Hidden housing markets and informal infrastructure:

A review of housing resource groups on Facebook

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SUPERVISED RESEARCH PROJECT, AUGUST 2023

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Supervised research project submitted in partial fulfilment of the Master of Urban Planning degree

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August, 2023

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Abstract

As the housing crisis in Canada persists, the demand and diversity of housing needs is mounting within urban populations. At the same time, technological advancements and near-universal access to the Internet has allowed for practically all aspects of real estate to become mediated by digital platforms. Today, people across Canada are going online to seek out and offer accommodation, learn about housing practices and laws, and find support as they navigate an increasingly challenging housing landscape. While housing resources can take many different shapes online, social media platforms have emerged as informal and unique virtual spaces where individuals are interacting with economic and social practices around housing. This study delivers a novel analysis of this understudied aspect of the rapidly developing digital housing ecosystem through a mixed methods analysis of housing-related Facebook groups in Toronto and Montreal. Framed by perspectives on platform urbanism and online communities, this research takes stock of the housing groups serving Toronto and Montreal, and examines the purposes of the groups discovered. Results of this study reveal several different kinds of both marketplace groups and information-sharing groups, and offer evidence of the popularity of and demand for Facebook groups as a site for housing resources. These groups are situated as a form of co-generated, communal infrastructure, part of which includes largely concealed market activities. Outcomes of this study draw attention to the capacity of individuals in creating their own means to meet their housing needs, and the potential of informal channels to have real impacts on both individual housing experiences and the broader housing landscape. Importantly, a strong emphasis is placed on how little is known about the ways that individuals across Canada are navigating housing today.

Résumé

Alors que la crise du logement persiste au Canada, la demande et la diversité des besoins en matière de logement augmentent au sein des populations urbaines. Dans le même temps, les avancées technologiques et l'accès quasi universel à l'internet ont permis à pratiquement tous les aspects de l'immobilier d'être médiatisés par des plateformes numériques. Aujourd'hui, dans tout le Canada, les gens vont en ligne pour chercher et offrir un logement, s'informer sur les pratiques et les lois en matière de logement, et trouver du soutien pour naviguer dans un paysage immobilier de plus en plus difficile. Alors que les ressources en matière de logement peuvent prendre différentes formes en ligne, les plateformes de médias sociaux sont devenues des espaces virtuels informels et uniques où les individus interagissent avec les pratiques économiques et sociales en matière de logement. Cette étude propose une nouvelle analyse de cet aspect peu étudié de l'écosystème numérique du logement qui se développe rapidement, par le biais d'une analyse de méthodes mixtes de groupes Facebook liés au logement à Toronto et à Montréal. S'appuyant sur les perspectives sur l'urbanisme de plateforme et les communautés en ligne, cette recherche fait le point sur les groupes de logement desservant Toronto et Montréal, et examine les objectifs des groupes découverts. Les résultats de cette étude révèlent plusieurs types différents de groupes de marché et de groupes d'échange d'informations, et apportent la preuve de la popularité et de la demande de groupes Facebook en tant que site de ressources en matière de logement. Ces groupes sont considérés comme une forme d'infrastructure communautaire co-générée, dont une partie comprend des activités de marché largement dissimulées. Les résultats de cette étude attirent l'attention sur la capacité des individus à créer leurs propres moyens de répondre à leurs besoins en matière de logement et sur le potentiel des canaux informels à avoir un impact réel à la fois sur les expériences individuelles en matière de logement et sur le paysage plus large du logement. Il est important d'insister sur le fait que l'on sait peu de choses sur la façon dont les individus naviguent dans le logement aujourd'hui au Canada.

Acknowledgements

I extend my sincere appreciation to my supervisor, David Wachsmuth, for his guidance throughout this process and through the whole of my studies. I am so grateful to my parents, whose support has been unwavering. Thank you to my friends, for bringing me joy, tenderness, and strength.

This research has been supported by the Social Sciences and Humanities Research Council of Canada.

Introduction

Whether looking for a new apartment to rent, putting up a property for sale, or even inquiring about housing laws, a first step in many contemporary housing experiences is going online. Digital platforms like Craigslist, Kijiji, Airbnb, or Zillow have revolutionized residential real estate markets and how they operate, while developments in proptech, or property technology, have made it possible for landlords and property managers to manage nearly every aspect of their real estate portfolios from afar. At the same time, tenants have a myriad of digital spaces to enter in their search for rentals, roommates, or information regarding their rights. These new, digitally-mediated housing practices have largely emerged in the past two decades, with recent years seeing significant intensification and acceleration in this sector (Fields & Rogers, 2021).

While tenants, landlords, property owners, and property managers alike are looking to online spaces for their housing needs, not all of this activity is happening via real estate specific websites or applications. Social media, as a fundamental component of everyday life for many people (Barns, 2019), is now being used to navigate housing as well.

On the Meta-owned, massively popular social networking site Facebook, users are joining private and public groups which cater to their own housing needs and experiences. Facebook groups allow users to create and share digital content (including text, photos, video, and more) pertaining to a specific shared interest or experience, along with other people within a group. While Facebook groups have recently been identified in the literature as spaces which are mediating and facilitating experiences of housing and home (Brown, 2022; Witten et al., 2021; Hu et al., 2019; Baborska-Narozny et al., 2017; Mosconi et al., 2017), the work in this area is just budding. Despite the relevance of Facebook groups and other informal avenues through which people are navigating housing online, challenges in access to data as well as the rapidity of technological development have produced a regulatory and theoretical blind spot in this area (Ferreri & Sanyal, 2022).

The central aim of this research is thus to document the kinds of peer-to-peer housing groups which have taken shape on Facebook, and assess the relevancy of these groups within the broader housing landscape. This study intends to make a novel contribution to this under-researched and undertheorized locus of study, through a mixed methods review of housing-related Facebook groups in two Canadian cities: Toronto, Ontario and Montreal, Quebec. Between these two cities, hundreds of such groups have been identified, with millions of members collectively. These groups offer a range of different functions, which are categorized in this report. Framed as a form of communal, platformized infrastructure, and acknowledging the existence of hidden housing markets within this, these groups appear to have potential in influencing group members' lived experiences of housing.

Ultimately, this research establishes that Facebook groups are functioning as co-generated housing resources, offering both commerce and information-sharing functions. These groups

serve as relatively accessible, highly informal, platformized infrastructure which incorporates elements of both online communities and platform real estate, ultimately representing a complex new frontier in the digital housing landscape.

Research objectives

There are several key objectives that have been set out in this research. First, to provide a qualitative review of the existing housing-related groups on Facebook in Toronto and Montreal, taking into consideration the amount of groups, the quantities of group members, and other publicly-available information. Second, to better understand the explicit functions and purposes of these groups, through documentation and categorization. Lastly, to theorize the potential offline implications associated with informal housing resources, considering impacts on the scale of everyday life, and more broadly in the housing sphere.

Results from this study provide helpful insights into a phenomenon with serious potential to transform how individuals interact with housing today and in the future. The quantitative findings offer evidence of the widespread usage and popularity of Facebook groups as a site for housing practices. Through content analysis of the group names and descriptions, this research reveals that groups either cater to marketplace or information-sharing needs, with the majority of groups relating to rental tenure. Moreover, interesting kinds of more niche groups are also discovered, pointing to the unique capacities afforded by the medium of Facebook groups.

These results serve as evidence for the complexity and ambiguity that blankets the digitzed housing sphere. In terms of the marketplace-oriented Facebook groups discovered, these effectively function as hidden housing markets, which may offer unique benefits to group users, while raising issues in terms of legitimacy, regulation, and access. More broadly, it is helpful to understand housing-related groups in the context of, and as a form of, platformized, communal infrastructure. This framing is useful for recognizing and validating the importance of informal channels, like Facebook groups, in contemporary housing experiences in Canada and beyond. While it is difficult to make regulatory recommendations in this context given the lack of sufficient research in this area, the findings of this study confirm that housing practices are being translated into largely unregulated virtual spaces, where platforms and users are co-producing a complicated housing ecosystem, extending beyond the digital sphere and into offline realities.

Literature review

Through perspectives on platform urbanism and online resource-sharing, this literature review provides context to situate the subsequent analysis of housing-related resources on Facebook. Tracing the emergence of digital platforms, as well as developments in digitally-mediated real estate, this review discusses the associated social, political, economic, and technical considerations on the structural and everyday scale. Referring to the literature on virtual communities, this review also discusses the theoretical and practical understandings of how and why people co-create resources online. Taking into consideration the contemporary issues in housing in Canada and beyond, the following section situates social networking platforms, and specifically Facebook, within the context of housing.

As the results of this study will underscore, there is a need for greater consideration of informal, networked spaces which are currently mediating both economic and social processes related to housing. Urgency underlies the discourse which follows, as it does nearly all discussions of housing today––with a housing crisis that is only escalating in Canadian cities, there is an ever-pressing need to examine every facet of the online housing ecosystem.

Platform urbanism

Developments in information technology and network communications have produced profound shifts in social and economic systems around the world (Castells, 2013; Cardoso, 2008). The sites of the most powerful outcomes of this 'digital revolution' have largely been urban spaces; with new technologies enabling professionals, policymakers, institutions, and governments to manage cities through digital tools, data, and systems (Engin et al., 2020; Downey & McGuigan, 1999). Technologies have been embedded into nearly every aspect of urban living, generating new ways of life, new possibilities, and certainly new challenges (Hodson et al., 2020; Kitchin, 2014; Hernández-Muñoz et al., 2011; Galloway, 2004). One such challenge associated with the digital revolution in the urban context is the difficulty in understanding and assessing the implications, and navigating regulatory responses, given the speed at which cities are changing (Graham, 2020; Zetzsche et al., 2017).

Perspectives on platform urbanism, often layered with a political economy lens, have been especially useful in understanding this pervasiveness of technology in urban spaces. This approach frames the platform-mediated city as a complex ecosystem where the digital architecture and infrastructure of platform frameworks mediate the actions of institutions, businesses, and residents (Leszczynski, 2020; Guyer, 2016). Platform technologies support participatory systems of creation and consumption in terms of data or content, with the platform itself functioning as an intermediary (Barns, 2019b). The creation of content on a platform generates value for both the thing that is created, and the platform itself (Bratton, 2015). At the same time, platforms and the cities they operate in are simultaneously developed through iterative processes (Rodgers & Moore, 2018; Barns, 2017).

The 'platformization' of the city corresponds with other technical, political, and socioeconomic movements, and has been deemed as both a product and driver of neoliberalism, technocapitalism, and financialization (Grimaldi et al., 2023; Strüver & Bauriedl, 2022; van Doorn et al., 2021). Plantin et al., (2018) put forth a 'theoretical bifocal' which examines urban living through the lenses of both platform urbanism and infrastructural studies, suggesting that today's cities see both "platformized infrastructures" and "infrastructuralized platforms." As part of this, major platforms like Facebook or Google function as essential infrastructures, which facilitate a vast range of different socio-technical and economic systems, and which billions of people utilize every single day (Plantin et al., 2018).

The emergence of platform technology thus represents far more than an economic disruption. Rather, it has engendered a 'technological everyday' wherein socio-technical practices are constant and commonplace (Barns, 2019a; Strüver & Bauriedl, 2022). To capture this, Van Dijck et al. (2018) propose the "platform society" to account for the inextricable association between platforms and social structures. Perhaps most importantly, however, digital platforms are the sites of mundane, everyday interactions for urban residents (Barns, 2019b).

While immediate effects of platform urbanism and the digital everyday are quite tangible, longer-term outcomes are just beginning to take shape. The burgeoning literature in this area has propagated many theories about the implications of digitization in cities, but it has been difficult for researchers to keep up with the rapidity of technological development (Prentice & Pawlicz, 2023; Graham, 2020; Datta, 2018). As a result, many facets of the relationship between platforms and urban living still remain opaque––such as housing.

The digitized housing landscape

How properties are advertised and searched for, sold and purchased, and rented and managed looks much different today than it did only a couple decades ago. Now, people are using digital platforms and virtual tools to navigate nearly every, if not all, aspects of the marketplaces and experiences related to real estate (Fields & Rogers, 2021; Shaw, 2020). This effect has been so profound that scholars are increasingly positioning real estate as not just mediated but actually governed by digital technologies (Fields, 2022).

The concept of platform real estate has emerged from and alongside the theoretical work of platform urbansim. Though platform real estate can be interpreted as a somewhat ambiguous concept, it generally refers to the array of digitized practices and processes associated with property and real estate which operate within the frameworks of digital platforms (Shaw, 2020). In the literature, platform real estate is regarded as both a category of technology and a theoretical lens in and of itself.

Platform real estate is not entirely novel in the sense that it represents an acceleration of existing forms of capital accumulation, translated into new digital spaces (Fields & Rogers, 2021; Langley & Leyshon, 2017). At the same time, this concept has facilitated materialization of new and unique power dynamics, socio-technical relations, capital flows, and everyday practices (Nasreen & Ruming, 2022). Constantly evolving, platform real estate relies on the active participation of a vast and complicated network of infrastructure and actors. Like other platform technologies, real estate platforms serve as permeable intermediaries, through which users can efficiently connect with other users, and exchange information and value (Fields & Rogers, 2021). Users are thus at the centre of platform functions, generating data and producing value through their participation (Langley & Leyshon; Barns, 2019).

A fundamental component of platform real estate (and platform technology more broadly) is a peer-to-peer (P2P) system. In the

context of housing specifically, this can take the form of users posting a listing for a property, this content being available to many users, who can then view and engage with the listing, and who can post listings themselves. Rather than a one-to-many system (e.g. one primary source for content, with many people who can view and engage with it), platform real estate enables a many-to-many system, where all users can be both creators and consumers (Jamieson, 2016). This entails unique sets of social norms, dynamics, and learned behaviours that are appropriate to the digital platform context (Cohen & Sundararajan, 2015). In this sense, real estate platforms are far more than networked architecture and technological infrastructure, they are complex socio-technical ecosystems where marketplace practices and social interactions are interwoven (Nasreen & Ruming, 2022; Barns, 2019b).

Platform real estate has gained popularity quickly. As a fast-moving and disruptive force within the housing sphere, it has been a challenge for policymakers, scholars, and professionals alike to regulate, and even gather insight into platform real estate (Leszczynski, 2020; Zetzsche et al., 2017; Barns, 2017). One of the most prominent examples of the difficulties in regulation is seen in the emergence of Airbnb and other short-term rental (STR) platforms. The proliferation of STR platform activity has been linked to significant increases in housing costs, gentrification, and lower vacancy rates, yet access to company-owned data has been limited, regulatory responses have been slow-moving, and enforcement has proven incredibly difficult (Prentice & Pawlicz, 2023; Combs et al., 2020; Nieuwland & Van Melik, 2020; Wachsmuth & Weisler, 2018; Hulse et al., 2018; Quattrone et al., 2016).

Despite, or perhaps because of challenges in regulation, platform real estate is an undoubtedly element of day-to-day urban living. Online listing platforms are perhaps the greatest instance of this: with property owners, buyers, managers, and tenants having a variety of options for digital housing marketplaces. Websites like Zillow, Realtor.ca, or PadMapper are explicitly for real estate, and allow users to easily create listings with photos, videos, and necessary information (Costa et al., 2021; Boeing, 2020b; Poon et al., 2011). Search and filtering features make it efficient to narrow down options while searching, while embedded messaging interfaces enable exchange even if all parties may not be geographically close to a property (Boeing et al., 2021a; Hess et al., 2021; Fields & Rogers, 2021; Maalsen, 2020). Compared to offline search practices, such as the use of classified ads in print media or word of mouth, online real estate platforms can offer more information-rich listings, and real time updates regarding availability (Rae, 2015).

In addition to platforms explicitly serving as housing marketplaces, other digital classified ads platforms, like Kijiji or Craigslist, are also utilized for housing listings and searches, with specific categories for property and accommodation (Jolivet et al., 2023; Pi, 2017; Boeing & Waddell, 2017). These websites, which are not specific to housing, have been identified as sites for informalized housing practices, particularly within the rental sphere. Examples of this can be seen in the use of platform technology to match with housemates and navigate shared housing (Maalsen, 2020; Maalsen & Gurran, 2022), and the formation of informal rental markets where individuals can find rooms for rent, informal secondary units, and low-cost alternative living arrangements (Gurran et al., 2022; Ferreri & Sanyal, 2022). In such cases, reliance on user-generated data and content, plus the general lack of regulation of digital platforms, facilitates the development of makeshift, non-traditional, and informal channels and patterns of behaviour within digitized housing (Shrestha et al., 2021; Ferreri & Sanyal, 2022).

While online housing marketplaces, both formal and informal, allow for a diversity of housing options, accessibility (given access to technology and internet), convenience, and immediacy, there are unique challenges built into these virtual spaces. Particularly for tenants, navigating online rental marketplaces requires new sets of social and technical skills to improve one's chances of securing accommodation or finding roommates. This includes managing one's online identity,

following online marketplace etiquette, and learning to avoid potential scams (Wainwright, 2023; Parkinson et al., 2021; Marsh & Gibb, 2011).

At the same time, platform-mediated rental markets provide ample opportunity for misrepresentation of properties, fraudulent schemes, deception, and illegal activity (Nasreen & Ruming, 2022). Enhanced immediacy and access can also generate more competition, especially for renters and leading up to high-demand moving dates (Rae & Sener, 2016; Sarkar & Gurran, 2017). Moreover, as platform real estate operates within overarching sociopolitical and socioeconomic structures, inequalities which exist in offline housing experience can be expected to appear online as well. Several scholars have argued that online platforms not only reproduce, but can even exacerbate inequalities which exist in offline spaces (Boeing et al., 2021b; Boeing, 2020a; Brannon, 2017; Stephens, 2013).

Broadly, the widespread usership and relevance of platform real estate signals the direction of movement for both lived experiences and economic components of the housing sphere. While digital real estate platforms operate within and reproduce long-existing social and economic structures, the technical capacities afforded by platform technology have allowed for the emergence of an intricate array of new behaviours, systems, practices, and outcomes.

Online communities

In the earlier days of the internet, going as far back as the 1980s, the emergence of virtual networks generated vibrant debate and public concern over the concept of online communities (Thomsen et al. 1998). Well into the 21st century, scholars and theorists debated whether virtual communities, taking shape via digital bulletin boards, forums, blogs, and early social media, can be considered real or merely imagined, and if they warranted investigation as communities at all (Wilson & Peterson, 2002). At the same time, public and academic discourse was quick to compare Internet-mediated and in-person communities, with concern quickly mounting around the potential for local communities to be eroded by a shift towards online social networks (Stoll, 1995; Nie & Erbring, 2000; Wilson & Peterson, 2002). Some authors were suspicious that the Internet would threaten human capacity to connect offline, as people unwittingly leaned into a simulacra of community, with it's easy, instantaneous, and geographically unbounded connectivity (Hampton & Wellman, 2003).

In contrast to the historically patterned fears of new technology erasing human connections, the early 2000s and onward saw a bounty of research examining the potential of the Internet for facilitating the development of robust online communities which appeared to be unrestrained by spatiality nor identity along the lines of socioeconomic status, race, gender and other characteristics (Bruckman, 2006; Zhang & Watts, 2008; Ganster & Schumacher, 2009). Though early 'internet utopians' claimed that offline prejudices and inequalities would not be translated to the digital sphere (Hampton & Wellman, 2003), contemporary analyses tend to situate virtual networks as reproductions of existing, offline social spaces (Witten et al., 2021). In other words, what 'happens' online is embedded within broader, familiar social structures, which are subject to be transformed by technology, but are not overwritten by it (Miller & Slater 2000).

Today, the near-universality of internet access and the ubiquity of mobile phones has encouraged widespread membership in

online communities, facilitated by social media platforms like Facebook, Instagram, or Reddit (Hine, 2017; Finin et al, 2008; Wong et al., 2011). The peer-to-peer capacities provided by social media platforms are essential, as virtual communities rely on mutual engagement and the sharing of information and resources between members (Ardichvili, 2008; Sharratt & Usoro, 2003).

How and why virtual community members choose to engage with their online peers has been the focal point of a sizable body of literature in the last decade. Findings in this regard have shown that online communities engage in the sharing of information and resources voluntarily, even when they do not expect to receive anything in return (Knearem et al., 2019; Blankenship & Ruona, 2008). Moreover, a collective understanding that an online community cannot function without widespread and mutual participation is also a factor in self-motivated engagement within an online community (Chiu et al., 2006; Blankenship & Ruona, 2008). Though trust between users on social networking sites is generally weak, frequent interactions and reciprocal exchanges of knowledge can breed strong connections to a virtual community, without members necessarily trusting one another (Lee et al., 2014; Chiu et al., 2006). Moreover, having a higher level of interaction with other community members has been found to have a positive influence on an individual's engagement in offering information or resources, as well as their usage of resources being shared by others (Chiu et al., 2006).

While contemporary online communities take shape via many different interfaces and digital spaces, Facebook is a particularly interesting locus for these online activities. As of 2023, there are nearly three billion Facebook users globally, making it the most used social media platform in the world (Statista, 2023). Facebook users can stay in touch with their offline social networks (such as family, friends, neighbours, and colleagues) as well as make new connections with other users, and join local and global online communities based on a user's interests (Vitak et al., 2011). The scholarship on Facebook-based communities has often looked at Facebook groups––a feature of Facebook which facilitates the creation of virtual spaces where users can connect with others over a shared interest, experience, place or other topic.

A few specific kinds of Facebook groups have been the subject of a substantial amount of academic inquiry: support groups related to medical conditions (Titgemeyer & Schaaf, 2020; Autio, 2018; Stock et al, 2018; Wittmeier et al., 2014), parenting and education-related groups (Mansour, 2020; Lupton et al., 2016; Niela Vilen et al., 2014), and interest and practice-related groups (Wong et al., 2011; Peeters & Pretorius, 2020; Ganster &. Schumacher, 2019). Groups related to specific demographics have been observed as well, examples of this including 2SLGBTQIA+ communities (Hanckel & Morris, 2014); religious groups (Abrams et al., 2018), and racial and ethnic communities (Korn, 2015).

While Facebook groups have facilitated the formation of online communities, there are unique challenges associated with these virtual spaces. In Facebook groups that do not overlap with pre-existing or offline personal networks, the heterogeneity of online community members, and the fact that most members have never met and will never meet in person, could produce complicated dynamics (Marwick & Ellison, 2012). In addition to this, relative anonymity among group members and a lack of accountability can also create environments conducive to misinformation, harassment, bullying, discrimination, and dangerous behaviour (Tomasi et al., 2022; Dahal et al., 2021; Merrill & Åkerlund, 2018).

While complicated, online communities like those which form via Facebook groups have the potential to create real impacts both online and offline––in some cases even functionally operating as a form of community infrastructure. Witten et al. (2021) provide an analysis of a Facebook group for residents in a mixed-tenure housing development in New Zealand, finding that the patterns of behaviour in the group and the on- and offline impacts of the group constitute a form of 'soft

infrastructure'. Through this Facebook group, residents built interpersonal relationships, shared local news and information, organized events, and allocated resources (such as goods and services or emotional support), ultimately building collective social capital which was then mobilized to address different circumstances (such as crowdsourcing support for a specific household, or organizing environmental clean ups). In this example among others, individuals participating in these online groups may be able to simultaneously utilize and co-create the online community as infrastructure (Witten et al., 2021; Star and Bowker, 2006).

Online communities effectively functioning as infrastructure can be seen across various instances of resource-sharing within online groups. Scholars have recognized effective resource and information sharing practices among online communities, offering evidence for collective efficacy through mutual participation (Lai, 2023; Baborska-Narozny et al., 2017; Chiu et al., 2006). What is especially unique about mutual participation in resource sharing among online communities are the patterns of self-governance and reciprocity among group members (Kuo et al., 2023; Lupton et al., 2016). Moreover, by voluntarily co-creating and co-maintaining peer-to-peer groups online, individuals have been able to generate and distribute resources in ways that existing networks or more formal channels are unable to fulfill (Autio 2018; Nasreen & Ruming, 2022).

Method-ology

The purpose of this study is to document and explore informal housing resources taking shape on one particular social media platform. Looking specifically at Facebook, and at two of Canada's largest urban centres––Toronto and Montreal––this research provides a mixed methods review of user-generated housing-related groups. Framed by theories of platform urbanism and online communities this research situates these Facebook groups within the broader housing landscape.

First, a quantitative analysis of the housing-related Facebook groups in Toronto and Montreal is provided, including information about the number of groups, the quantities of members, and activity levels, privacy settings, and tenure focus. Next, findings from a content analysis of group titles and group descriptions is used to determine the kinds of groups which have been created and joined by users.

Data collection

For this research, a dataset consisting of the housing-related Facebook groups serving Toronto and Montreal was developed. Entries in this dataset were collected through search procedures similar to those that a Facebook user might carry out in their search for housing resources on the platform. Queries on Facebook work like other search engines: keywords or phrases are typed into a field, the search is executed, and search results are displayed in a scrollable list. For this research, a set of keywords was established and searched for (in English for Toronto, and in French and English for Montreal), and searched to identify relevant groups. It is important to note that searching on Facebook involves personalization systems, which present search outcomes using algorithms that suggest and prioritize certain results over others, based on a user's activity on the platform (Carmel et al., 2009). To mitigate biases in this regard, a new Facebook profile was created to carry out this research, and no other activity (e.g. adding friends, liking pages, or joining groups) was performed using this account. Even with these efforts, however, it is not possible to entirely avoid personalization of results. Despite this, the use of a new Facebook profile ensures that these procedures could be replicated in future research and could produce similar results, if location and time frame is taken into consideration.

All of the data collected is public data, visible to anyone regardless of their access to a Facebook account. The data collected is visible through search queries outside of the Facebook interface, such as through a Google search. Publicly-available information about each group (regardless of privacy settings), including the group title, description, number of members, recent activity, privacy settings, and group rules were all documented manually. Manual data collection, while tedious, was essential given Facebook's policies. Facebook, and its parent company Meta, does not permit the use of any automated data collection systems (i.e. web scraping), be this through 'bots', software, or web applications (Facebook, 2010). Data was collected between July 10th, 2023 and August 14th, 2023.

For a Facebook group to be included in the dataset, it had to be explicitly related to some aspect of residential real estate or housing (this being made clear in the group title). Searches made use of a location filter (set to 'Montréal, Québec' for the Montreal searches, and 'Toronto, Ontario' for the Toronto searches) which limits results to groups that serve these locations. Groups which served the entire province, but were presented given the search parameters, were included, but not explicitly searched for. Each keyword or keyword set was searched once, and all relevant groups presented were recorded, with a maximum of 300 results being manually scanned per search. To be included, a group had to have at least 3 members, and each recorded group represented one entry in the dataset. Any groups related to interior design, architecture, construction, renovations, or other aspects of housing that were not directly related to the housing market, renting, selling, information about housing, etc. were not included. Groups focused on or related to a specific business (e.g. a particular development company or realtor), or a specific housing development were excluded.

Given the parameters of Facebook's search capacities, and the limited keywords used and queries performed, it is impossible to know if every relevant group was discovered. Relevant groups may not have been presented if they used different terminology, were written in languages other than English and French, or if Facebook's search algorithms simply did not present them. In addition to this, Facebook allows for the creation of 'secret' groups, which are not discoverable at all through search queries, and only joined via invitation form an existing member.

The keywords used were:

Toronto	Montreal
Housing	Housing, logement
Tenant	Tenant, locataire
Landlord	Landlord, propriétaire
Real estate	Real estate, immobilier
Apartment for rent	Apartment for rent, appartement a louer
Home for sale	Home for sale, maison a vendre

Facebook specifics

Facebook was introduced in 2004, and has grown to be the most used social networking platform in the world (Statistica, 2023, Wilson et al., 2012). The features available on Facebook, as well as its interface, have changed over time. This study is concerned with Facebook groups, which are user-generated virtual spaces that generally focus on a particular topic, place, or other purpose. To be a member of a Facebook group, an individual must have a personal Facebook account, and intentionally join a group (or request to join, depending on the privacy settings). Notwithstanding fraudulent, fake, or 'bot' accounts, members of a group are generally individuals, as opposed to organizations or companies (Park et al., 2009).

Facebook also offers a classified ad function, embedded within the platform, called Facebook Marketplace. While there are real estate categories within Facebook Marketplace, and housing-related practices are carried out within the Facebook Marketplace feature, it is not the subject of this study. Facebook Marketplace provides services similar to other classified ad platforms, such as Kijiji or Craigslist, and while research into Facebook Marketplace is certainly needed, this study turns instead to the highly unique, alternative, and especially informal channels through which housing is being navigated alongside digital classifieds. In essence, the scope of this research is limited to examining housing resources that are not accessed

through a formally-organized listings platform.

In terms of the inner workings of Facebook groups, there are a few functional elements that should be understood. First, activity in Facebook groups generally takes the form of user-published posts, and user engagement with these posts (e.g. commenting and liking). Posts can include text, photos, videos, and external links. Groups can be either public or private. Any user can view and join a public group, while the private setting allows groups to restrict access to content shared within a group, allowing only current members see what is happening in the group. In order to view or engage with activity in a private group, an individual must have a Facebook account, must request to join the group (which usually entails reading group rules and responding to questions set by the admin), and await admission by a moderator or admin.

Groups have at least one administrator, and can have several more if desired. The administrator (admin) does not need to be the creator of the group, and the people filling admin roles can be switched. Admins control the group through an array of settings. Groups can also have moderators (mods), which are assigned by administrators, and can have the same powers as administrators, if granted. Groups can make use of different settings providing different levels of control. For example, some groups choose to use a ‘post approval’ feature, which requires that each post from a group member is approved by an admin or mod before being shared to the group feed. Admins and mods can also remove or mute group members, delete comments, limit activity on a given post, or delete posts altogether.

Results

The results of this research provide broad-level qualitative insights, accounting for the number of groups, quantities of members across groups, activity levels, privacy settings, and each group's focus in terms of tenure. In addition to this, this study reveals two broad categories of groups––information groups and marketplace groups––and several subcategories. These findings help illuminate the kinds of activities being carried out in these informal, under-explored, digital spaces, while also drawing attention to the demand for and popularity of Facebook groups in the housing sphere.

Quantitative overview

Across both Toronto and Montreal, a total of 469 housing-related groups were discovered, with 231 being identified in the Montreal searches and 238 identified in the Toronto searches. There are a total of 5,495,451 members across all groups combined, this total including any accounts which may be members of several groups. Groups range from three members (the minimum to be included in the dataset), to over 175,000 members. In both cities, the average group size is about 12,000 members, while the median of group membership is about 2,350 (2,400 in Montreal, and 2,300 in Toronto). In both cities respectively, about 50 groups have fewer than 100 members. Of the total groups, 61% have 1000 members or more, and 29% have at least 10,000 members. In both cities, nearly a tenth of the groups have 50,000 members or more. A handful of groups are especially populous, with five different groups having over 100,000 members (two of which are in Montreal and three of which are in Toronto). To put these numbers in context, the Montreal CMA has a population of 4,308,000 as of 2023, and the Toronto CMA is home to 6,372,000 residents in this year. Between Montreal and Toronto, patterns in membership and activity appear to be quite similar. In both cities, the frequency of posts in a group generally corresponds to group size, with most of the large groups (10,000+ members) receiving at least several posts a day, and some of the most popular groups receiving hundreds of posts per day. Of the Montreal groups, 56% are reported as having daily or weekly activity, while 62% of Toronto groups have daily or weekly activity. About one fifth of the groups in each city appeared to have no recent activity at all, most of which have relatively few group members.

Overall, about one third of groups are private, while two thirds are publicly accessible, and can be viewed and joined by anyone. Interestingly, in Toronto, the three largest groups, each with over 100,000 members, are all set to private––this is not the case in Montreal, where the very largest groups are public. In Montreal, the average number of group members across private groups and public groups is the same as the total average: about 12,000. In Toronto, however, the average number of members in private groups is over double that of public groups––about 18,000 compared to 8,000––due to skewing from the highly-populated private groups. While searches were only performed in English in Toronto, and in French and English for Montreal, a few groups with titles and descriptions written partially in other languages were presented, including Spanish, Persian, Russian, and Sanskrit.

In both Toronto and Montreal, the majority of groups focus specifically on renting, this being about 60% of all groups in both cities. In both cities, a handful of groups are concerned with both rentals and sales, and only about a quarter of groups cater to only the sale market, be this through information-sharing or marketplace functions. In general, the most popular groups in both cities are related to renting.

Group purposes

Using the data collected, and through a content analysis of group titles and descriptions, different kinds of group purposes have been discerned. The following categorization takes into account the explicitly-stated purposes of the group, though the actual activities within the group could differ from the stated purpose. Broadly, groups either focus on information-sharing or marketplace functions. In terms of marketplace groups, there are general marketplace groups, and marketplace groups for specific locales, for market sub-sectors, and for specific demographics. It is important to reiterate here that the term 'marketplace' in this context does not refer to the 'uppercase-M' Facebook Marketplace feature, but marketplace as in a space where goods or services are exchanged. Among information-sharing groups, there are groups focused on real estate networking, landlord and tenant advice and support, social purposes, and demographic-specific support.

Marketplace groups

Many of the groups identified appeared to be spaces that functioned as classified ad platforms. Of the groups identified in Toronto and Montreal, the majority stated their purpose as related to market functions. Across all of the groups identified, this was a total of 81% (381 different groups) which appeared to serve as marketplaces. Of these, the majority are dedicated to rentals. Several different sub-types of marketplace groups were discerned, this is: general marketplace groups, specific-locale marketplace groups, market sub-sector groups, and demographic marketplace groups.

General marketplace groups

General marketplace groups are those which use appropriately broad terms in the group titles and descriptions, such as "Toronto Home Zone" or listed multiple subsectors, making it clear that the group is intended to support a variety of different kinds of properties, one example of this being the group "Montreal Rent/Sell a room/apartment/house/condo/studio/sublet/roommate". Without restricting group activity to a specific place, demographic, or sector, it can be assumed that these groups may have a diverse offering of listings.

In total, across both Toronto and Montreal, general marketplace groups accounted for about half of the total groups, and most of the very popular groups (over 50,000 members). In Toronto, of the top 10 largest groups, all but one are general marketplace groups, and of these, all are focused on the rental market. Overall rental-focused, general marketplace groups are the most popular housing-related Facebook groups in Toronto. Looking to Montreal, similar patterns are found, though there are slightly more groups catering to more specific niches (e.g. sub-sectors or demographics) among the most popular groups. In Montreal, all but three of the most popular groups have been identified as general marketplaces. Like Toronto, and taking into consideration both the number of such groups and the representation of this kind among the largest groups, rental-focused general marketplaces are the most popular kind of group in Montreal as well.

In Montreal alone, there are nearly 70 Facebook general marketplace groups containing over 1000 group members. In Toronto, 80 groups of this kind have at least 1000 members. With so many groups of this kind, and so many group members across these groups, it is not surprising that there are generally high levels of activity as well. Of the total groups in both cities, about 55% of general marketplace groups receive daily or weekly posts. However, when excluding groups with relatively few members (less than 1000 members), this jumps to 80% of these groups with daily or weekly activity. Among general marketplace groups, the patterns in terms of privacy settings

reflected the broader trends across all groups, with about two thirds of groups being public.

Market sub-sector groups

Of the groups identified, many focused exclusively on particular sub-sectors of the rental market or sale market. Each group of this kind clearly stated in the group title and/or description that it caters to a specific niche of the market, such as rooms for rent, lease transfers, luxury properties for sale, or apartments which accept pets. Some of these groups make it clear in the descriptions that any posts unrelated to the particular sub-sector are forbidden, some stating that posting something irrelevant will result in a member being removed or blocked from the group.

Across the entire dataset, sub-sectoral groups are less common than general marketplace groups. In Toronto, this kind of group makes up only 5% of the total, whereas Montreal has over three times the amount of sub-sector groups, at 16% of total groups. Montreal's sub-sector groups offer a wide variety of specific niches, several of which are unique to Montreal, and not represented at all among the Toronto groups. For instance, there are six groups serving Montreal which concentrate on lease transfers or apartment swaps, a sub-sector which is not mentioned in the Toronto groups. In addition to this, two groups discovered in Montreal are for "non-MLS" listings. MLS stands for Multiple Listing Service, which is a kind of database created and shared by cooperating real estate brokers, containing data about properties listed for sale. These non-MLS groups make it clear that only listings which are not formally recorded in professional real estate databases are permitted, suggesting the creation of an 'off-market' marketplace.

In Montreal, there are 13 groups focusing exclusively on roommates and rooms for rent, while there are only two groups of this kind in Toronto. There are groups in Toronto which include listings for roommates and room rentals, but groups that mentioned this, also mentioned other forms of renting, as with other general marketplace groups. Other more common sub-sectors found in both Toronto and Montreal groups include pet-friendly rentals (five in Montreal, one in Toronto), furnished apartments (three in Montreal, two in Toronto), and short-term rentals (two in Montreal, two in Toronto).

Locale-specific marketplaces

Of the marketplace groups identified in this research, several targeted specific locales within the metropolitan areas of each city, including neighbourhoods, boroughs, or suburbs of Montreal and Toronto. These groups made explicit mention of the locale that the group is directed towards in their titles. The locale-specific groups in Montreal are nearly all public, and all four such groups in Toronto are public as well. In both cities, most of these locale-oriented groups target the rental market, with only a handful focusing on property sales.

These kinds of groups are significantly more popular in Montreal than in Toronto. Only four locale-specific groups were identified among Toronto groups, all four of which focus on areas outside of Toronto's core. In Montreal, however, there are 19 instances of this kind of group. The Montreal locale marketplace groups mostly named a particular borough or neighbourhood, examples of this being "Logement Village Gai Montréal // Montreal gay village renting" and "Logement à louer Rosemont-La Petite-Patrie" (translation: Housing for rent Rosemont-La Petite-Patrie). Neither Toronto nor Montreal has complete representation of different neighbourhoods or areas among these groups.

Demographic marketplace groups

Of the marketplace groups, several in both Toronto and Montreal were distinctly oriented to a specific demographic. Most of the groups which stated that they serve a particular demographic included this information in the group title. These demographics spanned age, occupation, migrant status, ethnicity, and sexual and gender identity. Overall, about 15% of total groups serving Toronto cater to specific demographics, while 10% of total groups in Montreal pertain to a particular demographic.

As mentioned, a variety of different demographics are mentioned across groups. Of all the demographic groups in Toronto and Montreal, groups for students are the most common, and generally have the most members. A total of ten groups for newcomers were identified in Toronto and Montreal, including those serving international students and people with visas. Groups catering to individuals of a particular race, ethnicity, or nationality appeared in both Toronto and Montreal, there are a total of 17 groups of this kind. Generally, these groups appeared to serve one specific community, though one group in Montreal, titled "Chez IBPOC-Tiohtià:ke/Montréal" caters to all individuals who identify as Black, Indigenous, or as a person of colour, but remains exclusive to this demographic.

Another notable demographic among these groups is that of 2SLGBTQIA+ individuals. While only three queer-oriented groups were discovered in Toronto and Montreal (one in Montreal, two in Toronto), these groups have a high number of members compared to other, non-student, demographic marketplace groups. At the time of study, "Chez Queer Montréal" has 25,200 members and saw over 250 posts in the last month, while "Homes for Queers Toronto" had 19,000 members and had over 150 posts in the last month alone.

In Toronto, all but one of the demographic marketplace groups are oriented towards renting. The one group not related to renting, is a group for Russians interested in property sales. In Montreal, there are three demographic marketplace groups specifically for property sales, one for women, one for people identifying as Black, and one for Iranians in Montreal. In both cities, just under half of the demographic marketplace groups are private, which is a higher ratio of private to public groups compared to the split of privacy settings across all groups.

Important to note here, is that several groups had titles and descriptions written in languages other than French and English. While these groups could be considered as demographic-oriented groups, as they appear to cater to speakers of the language used, if no specific demographic is mentioned (determined through the use of translation software), these groups were classified under other categories.

Information-sharing groups

While not as common as the marketplace groups, some of the groups identified served the purpose of sharing information rather than housing listings and commerce activity. These information-sharing groups make up 19% of all groups (88 groups in total), with 31 in Montreal, and 57 in Toronto. In both cities, the majority of information-sharing groups focused primarily on property sales rather than renting. Several sub-categories of information-sharing groups have been identified, these being: networking and general support groups, demographic support groups, tenant and landlord advice and support, and social purpose groups.

Real estate networking and knowledge-sharing

Most of the information-sharing groups identified have purposes relating to networking with others and sharing general real estate industry knowledge, news, and other information. These groups used terms in the group titles or in the descriptions that generally pertained to connecting with others, engaging in discussion, and participating in mutual exchanges of information, all in the context of the real estate industry.

Generally, these networking groups are oriented to the sales market. Groups state, in the titles and descriptions, purposes encompassing the sharing of real estate news, market insights, advice in terms of buying and investing, and connecting with others interested in real estate as an industry. Notably, in Toronto and Montreal, there appeared to be no groups which focused only on networking among tenants. All of the networking groups in Montreal focused on buying, selling, and investing in real estate. In Toronto, the vast majority of groups focused on discussing and connecting with others about real estate sales and investments, although one group, called "Toronto housing woes - CBC Toronto" appears to encourage discussion about challenges in renting or purchasing property.

Many networking groups appear to be specifically focused on networking among those interested in property ownership and the real estate industry more broadly. Some of these groups appear to be by and for those with somewhat entrepreneurial interests, this being seen in group titles such as "Montreal's Real Estate Investing Mastermind Group" or "Property Hustlers - Real Estate Community." Of the networking groups which focused on the sales market, many have relatively few members. In Toronto, 23 of the 30 groups of this kind have less than 300 members, while in Montreal, 15 of the 21 groups of this kind have fewer than 300 members. In Montreal, one networking group, called "Mordus d'immobilier" (translation: 'Real estate buffs'), is significantly more popular than the others, with nearly 90,000 members. In Toronto, the largest networking and knowledge-sharing group is called "Toronto Housing Market Bubble," and as per the group description, appears to be a discussion group for the sharing of news, information, and data regarding Toronto real estate.

Social purpose groups

A small number of information-sharing groups appeared to focus on social purposes. These groups stated clear agendas for promoting some kind of movement, initiative, or form of housing, generally associated with the improvement of housing affordability. Only four of these groups have been discovered, with three of these being in the Toronto context, and one being related to Montreal.

The three Toronto-based social purpose groups covered the following topics: subsidized housing initiatives, housing action and mobilization against unaffordability and homelessness, and laneway units as a form of affordable housing. In Montreal, the only social purpose group is focused on gentrification, titled "Locataires unis contre la gentrification" (translation: 'Tenants united against gentrification'). Reviewing the descriptions of these groups, it appears that group members are encouraged to discuss and mobilize in support of the topic at hand.

All of the four social purpose groups are public. The three groups of this kind in Toronto are relatively small, ranging from 211 to 4,200 members. In contrast to this, the single social

purpose group in Montreal, which focuses on gentrification, has over 14,000 group members. Notably, in Montreal, there is one other group which mentions gentrification in the title, but this group appears to focus more on providing advice and information to tenants, and is thus categorized as a tenant and landlord advice and support group.

Tenant and landlord rights, advice, and support groups

Searches in Toronto and Montreal revealed several information-sharing groups which are specifically focused on the experience of being a tenant or landlord, and which facilitate the sharing of relevant advice, information about rights, and support. Some of these groups focus specifically on the experience of being a landlord, some on being a tenant, and some serve as resources for both landlords and tenants. These groups are different from networking groups in that they are spaces specific to the legal considerations and lived experiences related to occupying the position of a tenant or landlords, rather than relating to the broader real estate industry.

In Montreal, nine groups focusing on the interests and needs of tenants and landlords were identified. Two of these appeared to be oriented exclusively towards landlords, one being for owners of plex buildings (a common building typology in Montreal, usually containing between two and 6 units which can be rented out individually), and the other being a group called "Landlords Beware! Bad Tenants-Montreal". The 'Landlords Beware!' group is a unique case, appearing to serve as a private discussion group where landlords in Montreal can share information about so-called 'bad' tenants. This group, perhaps surprisingly, is public, and has only 136 members. Conversely, a group called "Très bons locataires, mauvais proprios (Québec)" (translation: 'Very good renters, bad landlords (Quebec)), was also discovered in the Montreal context. This group appears to be solutions and advice oriented, with its description encouraging group members to share their experiences with problematic landlords, and provide advice and guidance for others who are dealing with difficult landlords.

Searches in Toronto revealed 14 groups concentrated on landlord and tenant experiences. Of these, six appeared to be spaces for the sharing of advice and information among both tenants and landlords. Four groups appeared to cater to tenants, this being clear through group names such as "No Tenant Left Behind Ontario: Tenants Rights, Advocacy & Support" and "Tenants Network Toronto." There are also four groups which appear to serve landlords, such as "Ontario Landlord Haven" and "Homeland. Ontario Landlords for Landlords."

Of these landlord and tenant resource groups, several explicitly provide support for navigating legal processes at the provincial level. In Montreal, two groups appear to be spaces where individuals can seek advice and support when dealing with the TAL, or the Tribunal administratif du logement (Quebec's housing tribunal). Similarly, among Toronto groups, two make specific mention of the OLTB, or the Ontario Landlord and Tenant Board, which is the province of Ontario's housing tribunal. In both the Montreal and Toronto context, and especially in the latter, many of these rights, advice, and support groups appear to operate at the provincial level. In fact, of the 23 total groups across both cities, 15 refer to Ontario or Quebec as the scope of the group, as per the group titles and descriptions.

Demographic support groups

The searches for housing groups in Toronto and Montreal revealed a handful of groups which served specific demographics, other than tenants and landlords. These groups refer to a specific demographic in the group title, and appear to primarily facilitate the sharing of support among members of the given group.

In total, seven support groups catering to specific demographics were identified, six of these in Toronto, and one in Montreal. Almost all groups targeted a different demographic, except for two, which are both for Black individuals navigating housing in Toronto. Several of the demographic support groups appear to serve ethnic minorities and non-Canadian nationalities, one

group supports people living in social housing in Toronto, one group is for senior women living with other senior women, and the single Montreal group of this kind caters to French-speaking immigrants. All but one of these groups is private. Each group is relatively small, with the largest group having 6,500 members.

Discussion

The findings of this research offer tangible evidence of the widespread usership of housing-related Facebook groups, and draws attention to these informal groups as sites for peer-to-peer resource-sharing, touching a variety of housing needs, interests, and experiences. The broad-level qualitative insights provided in this research make it clear that housing groups are popular and highly-frequented online spaces in two of Canada's largest cities. By recognizing the quantity of groups, and the levels of membership across these groups, these findings work to acknowledge and draw attention to Facebook groups as relevant and legitimate sites of contemporary housing practices.

In observing the various kinds of groups that are available on Facebook in the contexts of Toronto and Montreal, this research identifies two main kinds of housing-related groups: information-sharing groups and marketplaces. With four distinct sub-categories being established within the two kinds of housing groups, it is clear that individuals are motivated to create and join groups relating to many different aspects of the housing sphere. In this sense, there appears to be demand for a wide array of housing resources to be translated into these informal, peer-to-peer virtual spaces.

Hidden housing markets

The results of this research show that marketplace groups are by far the most common form of housing-related resource groups on Facebook. With four different kinds of marketplace groups being delineated in the findings, it is apparent that there may be many reasons why users choose to use Facebook groups as mediums for housing-related commerce and exchange, in comparison to more formally-organized real estate market platforms. Ultimately, these groups operate outside of the typical interfaces where individuals interact with housing markets. By connecting tenants and landlords, roommates, or buyers and sellers outside of formally-established channels, these Facebook groups function as 'hidden' housing markets. However, given the limited information available about the impacts of these marketplaces in the lives of individuals and the housing market more broadly, it remains unclear to what extent hidden housing markets may be influencing housing today.

Across both Toronto and Montreal, general marketplace groups are the most common and the most popular kind of marketplace group observed. Dozens of groups with this purpose were found in both cities, many of which having thousands of group members, and the majority of which showed frequent activity. The popularity of general marketplace groups is interesting given that these groups are most similar in purpose to widely-available real estate and classifieds platforms. This raises questions of why users may choose to participate in marketplaces via Facebook groups, rather than through other means.

Moreover, rental-specific marketplaces, whether general-purpose or targeting a specific demographic, locale, or sub-sector, were also found to be quite popular. Dozens of rental marketplace groups were found to have tens of thousands of members. The clear demand for and interest in these informally-

organized rental marketplaces offers further evidence for processes of rental market informalization mediated by platform technology (Maalsen, 2020; Shrestha et al., 2021; Ferreri & Sanyal, 2022; Ferreri & Sanyal, 2022). At the same time, the discovery of a wide range of more 'niche' rental marketplace groups suggests that Facebook groups may be particularly useful for curating and controlling rental groups catering to a specific purpose.

Many of the specific-purpose marketplace groups allowed for exchanges that might not be possible via more formal real estate interfaces. For example, there were two groups identified in Montreal which are explicitly for sale property listings that are not formally registered in real estate broker databases. At the same time, many other marketplace groups appeared to reflect the same functions that are available on standard real estate platforms, such as those focused on specific locales.

Particularly interesting, given the understanding of the marketplace groups as forms of hidden housing markets, are the patterns in market sub-sector and demographic marketplace groups. In terms of the former, several specific examples are notable, such as the Montreal lease transfer groups, several of which were identified. The practice of lease transfers has been pointed to as a means by which tenants in Montreal are attempting to stave off rent increases, functioning as de facto rent control (Morris, 2023). This is even more relevant at the current moment, as recent movements to allow landlords to block lease transfers have been met with widespread resistance in Montreal and broader Quebec (Magder, 2023). Facebook groups which facilitate lease transfers in Montreal have also been recognized in the media (CBC News, 2014; Harris, 2020), suggesting these Facebook groups may play quite a meaningful role in maintaining the practice of lease transferring, and even battling rising rents in Montreal.

The demographic marketplace groups which were identified also represent a unique form of resource. Groups which cater specifically to racialized people, 2SLGBTQIA+ individuals, newcomers, and other marginalized identities were documented in this research, each of these demographics historically and still today facing discrimination in their housing journeys. These demographic-specific Facebook groups have also been documented in news media in recent years. Local, queer-oriented housing groups appear to be improving housing outcomes in San Francisco (Kasian-Morin, 2020), Halifax (Lee, 2021), and Vancouver (Migdal, 2019), while Toronto's "Renting While Black" group appears to be effective in providing Black tenants with support and information (Okwuosa, 2023; Vincent, 2019). The popularity of marketplace groups which aim to facilitate safer, more equitable housing experiences could point to gaps in formal resources, including typical real estate listing platforms. For instance, it is not possible for a queer renter to filter out homophobic landlords when searching for an apartment on Zillow.

Like other kinds of Facebook groups which serve particular demographics and identities, Facebook groups allow for a degree of control and monitoring of group members (via moderation, privacy settings, and information gleaned from user profiles), which may help in the creation and maintenance of safer virtual spaces (Korn, 2015; Abrams et al., 2018). In addition to this, the 'hidden-ness' of these demographic marketplaces may work to further shelter these virtual spaces from patterns of systemic discrimination in other housing spheres.

The existence of so many, and such popular marketplace-style Facebook groups underscores the role of informal, and even hidden, channels through which people today are navigating housing markets. Operating outside of more conventional spaces for housing market practices, these Facebook groups afford users alternative options for where and how to search for and list accommodations and properties.

Informal communal infrastructure

This research has established that many different kinds of housing practices are being carried out in the overlooked, and highly informal spaces of Facebook groups. Taking into consideration the four kinds of marketplace groups which were discovered, as well as the four kinds of information-sharing groups, these groups rely on the mutual participation of group members, and ultimately the co-generation of communal resources. With such a robust network of different housing resources being collectively created and utlized, it seems that these spaces may constitute a kind of informal, communal infrastructure.

Indeed, users involved with the groups observed in this study are voluntarily co-creating a set of digital housing resources in order to address their own and others' housing needs. By engaging in this process, group members are able to not only have infrastructure, but do infrastructure (Star and Bowker, 2006). As people co-develop physical or social communal infrastructure, these practices have the potential to fill gaps left by formal, institutionally-formed infrastructures and resources, while also empowering individuals through their involvement (Autio, 2018; Scholz, 2016; Mäntysalo et al., 2015).

Particularly interesting here is the co-creation of information-sharing groups, as a form of infrastructure which supports individuals across various experiences in housing. With several kinds of these information-sharing groups being identified, these groups offer moral support, advice, education regarding the law and one's rights, and initiatives to raise awareness of and promote a social cause. In marketplace groups, directly self-serving participation (e.g. posting a listing for a home for sale, or searching for available rentals) works to produce and maintain group functions. Information-sharing groups, however, rely on contributions from group members that may not directly benefit the user contributing (e.g. offering advice to others, sharing news, or providing emotional support). While the exact reasons why individuals choose to participate in these ways cannot be clearly discerned within the scope of this study, it may be, as shown in the literature on virtual communities, that group members are motivated to share knowledge, resources, and information in part due to their understanding that mutual participation is essential in maintaining a shared resource (Chiu et al., 2006; Blankenship & Ruona, 2008).

Among the information-sharing groups, only one kind appeared to concentrate on more economic and industry-related information, as opposed to personal advice and support. These real estate networking and information groups appear to serve primarily as discussion groups which may advance personal goals or interests in buying or investing in real estate. While these groups were the most common of the information-sharing groups, the low membership and activity levels in many of these groups suggest that not all are particularly active communities. Despite this, the social networking capacities of Facebook as a platform may lend itself to the formation of networking and connection-focused groups of this kind.

The tenant and landlord rights, advice, and support groups appear to provide a variety of resources to individuals in their experiences navigating renting, and the responsibilities as a tenant or landlord. Most of these groups seem to serve educational purposes, helping disseminate information about housing laws and regulations in Ontario and Quebec. In these cases, the Facebook platform may be an attractive means to seek out education and advice due to its accessibility, in comparison with more formal resources such as legal aid clinics, housing non-profits, or government-provided resources relating to rights and the law. Users in these groups are able to engage with peers rather than organizations or institutions, which may be less intimidating, less unfamiliar, and more 'human' compared to navigating formal channels for information.

At the same time, the practices of these groups, which explicitly pertain to the law and individuals rights, raise important questions around legitimacy and accuracy. As the literature on virtual communities and resource sharing emphasizes, relative anonymity among group members, plus a lack of regulation

and a lack of accountability can be conducive to misinformation (Dwoskin, 2019; Dahal et al., 2021; Nasreen & Ruming, 2022). While the scope of this research is unable to determine accuracy and reliability of the information shared within these kinds of groups, it may be that they still work to successfully fill gaps in existing, formal resources relating to housing rights and legal processes.

Among the landlord and tenant groups, at least two groups appeared to take stands against 'bad tenants' and 'bad landlords', with the group focused on 'bad tenants' explicitly seeking to identify and share information about tenants. These kinds of 'bad tenant' lists have been seen in other cities across Canada as well, media reports have drawn attention to the problematic and potentially dangerous activities of identifying, discussing, and attempting to 'blacklist' tenants via these groups (Boothby, 2022; Ryan, 2021). These concerning patterns reflect well-documented behaviours in online communities, showing that Facebook groups can facilitate harassment, hate speech, and other problematic behaviours, patterns which can be exacerbated as these groups remain largely unseen and unregulated (Ditrich &
Sassenberg, 2017; Awan, 2016; Dwoskin, 2019).

Broadly, the emergence of housing-related Facebook groups that focus on sharing information could be understood as a response to the complexities of the housing landscape, and individuals' desire to connect with others in the face of this. Rather than seeking out more formal resources, or utilizing conventional housing resource infrastructure, individuals in these groups are able to connect and interact with other people with some kind of shared experience or interest. These groups are able to leverage the interactive and real-time nature of social media platforms to address questions, disseminate guidance, and foster a collective repository of experiential knowledge. In a sense, these information-sharing groups may work to democratize access to housing information and improve both individual agency as well as collective strength.

Applying the perspectives of Plantin et al. (2018), housing resource groups on Facebook appear to be instances of both 'infrastructuralized platforms' and 'platformized infrastructure,' through the extension of the Facebook platform to host a network of housing resources, and the translation of existing housing practices into the platform sphere. In this sense, the existence and popularity of the Facebook groups examined in this study also serve as evidence of the broader 'platform society' (Van Dijck et al., 2018).

All kinds of housing groups, both marketplace and information-sharing groups, can be considered as part of this communally-formed, networked infrastructure. Taking stock of the purposes of groups identified, it seems that some form of resource is available in this medium for nearly every step of an individual's housing pathway. Given the robustness of group offerings, and the apparent capacities within groups, a degree of collective efficacy is apparent here (Lai, 2023; Baborska-Narozny et al., 2017).

Rather than deeming the informal infrastructure that is taking shape via Facebook groups as entirely alternative or in opposition with traditional infrastructure, it may be more appropriate to view these developments as reproductions of existing systems elsewhere online and offline. As a product of the 'platform society', these communally-generated resources may actually blur lines between what is considered conventional social infrastructure and what appears to be informal. As scholars, policymakers, and individuals become more familiar with the vast and complicated digital housing ecosystem, it will be essential to examine how the recursive movements between this digital resource landscape, including its many informal channels, and other existing infrastructure, are shaping experiences of housing.

Conclu-sions

How individuals and households are finding accommodation, engaging in real estate commerce, and gathering information pertaining to their housing situations or dilemmas, is difficult to track, let alone fully understand. As asserted by Barns (2019a), urban residents' constant and dynamic engagement with platform technology has become a central aspect of everyday life. Just as the significant influence of platform real estate technology has reconfigured the search for and exchange of property, social media platforms have transformed practices of community formation, information-exchange, and interaction with others. User-generated and user-maintained Facebook groups which facilitate the co-generation of housing resources, be this marketplace functions or information-sharing, operate through the intersection of elements of platform real estate and social networking.

The quantitative overview of the peer-to-peer housing groups serving Toronto and Montreal reveals a substantial number of relevant groups, and an impressive quantity of people involved in these groups. Many of the groups identified have tens of thousands of members, some groups have hundreds of thousands of members, with membership across all groups combined totaling 2,733,332 in Toronto and 2,762,119 in Montreal (including users who may be members of several groups). In addition, dozens of the groups have frequent and recent activity on behalf of group members. These findings align with results from other quantitative analyses of Facebook groups concerned with a particular topic or locale, which have emphasized the potential for real, tangible impacts in people's lives and the broader urban context, given such widespread usership and activity within groups (Titgemeyer and Schaaf, 2020; Autio, 2018).

These Facebook groups, as spaces built and operated within a platform ecosystem, effectively exist as informal communal infrastructure. The grassroots and collaborative nature of these groups allow for this 'platformatized infrastructure' to remain relatively informal, in comparison with other real estate or classified ad platforms (e.g. Zillow, Crigslist, or Kijiji), and formal housing organizations and resources (e.g. legal professionals or housing non-profits). Moreover, the marketplace groups within this infrastructure remain relatively hidden compared to more formal market interfaces, which can work to serve niche demographics while presenting unique challenges in terms of regulation. Overall, the Facebook groups identified may work to contribute to the broader informalization of housing, and particularly rental housing, via digital platforms. In addition to this, given the lack of knowledge regarding Facebook groups as a site for housing practices, these informal channels are at risk of remaining largely overlooked in discussions of the broader housing sphere.

How individuals and households are finding accommodation, engaging in real estate commerce, and gathering information pertaining to their housing situations or dilemmas, is difficult to track, let alone fully understand. As asserted by Barns (2019a), urban residents' constant and dynamic engagement with platform technology has become a central aspect of everyday life. Just as the significant influence of platform real estate technology has reconfigured the search for and exchange of property, social media platforms have transformed practices of community formation, information-exchange, and interaction with others. User-generated and user-maintained Facebook groups which facilitate the co-generation of housing resources, be this marketplace functions or information-sharing, operate through the intersection of elements of platform real estate and social networking.

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Policy recommendations

Efforts to develop and enforce policy around any form of platform technology has been an ongoing struggle for governments around the world. As seen in the challenges in regulating STR platforms like Airbnb, there is often a diffusion of responsibility among users and the platform itself, and enforcement remains highly difficult as online activities can be very hard to track and associate with a real individual.

Housing-related Facebook groups operate in a relatively unregulated digital space, which means that there is little to combat misinformation, scams, and unethical practices within groups. While encouraging change among multinational technology conglomerates like Meta-owned Facebook may be incredibly difficult, policymakers could explore the development of regulatory frameworks that promote transparency and accountability within these platforms. This might include the establishment of more robust mechanisms for reporting fraudulent or misleading information, or the implementations of algorithms and filters that can detect and flag potential scams or misinformation.

Recognizing the potential value of peer-to-peer housing resources on social networking sites like Facebook, there may be good reason to avoid overly-restricting these kinds of activities. Aside from efforts to combat illegal activity, scams,

and misinformation, policymakers should prioritize information-gathering strategies to assess the whole scope of housing-related platforms and spaces across the Internet. Importantly, the Facebook groups examined in this research reflect only one part of a much larger landscape, and prior to the formation of any policy, there must be concerted efforts to document the available formal and informal resources.

There may also be opportunity for partnership, collaboration, or referral to housing-related Facebook groups by community organizations or institutions. One example of this can be seen in Vancouver, where a prominent 2SLGBTQIA+ community centre called Qmunity, actively refers 2SLGBTQIA+ renters to a queer-oriented housing group on Facebook called "Homes for Queers Vancouver" (Migdal, 2019). Organizations providing legal counsel, advice, and education on one's rights as a tenant, landlord, or property owner could also make efforts to collaborate with existing advice and information groups, in order to offer reliable and accurate information to group members. Taking Facebook groups seriously as housing resources, existing community organizations and non-profits should recognize the potential for collaborative action which increases the capacity and quality of the resource environment.

Limitations

There are several limitations in this study, some of which have been previously discussed. The choice to use search queries within the Facebook interface to identify and document the discoverable housing-related groups serving Toronto and Montreal was effective in gathering data within Facebook's guidelines, and within the timeline available for this study. However, the keyword-based searches, which are inevitably non-exhaustive, were limited by language (only French and English keywords were used), making it possible for other groups operating in different languages to have been missed. Groups which are set to 'secret' meaning that they do not appear in any searches, and can be accessed only through invitation, were also not available in the data collection process. In addition to this, Facebook's search algorithms suggest results that are predicted to be most relevant, and despite the creation of a new Facebook profile to carry out this research, and restricting any activity on this profile, Facebook's search engine still generates personalized results based on minimal user activity. As such, it is possible that the search personalization algorithms did not allow for all groups to be discovered. Lastly, with each search, only the first 300 results were scanned for relevancy, and while rarely any groups further down on the list of results were relevant to housing, it is possible some groups were missed in this way as well.

Beyond the limitations of the data collection process, there are several considerations given the finite scope of this project. As this study intends to provide a broad overview of a largely undocumented aspect of the housing ecosystem, more intricate and in-depth inquiries are not attended to in this research. To fully understand what the impacts of housing groups on Facebook may be, there is the need to explore the efficacy of groups, the kinds of content being shared in these groups, and group member behaviours.

Other limitations also became clear over the course of the research, such as the unknown impacts of spam posts and fake or 'bot' accounts. It is possible that a significant portion of the membership and activity within any given group could be derived from inauthentic accounts, even in private groups. It is not possible, given the available tools and ethical guidelines, to discern 'real' members and activity. At the same time, practically nothing is known about the real people who are creating, managing and moderating, and using these groups. Greater insight into who group members are would be useful. The following section offers suggestions for future research pathways, taking into account the aforementioned limitations of the present study.

Future research

Informal channels by which people are navigating housing is an area deserving of significantly more scientific and public inquiry. Perhaps one of the greatest takeaways from the present study is exactly how little is known about the ever-evolving intricacies of the digital housing landscape. More research is needed which seriously considers social networks, and specifically Facebook, as sites for important housing experiences and processes.

As mentioned above, questions regarding what actually happens within these groups are most pressing. Inquiries into the demographic makeup of group members within specific groups, and across groups more generally, would be helpful in order to understand who these informal resources are serving. Rich, qualitative research, involving interviews with group members, content analyses of group discussions, and interviews with group administrators and moderators would be an illuminating pathway for future work, allowing for insight into the patterns of behaviour within these groups.

Qualitative methods would also be helpful in understanding the real, external impacts of these groups in individuals' housing experiences. Research which gathers data about personal user experiences in actually utilizing resources provided in each kind of group, following the typology provided in this study, would be particularly informative. Questions could be asked regarding whether marketplace groups are especially effective, convenient, or easy in connecting those offering and seeking accommodation or a sale property, and whether advice and information groups are useful in these ways as well. This kind of research would help develop understandings of how effective these groups are, and what the differences are between using Facebook groups for housing needs, compared to other, more formally-organized resources (e.g. classifieds websites or non-profit housing organizations). Understanding what motivates people to mutually participate––sharing and consuming information, experiential knowledge, property listings, or personal posts in search of accommodation, for example––could be gleaned through interviews or surveys.

In addition to the implications for individuals' lived experiences of housing, research which examines Facebook housing groups in relation to cost could be interesting. Specifically, this could entail a quantitative review which compares averages for listing prices across rental and sale properties in Facebook groups versus on other platforms, or even compared to those on the Facebook Marketplace feature. Through this kind of research, conclusions could be drawn about whether informal, peer-to-peer commerce and exchange activities happening in Facebook groups have the same results as that which occurs on more visible, formal interfaces for real estate markets.

Ultimately, this research has recorded hundreds of housing-related Facebook groups in Toronto and Montreal, and provided quantitative and qualitative insights into their functions. By providing a typology of the kinds of peer-to-peer housing resources available on Facebook, this research makes a useful contribution to newly-forming scholarly channels which examine how social media platforms, and specifically Facebook, have become sites for housing practices. Taking stock of the relatively hidden marketplaces operating via Facebook groups draws attention to the complexities of the contemporary digital housing landscape. At the same time, the existence of knowledge-sharing groups suggests that there may be gaps in available and accessible information-based housing resources. The results of this study emphasize that despite being largely overlooked in the literature, there are many informal, virtual spaces that are mediating individuals' everyday housing experiences.

Interpreting these groups as a form of networked communal infrastructure, this research draws attention to just one way that people are creating and co-creating their own means to achieve their needs in the housing sphere. Indeed, the groups in question highlight the transformative potential of 'platformized infrastructure' in reshaping the ways individuals access, share, and negotiate housing resources. These grassroots initiatives

reflect more than a trend limited to the virtual world. Rather, the creation and utilization of these groups signals that housing is becoming an increasingly digitally-mediated sector, and facilitated by platform technology, individuals are taking on new roles as both creators and consumers within these new frontiers. As platform technology continues to advance, and as challenges in the housing sector persist, it is important that grassroots, informal, or communal resources relating to housing are no longer overlooked.

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