberal-civil rights and cooperation with the state. Zhao (2008) reveals that the mediated public sphere in China is oriented to exposing the demands of the middle- and upper-classes who advocate liberal-civil rights. It largely ignores the appeals of the poor and lower-class who do not possess the discursive resources in the emergent ‘Chinese bourgeois public sphere’. Because civil society in China lacks capacity in defending the autonomy of the social forces against the intervention of the
state, alternative voices tend to be excluded from the dominant public sphere when they are not in accordance with the state’s governance logic.

As illustrated above, the formal political space, which is constituted by Chinese civil society, is guided by state-led ambitions of modernization. Moreover, it privileges middle-class voices. Due to the conceptual limitations of civil society and the public sphere, a notion of political society that is more comprehensive, more inclusive, and more dynamic is needed to explain political activities among Chinese citizens. I, therefore, argue that despite the state and civil society’s desire to enhance modern citizenship, a large proportion of the Chinese population is still living according to traditional customs and beliefs within the social formation of minjian. Minjian could be regarded as the everyday sphere. It is composed of informal social relations, such as kinship, friendship, neighborhoods, and other guanxi (relation-based) networks. The everyday spaces situated in ‘minjian’ maintain a certain degree of autonomy as an autonomous social realm next to the state and civil society, and works as an alternative for ordinary citizens to the elite public sphere in civil society. This is where the political wills and struggles of ordinary citizen actors are articulated (Chen, 2010). Moreover, the informal sphere in minjian serves as the space for everyday political talk among citizens beyond strict deliberation in formal settings. It offers a more inclusive environment for citizens to practice deliberative interaction in their everyday lifeworld, which bears local social-cultural values. Deliberative ideals may conflict here with particular cultural and social norms or are integrated within it. Overall, I argue, that the notion of the everyday sphere – minjian – may offer new conceptual possibilities of thinking about politics and alternative ways of being political in the Chinese context.

As the internet has grown rapidly, the everyday spaces in minjian have become increasingly intertwined with online communication networks. The digitally mediated social spheres are important aspects of Chinese citizens’ everyday lives. With the widespread use of the internet, scholars started to pay attention to new participatory opportunities it potentially offered. Dean (2010) and Papacharissi (2010) see various new forms of “being political” embodied in citizens’ online practices. Dahlgren (2015) argues that internet-enabled everyday practices form “a new social milieu for political agency” (p.28). Similarly, scholars also find that the blurring boundaries between the private and the public, the personal and the political, have been reinforced in the internet-based everyday sphere in China (Yu, 2007; Rosen, 2010; Zhang, 2014). In this dissertation, I explore the chances such spaces may provide to cultivate and sustain a relatively
autonomous sphere for political expression, not colonized by the governing power of the ruling state. Specifically, it focuses on citizen deliberation and other social-civic (communicative) activities that emerge via everyday online political talk, to investigate how such talk opens up opportunities for the rise of an alternative space for ordinary citizens to engage in politics in China.

1.2 The internet and the public sphere in China

Since the 1990s when the internet entered the Chinese market, digital technologies have developed very rapidly in China. According to the China Internet Network Information Center (CNNIC, 2017), internet use had reached 751 million people (more than half of the Chinese population) by June 2017. During the past decade, the internet has penetrated into almost every aspect of Chinese people’s daily lives. Chinese users go online every day for shopping, getting news and information, chatting, entertainment, or making donations (Kuo, 2014; Zheng & Yu, 2016). They are also increasingly involved in various types of e-government programs, pushing the government to respond to the public. In 2015, ‘Internet plus’, which was proposed by the central government, became the buzzword in China. It encouraged all enterprises to integrate the internet into their conventional business. As internet usage has become more and more connected to citizens’ consumption behavior, cultural practices, and other daily routines, scholars have long debated the dynamics of the Chinese internet, politics, and culture in the current phase of social transformation, covering a broad range of issues including China’s reform and development, social hierarchy change and social conflicts. The internet’s role in the development of the Chinese public sphere is one of the major topics among scholars who study the political implications of the internet in China.

Overall, there are three strands of thinking in understanding the internet and its potentials in extending the public sphere and promoting political change in China. The first strand takes the perspective of deliberative democracy. The second strand understands the Chinese internet from the angle of civic activism and the third trend approaches it, by viewing the Chinese internet as a tool of authoritarian governance.

First, the vision of deliberative communication emphasizes that the Chinese internet facilitates a deliberative public sphere. According to previous studies, internet use has indeed expanded the scope of public sphere in China. It has pluralized Chinese citizens’ information sources, and posed a bigger challenge for the government to control information, compared to traditional media (Zheng and Wu, 2005; Rosen, 2010).
Moreover, Chinese netizens have been actively expressing rational-critical views on important public issues (Tai, 2006), subtly conveying social criticisms about relevant policies in the online sphere (Esarey and Xiao, 2008), and generating public opinion from the perspective of citizens (Zhou, 2009). However, other scholars argue that Chinese internet has also had a negative impact on the deliberative prospect. Despite the emerging network of public opinion in Chinese cyberspace, uncivil discourse and apolitical involvement are very common among Chinese netizens. For instance, citizens go online for entertainment, and not for political expression (Damm, 2007; Leibold, 2011). In addition, Zhou et al. (2008) find in their study that political discussions in the Chinese online sphere are often not deliberative because netizens tend to talk with people who share similar views instead of responding to different ideas. With the coexistence of both deliberative potentials and non-deliberative features in cyberspace, we can see that the incipient online sphere is not yet strong enough to guarantee an improving deliberative public sphere in line with what Habermas anticipates. While some believe the internet brings hope to solve social issues via rational-critical debate as observed by Habermas in 17th or 18th Europe (Habermas, 1989), there is not much empirical evidence to support this theoretical ideal.

The second strand of thinking argues that Chinese citizens’ online activities, though not necessarily deliberative, have promoted other forms of political engagement, vitalizing participatory ideals among the wider citizenry. From the perspective of participatory ideals, the internet is a hub of online activism. Scholars observe the rise of “participatory and contentious” culture in the Chinese online sphere (Yang, 2009). With the growth of the internet, weiguan (surrounding gaze) has become one of the popular forms of digital activism. Xu (2015) describes online weiguan as a series of radical communicative actions among virtually gathered participants. He says, participants usually attract people’s attention and produce discursive power by displaying eye-catching pictures or videos, using satirical words, and arousing strong emotions. It is a bottom-up way for citizens to discuss controversial issues, mobilize collective action and pressure the government to solve problems. Similarly, other empirical studies also find the internet’s potential in supporting alternative models of political participation, which sometimes enables the formation of alternative public spheres that are distinct from the Habermas-inspired model of the public sphere (Zhang, 2006; Pan, 2014). Despite the various forms of political participation and engagement, Chinese citizens are not mobilized for anti-regime goals (Han, 2015a). Most of the political criticism toward the government is issue-specific, concerning rights, corruptions or scandals, which do not promote regime-level changes in China.
Although there are disputes about the democratic impact of the internet on Chinese politics, it is difficult to deny the empowering capabilities of the internet and the state’s response to the internet-based challenges. Then, the third trend of research takes the state-centered perspective and considers the Chinese internet as a tool of authoritarian governance, further revealing the complex relationship between state and society. On the one hand, the Chinese government has applied a variety of strategies to contain political expressions it does not want to be raised to the political agenda of the party-state. These include censorship measures (Kalathil and Boas, 2003), hiring online commentators (Morozov, 2011), and real-name registration. Yet, the censorship is often circumvented by Chinese netizens who have created coded language to speak online. In addition, the government leaves a certain space for citizens to express social criticism by only selectively oppressing regime-challenging collective actions or dissent activism (King et al. 2013). On the other hand, beyond censorship and propaganda, the government is encouraging public participation in societal issues and adapting itself to incorporate online public opinion into its policy agenda as long as it does not challenge the political system (Han, 2015a). The accommodation strategy, in turn, improves its governance ability and increases the resilience of the regime.

Within these three strands of research, most studies have adopted a conventional notion of politics, focusing on the explicitly political, which usually involves formal politics of the state. This body of research on the Chinese internet tends to be constrained within dichotomous binaries such as control and resistance, state and society, and political and non-political. Although these studies have their merits, it is clear that less subversive online practices in everyday online spaces, which do not necessarily involve the state, are neglected. Jiang’s (2010) center-periphery model of authoritarian online deliberation, for example, is the most systematic study which examines public discussions in a wide range of different Chinese online spaces from the core to the periphery of authoritarian rule. But still, I argue, her study has mainly focused on political communication in online spaces of conventional politics. It overlooks the actual periphery of the political spectrum, that is, the everyday online spaces that are not explicitly political. There is an insufficient uptake of ordinary citizens’ everyday political talk in online spaces that do not focus on politics.

As this brief review of the literature reveals, which will be discussed in more detail in Chapter 3, there is a need to pay attention to mundane practices on the internet and critically examine everyday online political talk. I argue that this will provide a better understanding of the heterogeneity and the complexity of the internet and its role in
shaping the Chinese public sphere from bottom-up. Moreover, it will allow us to move beyond the division between deliberative and participatory ideals because communicative practices are analyzed more inclusively and grounded in empirical data. For instance, we can trace how everyday talk about life experiences, such as buying a house, is linked with the injustices involving children’s education. Or how everyday citizens debate educational problems in a way that bears the spontaneous features of casual chat and norms of social talk. Therefore, this dissertation shifts the focus to communicative practices in everyday online spaces beyond the focus of conventional politics.

1.3 Research aims, questions, and contributions

This dissertation aims to study Chinese citizens’ communicative practices in the heterogeneous internet and investigates whether such practices extend the public sphere in China. It focuses on political talk in everyday online spaces and thus, moves beyond the macro-interactions between state and society, the perspective applied in authoritarian online deliberation. For this purpose, I study forums mixing politics with lifestyle issues or non-political online forums. Here, everyday political talk does not only imply mundane communicative practices per se but also bears the social-civic culture where those communicative actions take place. In other words, everyday political talk is situated in the local social-cultural context. By studying this, it is possible to probe into how citizens’ everyday life is interwoven with politics and how citizens think about and engage in politics in their lifeworld at the micro-level.

To achieve the research aims, I have developed a comprehensive analysis of everyday political talk, following the framework of deliberation and also considering the social-civic culture existing in citizens’ everyday lifeworld. First, I assess the deliberative quality of everyday political talk based on Habermas’s ideas of deliberation in the public sphere. The assessment based on deliberative norms is fundamental to reveal if and how Western ideals are applied in the Chinese local social-cultural context. It further enables the study to move beyond the confines of public sphere theory associated with (Western) deliberative norms to identify contextual categories which may be incorporated to construct a more grounded model of deliberation and of the (online) public sphere in China.

The research also takes into account the informal characteristics of everyday talk including affective expressions and other social-civic communicative forms. Specifically, it focuses on how deliberative communications are intertwined with emotional engagement
and other social-civic communicative practices. This inclusive approach enables us to investigate what communicative practices constitute the discursive power in Chinese online public spheres and study the multiple civic functions of everyday political talk. In doing so, I explore how citizens’ deliberative and social-civic communicative practices construct relatively autonomous discursive spaces in minjian as an alternative to the elite bourgeois public sphere in China. On this basis, the following two research questions are formulated in the study:

**RQ 1:** To what extent does everyday political talk in Chinese online spaces meet the conditions of deliberation as outlined in public sphere theory?

**RQ 2:** What social-civic communicative forms and emotional expressions, beyond the framework of deliberation, emerge in the course of everyday online political talk?

This dissertation compares the nature of political talk across three popular Chinese-speaking forums that each have distinctive aims and characteristics. The selected forums include a government-run political forum, a commercial (social) forum where politics is mixed with lifestyle issues, and a seemingly non-political topical forum dedicated to parenting/childcare issues. Here, the comparative focus enables us to explore how forum aims and characteristics regarding moderation rules, topics and the nature of the forum influence citizen interactions in online spaces. The differences and similarities that emerge from the comparative analysis allows us to better understand and explain the (new) communicative practices taking place in everyday online spaces. Thus, I can explore how different types of online spaces show different potentials to create an alternative discursive sphere distinct from the Habermasian (elite) public sphere in China. This comparative focus raises the final research question:

**RQ 3:** How do the forum’s aims and characteristics impact the nature of everyday political talk?

In addition to the above comparison, this study also compares online political talk across three topics: the environment, public health, and childcare and parenting. These topics are part and parcel of citizens’ personal lives but also involve larger-scale public concerns. Hence, they bridge the private-public divide; while they are often discussed in a way that is less explicitly political, they often are scaled-up to public concerns, resulting in public debate. Taking into account the characteristics of a specific topic allows us to study how specific topics and the potential publics they attract, contribute to shaping the nature of everyday political talk.
In order to address these questions, a content analysis with a three-part coding scheme was developed to comprehensively assess the nature of online political talk. First, I examine the deliberativeness of online political talk by operationalizing the following normative conditions: the process of rational-critical debate (rationality, continuity and convergence), dispositional requirements for achieving mutual understanding (reciprocity and sincerity), and the norms of debate (discursive equality). Second, I explore other social-civic communicative forms: complaining, questioning, advice giving/helping, storytelling, and social talk. Lastly, the third group of coding categories were developed to assess the expressive nature of such talk, including anger, sadness, fear and happiness. The content analysis was supplemented by an in-depth reading of the threads to help provide (more) context (i.e., socio-cultural meanings of communicative practices) and explain in more detail the findings.

This comprehensive manner of analyzing online political talk, which keeps the normative focus, but also explores other communicative forms by considering the socio-civic context in China, provides insight for future research on how to localize online deliberation studies in the Chinese context. Moreover, using a normative framework of public deliberation to analyze the nature of online political talk could help facilitate future research in comparative studies of online political talk in a variety of non-Western and Western contexts. Most importantly, this study explores how people living in the eastern-Asian part of the global village use the internet and information technology to engage in politics. Thus, theoretically speaking, the findings obtained from the research here could offer practical and theoretical implications for new notions of the public sphere in China in the digital age. Consequently, it contributes an important critique of Western public sphere theory, which will help facilitate the revision and expansion of its conceptual and analytical orientations in the future.

1.4 Structure of the thesis

This dissertation consists of eight chapters which present the theoretical framework, methodologies, empirical case studies, and the conclusion. Chapter 2 builds an open-ended framework for the evaluation of everyday political talk in Chinese digital spaces. It draws upon Habermas’s notion of communicative action and other theories of public deliberation but opens up the possibility of modifications by considering the particular political, cultural, and social factors in the Chinese context. Chapter 3 reviews the relevant literature on the internet and the public sphere in China. It not only provides an overview of previous studies but also shows a gap in research, revealing the significance of studying
everyday political talk for a more profound understanding of the potentials of the internet in transforming political society in China. Chapter 4 presents the research design and methodological approach. It explains case selection, sampling, and methods of analysis and also discusses the limitations of the research design and ethical considerations. Then, Chapter 5, 6 and 7 present three empirical case studies of environmental talk, political talk about public health issues, and political talk about childcare and parenting issues. To conclude, the last chapter of the dissertation, Chapter 8, summarizes the empirical findings, discusses the theoretical implications and societal impact of the study.