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A Quantitative Examination of the Influence of Social and Structural Communication Variables on the Social Connectedness of People Experiencing Homelessness

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A Quantitative Examination of the Influence of Social and Structural Communication Variables
on the Social Connectedness of People Experiencing Homelessness

A thesis submitted in partial fulfillment
of the requirements for the degree of
Master of Arts in Communication

by

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University of Arkansas
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Abstract

This thesis examined the influence of social and structural communication variables on the perceived social connectedness of people experiencing homelessness in the Northwest Arkansas (NWA) and Joplin, Missouri areas. This study employed the ecological perspective of communication infrastructure theory (CIT; Ball-Rokeach et al., 2001) and a communication perspective which envisions communicative interaction as constitutive of social experience. Using survey data from 166 participants, this study examined 11 research questions and hypotheses drawn from extant literature on homelessness, social connectedness, and CIT. ANOVAs, *t*-tests, and hierarchical multiple regression analyses revealed a complex relationship between individuals and the communicative environment. This study extended past research within the CIT framework by applying key theoretical assumptions to a previously unexamined demographic. Additionally, this study affirmed the association between perceived discrimination and perceived social connectedness, and contradicted assumptions about the influence of race and sexuality on perceived discrimination and perceived social connectedness. The theoretical and practical implications of this research provide opportunities for further studies on the communicative behaviors of hard-to-reach populations and how communities might consider policies and programming when addressing the problems associated with homelessness.

Keywords: Social connectedness, perceived discrimination, communication infrastructure theory, communication ecology, communication action context

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Chapter One: Introduction

On any given night, approximately 700,000 people in the United States are experiencing homelessness and as many as 3,000,000 Americans will experience homelessness at some point within a given year (Community and Family Institute University of Arkansas (CFI), 2015). The United States Department of Housing and Urban Development defines homelessness as lacking a fixed, regular, and adequate nighttime residence, which includes living in a shelter or temporary dwelling such as a car or tent (Sullivan, 2022). Homelessness is a complex, societal problem which adversely affects not only those experiencing homelessness, but their communities as well (Latimer et al., 2017). People experiencing homelessness (PEH) suffer higher rates of morbidity and mortality, increased risks for mental health disorders, substance abuse, and incarceration, and often live within a societal framework which makes moving out of homelessness exceedingly difficult (Huffman et al., 2021; Hwang, 2002; Lee et al., 2017). For communities, the costs of homelessness are often found in funding social programs to include shelters and food pantries, as well as increased stress on the justice system and medical services (Culhane, 2008). The reasons for which individuals and families may lose their homes are numerous and, in most cases, there is a confluence of issues which lead to initial loss of housing. Whatever factors led to this loss, a similar combination of factors such as social disconnection, combined with legal, medical, and behavioral health problems, frequently act as barriers to escaping homelessness (Flaming et al., 2018).

Homelessness in Northwest Arkansas and Joplin, Missouri

This study focuses on the homeless population in the Northwest Arkansas (NWA) and Joplin, Missouri areas. According to a 2015 CFI report, it is estimated that more than 2,400 persons are experiencing homelessness in NWA with breakdowns in personal relationships and

job loss as the primary reasons for homelessness. However, consistent with extant literature on homelessness (e.g., Crane et al., 2005; Rukmana, 2020), the CFI (2015) report noted that the causes for homelessness in NWA were as varied and numerous as the individuals surveyed and that there was frequently a confluence of issues influencing the loss of housing. From that 2015 study, some of the contributing factors that led to homelessness include substance abuse and mental health struggles, which often lead to a loss of employment, destabilized personal relationships, and aggravated existing personal struggles. When speaking about their daily struggles, the participants in the 2015 CFI study revealed that getting clothing, finding a safe place to sleep and get clean, and getting enough to eat as their most pressing issues. These issues are also key factors that make maintaining employment exceedingly difficult. Approximately 64% of the individuals interviewed in the 2015 CFI study indicated that they were unemployed at the time and 40% of the participants stated that they felt they were worse off economically than they were a year prior. PEH in NWA are also at an increased risk of being the victim of violence or other crime when compared to the housed population. In that same 2015 CFI study, approximately half of the participants stated that they saw NWA as a dangerous place to live.

In their 2022 report, the Economic Security Corporation of the Southwest Area (ESC), located in Joplin, MO, reported that approximately 210 families in the Southwest Missouri (SWM) area were experiencing homelessness on a given night. It should be noted that no research project comparable to the one carried out in NWA by the CFI in 2015 has taken place in SWM in recent years. However, given the short geographical distance between the two areas, and the demographic similarities that exist between the city of Joplin and the cities that comprise the NWA communities, it is reasonable to expect that the socio-structural factors that influence life as a PEH in Joplin are similar to those in NWA.

Taken together, the CFI (2015) and ESC (2022) reports reveal that homelessness in NWA and SWM is a *wicked problem*, which means that it is a complex issue involving multiple stakeholders of various value sets and interests, with no singular solution available (Carcasson & Sprain, 2016). Although no singular solution may be available, what does exist are a number of perspectives through which researchers may explore and examine the phenomenon of homelessness. In doing so, they may add to the scholarly resources which community leaders and community development professionals may draw upon in the continuing effort to help, in various ways, the most vulnerable members of communities.

Study Goals

Communication infrastructure theory (CIT, Ball-Rokeach et al., 2001) is one useful perspective to address the issues surrounding homelessness. A communication infrastructure perspective provides an ecological lens to envision the relationship between and among communication environments, the communication actions of individuals within those environments, and the potential outcomes of those communication actions (Ball-Rokeach et al., 2001). This study employs quantitative research methods to examine the ways in which the built and social environments may influence communication behaviors of PEH in NWA and Joplin, Missouri. The primary focus of this study is social connectedness. Within the context of this study, social connectedness refers to thoughts and feelings of interpersonal closeness with the social world as a whole (Lee et al., 2001). There is a robust body of research and literature in various disciplines demonstrating numerous advantages of social connectedness and belonging for individuals and communities alike (House et al., 1988; Lee & Robins, 1998; Pascual, 2002; Townsend & McWhirter, 2005). Time and again, research has established the relationship between social connectedness and susceptibility to the most adverse effects of homelessness as

well as the likeliness for escaping homelessness (Bower et al., 2018; Fitzpatrick, 2017; Nooe & Patterson, 2010). In studies focusing on homeless populations, social connectedness has been examined in relation to mental health and substance abuse (Dang, 2014; Begun et al., 2018), criminal justice interaction (Whittaker et al., 2016), and overall well-being (Johnstone et al., 2016). Similarly, researchers have established associations between sense of community for PEH and increased life satisfaction (Bowles, 2014) and community participation (Townley et al., 2016). In these examples, social connectedness is often employed as a predictor variable. This study extends this line of research by examining perceived social connectedness as an outcome of communicative interaction. Additionally, by analyzing the influence of sociostructural communication variables (e.g., race, housing, transit use) on the perceived social connectedness of PEH, this study develops CIT's conceptualization of belonging by applying the theory's foundational assumptions to a hard-to-reach population. The following chapter offers a review of relevant literature on communication infrastructure theory, homelessness, and social connectedness.

Chapter Two: Literature Review

This chapter reviews extant literature about communication infrastructure theory (CIT; Ball-Rokeach et al., 2001), homelessness, and social connectedness. Because CIT forms the theoretical framework for this study, and because each of these concepts have exceptionally broad and robust collections of literature and research, I review the key concepts of homelessness and social connectedness within the structure of CIT. This approach should serve to appropriately narrow and guide this review into a consistent theoretical perspective. First, I review the theoretical conceptualization and basic assumptions of CIT while specifically focusing on the ecological perspective that informs this study.

I then review the constitutive components of CIT, which include the storytelling network, the communication action context, and communication ecologies. The review of the storytelling network will highlight theoretical implications from Ball-Rokeach et al. (2001) who posit storytelling as a path to belonging and attachment. From there, an explication of the communication action context and communication ecologies will explain Broad et al.'s (2013) concept of an environment's ability to promote or constrain communication and goal-oriented communicative behavior. Throughout these sections, I integrate relevant literature and research about homelessness and social connectedness to explore (a) how the physical and social structures of a community may influence access to communication resources and (b) what aspects of an individual's circumstances may influence the ability to optimally pursue goal-oriented communicative relationships.

Communication Infrastructure Theory

Communication infrastructure theory (CIT) provides an ecological lens to envision the interplay between the communicative environments of communities and the communication

actions of those individuals and organizations within it. CIT consists of two primary elements which include a *storytelling network* situated within its *communication action context* (Ball-Rokeach et al., 2001). The storytelling network is what occurs when individual residents, community-based organizations (CBO), and local or ethnic media participate in communication about a community or neighborhood (Broad et al., 2013). The communication action context may be seen as any part of the built or social environment that enables or constrains communication (Ball-Rokeach et al., 2001). Within this theoretical frame, individuals and communities are conceptualized as utilizing communication resources to achieve goals (Kim & Ball-Rokeach, 2006) and that network of communication resources comprises an individual's communication ecology (Spialek et al., 2016). Communication ecologies are dynamically affected by changes to the communication action context, are goal-oriented, shift in relation to changing needs, and may look different across ethnic and sociodemographic lines (Broad et al., 2013; Spialek et al., 2020). It is important to note that CIT is founded on an optimistic view that “people are social animals who do not suffer asocial conditions passively; rather, they adapt by using communication tools to reconstitute a social world in which the “I” and “we” can survive” (Ball-Rokeach et al., 2001, p. 393). This orientation toward adaptive socialization, which assumes that humans will seek out life-fulfilling and needs-meeting relationships, is what makes CIT a thoroughly appropriate framework, given this study's focus on a socially vulnerable population.

Theory Conceptualization and Development

The development of CIT is situated within an ongoing research project called *Metamorphosis: Transforming the Ties that Bind* (Kim & Ball-Rokeach, 2006; see metamorph.org). The *Metamorphosis* project, with its focus on diverse urban neighborhoods in

Los Angeles, seeks to understand how people socially construct neighborhoods and communities and work together to address problems. A primary focus for the Metamorphosis project is the storytelling processes that community members engage in to create belonging (Ball-Rokeach et al., 2001). CIT builds upon the assumptions of media systems dependency theory (MSD; see Ball-Rokeach & DeFleur, 1976) by focusing on the relationship and interactions that occur between communication environments, individuals, and communities (Kim & Ball-Rokeach, 2006). Ecological perspectives such as this allow researchers to explore and conceptualize a variety of different ways people live in, construct, and experience their environment (Hearn & Foth, 2007).

In the last two decades, CIT has been applied to examine a wide array of social and civic problems. Some of the more prominent applications of CIT include civic engagement (Gerson et al., 2017; Jung et al., 2013; Kim & Ball-Rokeach, 2006), community and minority health promotion (Cheong, 2004; Wilkin et al., 2012; Wilkin, 2013), and crisis and disaster communication (Matei et al., 2007; Spialek et al., 2021). This study will focus primarily on communication action contexts and communication ecologies. Although the storytelling network is critical to the envisioned ecological interaction among community storytellers and vital to fostering belonging, the lived reality for people experiencing homelessness (PEH) is one that precludes them from much of the storytelling network's basic assumptions and research findings. In the following sections, I offer a detailed explication of the major components and assumptions of CIT with relevant concepts of homelessness and social connectedness coalesced to produce research questions and hypotheses.

Storytelling Network

Storytelling is foundational to the human experience (Haigh & Hardy, 2011). The CIT perspective posits that storytelling is a necessary condition for fostering belonging and participation in a community (Ball-Rokeach et al., 2001; Kim & Ball-Rokeach, 2006a). The CIT framework recognizes macro-, meso-, and micro-level storytellers, who, in an ideal storytelling system, produce and reproduce conversations and narratives which create a sense of identity and belonging within a community (Ball-Rokeach et al., 2001; Kim & Ball-Rokeach, 2006a). These narratives may be positive or negative, they may be focused on the past, present, or future, and they may be disseminated via any mode or channel of communication (Kim & Ball-Rokeach, 2006b). Macro-level storytellers, in this context, might include national news-media and institutions at the state and federal level. At the meso- and micro-level, community storytellers such as local non-profits and community-based organizations (CBO), along with neighborhood and ethnic media sources, and individual residents, interact to mutually create and recreate narratives which give meaning and identity to a community and its inhabitants. The CIT perspective privileges the meso- and micro-level storytelling network (STN), but places high emphasis on the level of integration between all three levels of storytellers. It should be noted that this does not indicate an orientation toward an overall, consistent, master narrative, but one in which all meaningful communication and stories about a community and its inhabitants are present and accessible (Ball-Rokeach et al., 2001).

Storytelling and Belonging

Foundational CIT research found that strong communication infrastructures and communication ecologies are positively associated with community and neighborhood belonging (Ball-Rokeach et al., 2001; Kim & Ball-Rokeach, 2006a, Kim & Ball-Rokeach, 2006b). In CIT literature, belonging is defined as subjective and objective attachment in reference to how

individuals feel about their neighborhood, as well as what they do with their neighbors (Kim & Ball-Rokeach, 2006b). This is conceptually similar to this study's definition of perceived social connectedness, which refers an individual's thoughts and feelings of interpersonal closeness with the community at large. Contemporary CIT research has advanced the theory's connection between storytelling and belonging in relation to disaster communication (Kim & Kang, 2010; Spialek & Houston, 2019), multiethnic intergroup relations (Liu et al., 2018) and social media use (An & Mendiola-Smith, 2018; Choi et al., 2021). In their 2001 article, Ball-Rokeach et al. posited that intensity of participation with interpersonal storytelling, scope of connections to community organizations, and sense of belonging were all positively correlated. In that same study, residential tenure and homeownership were used as structural variables and were found to have indirect paths to belonging through connections to local media and community organizations. Although home ownership is obviously inapplicable to this study, established residential tenure (as a PEH in a particular community) and connections to community organizations (through receiving services such as shelter, food, etc.) could quite arguably position an individual as a potential storytelling agent within a homeless community.

Storytelling and Belonging for PEH

Because the CIT perspective conceptualizes the STN as a communicative interaction and bi-directional relationship among community and ethnic media, community-level organizations, and local residents, much of the storytelling component does not have a direct relation to PEH. This becomes especially true when one considers that PEH often have a long history of housing instability (Shinn et al., 1991), may lack strong, local social support (Calsyn & Winter, 2002), and often face diminished capacities for communication due to a myriad of biological and social hindrances (Nooe & Patterson, 2010). These issues quite likely inhibit the emergence of a

storytelling community among PEH. Contemporary research on homelessness, sense of community, and social connectedness indicates that marginalized groups are less likely to actively engage in community life (Townley et al., 2016), and this likely extends to communicative behavior. However, in a study focusing on PEH who were long-term shelter residents, Bell and Walsh (2015) found that PEH were more likely to acknowledge a sense of community with fellow residents and reported that interpersonal connections and shared experiences were key to fostering perceptions of belonging. In that same study, research participants reported fear and apprehension at the thought of rejoining society at large, outside the shelter, given the perceived discrimination and rejection they faced in their daily lives. Thus, it is quite possible that while active engagement with the community at large may be diminished, PEH may actively engage in storytelling behavior with others in similar circumstances when residing in group shelters or homeless encampments.

The CIT perspective is based on the normative view that humans will seek out social connections and utilize purposeful communication strategies to achieve goals and forge meaningful relationships. Contemporary CIT research involving marginalized groups has found that localized STNs offer social support to include information, emotional care, and instrumental assistance (Oktavianus & Lin, 2021). Extant literature has invariably linked social isolation to the condition of homelessness (Lafuente & Lane, 1995; Shinn et al., 1991; Winer et al., 2021). Therefore, the study examines elements of the communication action context and communication ecologies of PEH which may foster storytelling and social connectedness. This review now turns to the communication action context as the second component of CIT in which the built or social environment is seen as having the ability to promote or constrain communication.

Communication Action Context

The communication action context (CAC) is any piece of the built or social environment, including personal, economic, and technological dimensions, that enables or constrains communication (Broad et al., 2013; Matei et al., 2007). Elements of a CAC that may facilitate or inhibit communicative interaction include such factors as the safety of public areas, work conditions, linguistic diversity, and the availability of public transport (Wilkin et al., 2011). The CAC is conceptualized along a dimension of openness to closedness (Ball-Rokeach et al., 2001; Kim & Ball-Rokeach, 2006a). For example, a community which has a walkable, pedestrian-friendly infrastructure may possibly facilitate interpersonal interaction, which, in turn, would be considered an example of a more open element of the CAC. Conversely, a community that struggled with nighttime criminal activity may make the residents feel unsafe to be out and about during the evening hours and reduce likelihood for neighborly interaction. This fear could arguably be deemed an example of a more closed element of that community's CAC. What is demonstrated by these two hypothetical CAC conditions is that a community may have, simultaneously, multiple manifestations of more open or more closed dimensions of its CAC. Just as the CIT perspective conceives of a strong STN as conditional for belonging, CIT also conceptualizes the CAC as "a condition of local residents' participation in their own construction of an efficacious community" (Kim & Ball-Rokeach, 2006a, p. 185). The relationship between the CAC and the STN is dynamic, with a change in one affecting a change in the other (Ball-Rokeach et al., 2001). A CAC that facilitates a strong STN allows for open communicative relationships among community storytellers such as individual residents, community organizations, and local and ethnic media (Wilkin, 2010).

The Communication Action Context in Contemporary Research

Scholars have investigated how the built and social environment can facilitate or inhibit the access, flow, and quality of communication in a community (Anderson, 2020; Villanueva et al., 2016). In the last two decades, researchers have applied CIT and its conceptualization of the CAC to several social issues. In their 2007 work, Hayden and Ball-Rokeach explored the potential of community technology centers (CTC) as components of a broader community communication infrastructure and how they may be a part of addressing digital divides. Similarly, Katz et al.'s (2012) exploration on ethnic media as anchor institutions for broadband adoption, posited that broadband diffusion could strengthen a community's communication infrastructure and positively promote social inclusion. Moving beyond the built environment, socio-cultural elements of the CAC have also been found to have significant influence. In an extensive, multi-community study, Orellana et al. (2003) found that newly immigrated Latino families live in a CAC that makes it difficult to participate in civic life due to cultural differences and language barriers. In their 2021 work, Spialek et al. established associations between perceived discrimination stress, social trust, and individual disaster communication among Latino residents after Hurricane Harvey.

Working toward an intricate knowledge of a community's CAC has practical implications for researchers in the field as well because it may help reveal communication comfort zones and hotspots (Villanueva et al., 2016). Comfort zones refer to those businesses, organizations, or other community institutions to which community members feel connected. Communication hotspots are those positive, discursive spaces within communities where community members gather to engage in communicative interaction (Wilkin et al., 2011). Physical spaces such as these are instrumental in the CAC's ability to promote belonging. In a 2016 study utilizing participatory mapping and Geographic Information Systems (GIS), Townley

et al. examined the spatial and social environment of youth who were experiencing homelessness in Portland, OR in relation to sense of community, connectedness, and psychological well-being. A key finding in their investigation was that a statistically significant, positive relationship existed between number of activity spaces, sense of community, and psychological well-being. Placed in a CAC context, it could be expected that sense of community and social connectedness would be positively associated with the number of different places in which PEH may interact and participate in community behavior.

The Homeless Communication Action Context

Perceptions of belonging and motivation to engage in community life are increased when people are able to define their communities based on their own unique experiences (Fernández & Langhout, 2014; Parker, 2006; Townley, 2016). But for PEH, the CAC is often one in which communicative interaction and life in general is constrained by a number of obstacles. In their 2021 work examining homeless young adults and employment, Huffman et al. used the term *scaffolded city* to describe the way cities are designed to benefit the housed and employed, as well as create or inherently contain a number of built and discursive structures that become barriers for PEH to obtain and maintain gainful employment. For example, their interview participants noted that living without the affordances of a home meant that an individual does not have a place to cook food. Consequently, he or she would need to purchase meals, which means more money being spent on daily nutrition as opposed to being saved to escape homelessness. Unstable sleeping conditions were also cited in their interviews as detrimental to the ability to work. Having to sleep at or near the place of employment to overcome on-foot travel time increased the risk of being discovered and fired. Sleeping outside in public spaces also increased the risk of negative interaction with law enforcement. Other studies have demonstrated the ways

in which the built environment produces challenging logistics for travel (Murphy, 2019), how social contexts inhibit interaction (Tompsett et al., 2006), and how a myriad of individual biopsychological factors diminish one's ability to participate in communicative relationships with others in the social environment (Nooe & Patterson, 2010). The following section identifies and discusses the individual elements of the CAC specifically relevant to homelessness. Because the experiences of homelessness are not homogeneous (Townley et al., 2016), the following elements of the CAC for PEH are drawn from broad, ecological studies of homelessness that identify those physical and social features of the environment which extant literature indicates may have the most significant impact on communicative interactions for PEH.

The Physical Environment. It is quite possible that, for PEH, the built environment has a greater ability to affect their capacity to live life, to build relationships, and to communicate and participate with the community at large than for those community members who are housed. For PEH, elements of the built environment that have the ability to facilitate or inhibit communicative behaviors include such factors as the walkable and drivable infrastructure, public transportation, the availability of housing and shelter services, and locations with accessible information and communication technology (ICT). The following subsections utilize extant literature on homelessness to conceptualize the way the physical environment may play a role in the daily communicative lives of PEH

Sidewalks and Roadways. Sidewalks have been identified as places of social negotiation and conflict for PEH (Ehrenfeucht & Loukaitou-Sideris, 2011). In their 2018 article, Darrah-Okike et al. use the term *sociospatial control policies* to describe the efforts of cities to target homeless residents by restricting behaviors such as sitting and lying, storing personal possessions, or limiting time of occupancy on sidewalks or other street-side locations. Their

research participants reported feelings of dehumanization, fear, anxiety, and despair and the authors argued that enforcement actions such as arrests, issuance of citations, and forced removals of PEH from those public spaces led to continued and increased social exclusion. From a CIT perspective, if PEH feel unwelcome in public spaces, it is likely that their willingness to engage in community storytelling or to otherwise engage in meaningful communicative interactions will be significantly diminished.

Moving from the sidewalks to the roads, researchers have demonstrated that for PEH who are without a personal vehicle, limited mobility may adversely affect access to education and employment opportunities (Nostikasari, 2015), healthcare (Preston et al., 2016), and contribute to increased social exclusion (Hui & Habib, 2017; Lucas & Jones, 2012; Murphy, 2019). In a 2017 study on the geospatial behavior of PEH, North et al. found that while the travel destinations and activities of their participants varied considerably, the primary mode of transportation was either on foot or on bus. Because time management tends to be a zero-sum issue, having to spend more time accomplishing goal related travel will arguably result in less time spent engaging in meaningful communicative interactions. This should not, of course, diminish the importance of free-to-rider public transportation services as the ability to move about a city is often an issue that directly effects a number of quality-of-life issues for PEH (Huffman et al., 2021). From a CIT perspective, the availability of free-to-rider public transportation is likely a significant element of the built environment that facilitates communication access, storytelling, social connectedness, and inclusion. With that assumption, the following research question is posed.

RQ1: Does a significant difference exist in feelings of perceived social connectedness between PEH who use free-to-rider public transit and PEH who do not?

Housing. There is a robust body of research documenting the differences in a variety of outcomes for PEH who are sheltered versus those who are unsheltered. Sheltered living situations include conventional homeless shelters and supportive housing whereas unsheltered living conditions include residing on the streets, parks, in vehicles, or any other place not meant for human habitation (Anderson, 2021; Llerena et al., 2018). Unsheltered PEH experience greater susceptibility to a variety of adverse physical and behavioral health outcomes and are less likely to have frequent interaction with the larger community, leading to greater social isolation, as compared to PEH who are residing in shelters (Anderson, 2021; Nyamathi et al., 2000). Conversely, PEH residing in shelters often report that the shelter is a place where they find belonging and a sense of community and connectedness. In their 2015 study involving young men at a homeless shelter in Calgary, Alberta, Bell and Walsh noted that the shelter was a place of physical, emotional, and material support for the residents. The study participants spoke of the shelter as a place where they cultivated interpersonal relationships, gained a renewed sense of meaning in life, had an opportunity to share experiences, and had a “sense of place and source of affirmation in the world” (p. 1986). Within the CIT perspective, a shelter could be conceptualized as both a communication hotspot and comfort zone and CIT research has found that focusing on discursive spaces such as these is key to reaching hard-to-reach populations (Wilkin et al., 2011). It should be noted that studies of sheltered homeless living conditions have also found that shelter environments still come with a measure of stress and fear about victimization and vulnerability, particularly for those residents struggling with mental health issues, and for women and racial minorities (Odoh et al., 2020). Therefore, it should not be automatically assumed that a shelter is always an open and positive discursive space. However, from a CIT perspective and like the availability of free-to-rider public transportation, a CAC in

which PEH have access to safe and monitored shelters is one that arguably offers greater chance of community storytelling and fostering social connectedness. With this assumption, the following hypothesis is posited:

H1: PEH residing in shelters or temporary housing will report significantly higher perceived social connectedness than those living in unsheltered conditions.

Information and Communication Technology Access. It is well established that the availability of information and communication technology (ICT) to people who are marginalized is a vital resource which allows them to maintain meaningful interpersonal relationships (Guadagno et al., 2013; Vázquez et al., 2015) and serves as a utility for information seeking and employment (Kelleher, 2013). Although cell phone use amongst PEH is increasing, cellphone ownership among PEH is still significantly lower when compared to the general public (Reitzes et al., 2017). As a result, providing public access to community technology centers has been one of many approaches to closing the digital divide for PEH in the last two decades (Hendry et al., 2011). In a 2013 review on access and use of ICT for PEH, McInnes et al. found that community locations that provided free computer and internet access were seen as important to their research participants. Public libraries, in particular, are important community institutions for PEH. Libraries are often referred to as anchor institutions, which means that they are community-rooted organizations (Mersand et al., 2019) that tend to serve as communication hotspots with staying power (Alemanne et al., 2011). However, much like other public spaces in a community, PEH may feel unwelcome due to a number of social issues and constraints (Kelleher, 2013). From a CIT perspective, a public library may be an important part of the CAC for PEH. Therefore, the following research question is posed:

RQ2: Is the use of the public library a primary source for utilizing ICT or other meaningful communicative interactions for PEH?

Additionally, because of the established importance and utility of ICT access for PEH, the following hypothesis is posited:

H2: PEH who own a smartphone will report significantly higher perceived social connectedness than PEH without a smartphone.

To continue the examination of the elements of the CAC that are most relevant to PEH, this review now turns to the social environment.

The Social Environment. There is a social reality for PEH that is unique to the extent that they must live in and negotiate their way in a world that is often not designed to benefit them. PEH are often belittled or depreciated in face-to-face interactions, experience a loss of social support, and must cope with negative social stigma (Meanwell, 2013). They also operate in a society in which pop-culture and media often portray them as dirty, dangerous, or otherwise less than human (Farrugia, 2011). However, consistent with CIT's foundational, optimistic assumption that people do not suffer asocial conditions passively, PEH employ a variety of communication techniques to manage how noticeable they are, create organizational networks, and "reshape the opportunities and constraints around them" (Huffman et al., 2021, p. 149). It is important to remember that the CIT perspective is an ecological one, and social ecological examinations of homelessness emphasize that homelessness results from an interaction of risk factors, wherein individual circumstances and conditions intermingle with socioeconomic and environmental structures (Nooe & Patterson, 2010). The implication here is that the social environment for PEH is a dynamic congruence of influences that either constrain or facilitate communicative behavior. The following subsections identify and discuss those elements of the

social environment which may affect the ability of PEH to participate in their surrounding community.

Discrimination and Perceived Discrimination. There is a long history of institutional and individual discrimination against PEH in the United States and other countries (Gattis & Larson, 2016; Mejia-Lancheros et al., 2020; Wrighting et al., 2019). In studies examining public opinions on homelessness, the majority of respondents attributed individual, *at fault* characteristics to causes of homelessness; these include drug and alcohol abuse, criminal tendencies, and mental/behavioral health problems (Agans et al., 2011; Tompsett, et al., 2006). In a 2014 study on perceived discrimination among homeless adults with mental illness in healthcare settings, Skosireva et al. found that perceived discrimination due to homelessness/poverty was associated with increased likeliness of perceiving other types of discrimination as well. This is consistent with a 2021 study which found that intersectional discrimination, intersecting vulnerabilities, and social stigmatization among PEH could lead to “a cumulative effect that could be highly detrimental to their social inclusion processes, leading to high levels of chronification of homelessness” (Vázquez et al., p. 618). Perceived discrimination may also reduce the likelihood that an individual would seek help for their situation, and this is especially relevant when it comes to seeking emergency help (Thornicroft et al., 2007). Additionally, across all demographics of PEH, feelings of distrust and fear of the police tends to be prevalent (Zakrison et al., 2014). Because CIT envisions the interplay between the communicative environment and the individual, and recognizes social influences on communication behavior, the CIT perspective would assume that a CAC in which individuals feel unwanted, unsafe, or discriminated against is one in which communicative behavior will be diminished. Given this, the following hypothesis is posited:

H3: Perceived discrimination will be negatively associated with perceived social connectedness.

Homeless research has also established that some populations within the homeless community are more likely to experience social exclusion and discrimination than others. Two subgroups that are particularly susceptible are members of the LGBTIQ community and racial minorities (Bower et al., 2013). For PEH who are also members of the LGBTIQ community, there are various social barriers to developing social connections and participating in open communicative behaviors. Some of these barriers may include fear of discrimination from homeless peers (Oakley & Bletsas, 2013) and shelter environments, especially those with religious structure and staff that are not perceived as accepting of LGBTIQ individuals (Coolhart & Brown, 2017). PEH who are also racial minorities must simultaneously negotiate the stresses of homelessness as well as sociocultural discrimination because of their race (Gattis & Larson, 2016). It can be expected that when individuals do not feel free to communicate safely and openly with those in their environment, or feel discriminated against because of their sexuality or race, social connectedness may be diminished. With this expectation, the following hypotheses are posited:

H4a: PEH who identify as LGBTIQ will report higher levels of perceived discrimination than those who do not identify as LGBTIQ.

H4b: PEH who identify as LGBTIQ will have lower levels of perceived social connectedness than those who do not identify as LGBTIQ

H4c: PEH who identify as a racial minority will report higher levels of perceived discrimination than those who do not identify as a racial minority.

H4d: PEH who identify as a racial minority will have lower levels of perceived social

connectedness than those who do not identify as a racial minority.

This review now turns to the communication ecology, in which the aggregate of an individual's communication connections and resources are leveraged to achieve goals.

Communication Ecologies

Within their lived environment, individuals are “situated within an ecology of communication resources—made up of a variety of mediated, organizational, and interpersonal connections and [...] they draw from resources within these networks of communication to construct knowledge and to achieve goals” (Broad et al., 2013, p. 328). Simply stated, a communication ecology is all the connections that an individual has among people and organizations, and these connections are used to achieve various goals. This not only includes contacts and relationships, but how those resources are accessed as well. This assertion is consistent with studies utilizing CIT, which have found that communication ecologies are shaped by social and cultural conditions of the CAC and tend to look different and be structured uniquely across various groups and demographics (Broad et al., 2013, Spialek et al., 2020). Additionally, the CIT perspective places an emphasis on *goal-oriented* communicative relationships, and an individual's communication ecology may change as certain needs are met, and other needs develop (Wilkin et al., 2007). For PEH, it is likely that those resources which meet the most pressing needs for day-to-day survival and escaping homelessness will be the most utilized within the communication ecology (Wong & Piliavin, 2001). However, within this consideration, one should not forget that higher-level social and self-worth needs are also an important part of daily life for PEH (Patterson & Tweed, 2009).

Applications for Homeless Research

One of the advantages of a communication ecology approach is the ability to identify the various ways a target demographic seeks out and shares information and with whom do they share communicative relationships (Wilkin et al., 2007). This advantage is consistent with this study's primary aim of developing an understanding of the communication ecologies of PEH and examining the different ways in which individual circumstances influence one's communication goals and ability to develop meaningful communicative relationships. In their 2007 work, Wilkin et al. used the CIT framework and a communication ecology perspective to create a communication map of 11 geo-ethnic populations. Their goal was to generate a guide for practitioners in those communities for how to best communicate with their populations by examining the various ways these populations sought information through such mediums as television/cable TV/satellite TV, radios, newspapers, organizations, etc. The researchers' primary assumption was that, generally, people use "more than one communication option to achieve any particular goal; that is, they operate in context of the best choices available" (p. 2). Extant literature on homeless information seeking and sharing indicates that information needs are addressed through a variety of sources which include smartphones and public commuters (VonHoltz et al., 2015), service providers (Markwei, 2013), and peers or family members (Stennett et al., 2012). In a study applying a qualitative approach to homeless social network analysis (Hersberger, 2003), it was found that while overall goals for PEH were oriented toward improving one's daily living, specific goals varied depending on the individual and their circumstances. They also found that the amount of help that individuals anticipated receiving from a source (either in information or material support) was positively associated with the amount of their social investment with that source

Because perceived social connectedness is a primary focus for this study, understanding how communicative relationships within the communication ecology may influence perceived social connectedness is important. Contemporary communication scholarship has established a connection between communication frequency and social connectedness (Riedl et al., 2013).

Given this, the following hypothesis is posited:

H5: PEH who communicate more frequently within the communication ecology will report higher levels of perceived social connectedness.

Additionally, it may be useful to determine if certain communicative relationships within the homeless communication ecology have more or less influence on perceived social connectedness. Thus, the following research question is posed:

RQ3: What communication resources are associated with higher levels of perceived social connectedness?

Chapter Three: Methodology

The primary focus of this study was to examine how elements of the communication action context (CAC) and communication ecologies of people experiencing homelessness (PEH) may influence social connectedness. To thoroughly explore the relationship between social and structural variables and connectedness, and to answer research questions about goal-oriented communication behaviors, I employed quantitative methods to investigate instances of statistical significance. In the following sections, I describe the sample, data collection process, measures, and data analysis procedure.

Participants

I surveyed PEH in Ft. Smith, Arkansas, Fayetteville, Arkansas, and Joplin, Missouri. 220 individuals completed the survey but the final sample size was 166 after 54 individuals failed to fully and/or properly complete the survey by either leaving entire sections unfinished or straight lining the items to finish quickly. A majority of the sample were White ($n=135$, 81.3%), male ($n=106$, 63.9%), and unemployed ($n=137$, 82.5%). Participant ages ranged from 18 years to 76 years ($M=44.24$, $SD=12.26$). Participant living conditions included homeless shelters ($n=89$, 53.6%), living with friends or family ($n=12$, 7.2%), and unsheltered conditions such as tents and motor vehicles ($n=65$, 39.2%). A majority ($n=141$, 84.9%) also reported that they suffered from some sort of mental health condition/s.

Procedures

This study received IRB approval prior to collecting data. Data collection took place for approximately five weeks, from July 2022 to September 2022. In the months leading up to data collection, I contacted homeless organizations in the NWA and Joplin Areas. Partnering with on-the-ground practitioners was a vital element of participant recruitment and this study could not

have been successful without the cooperation of non-profit, community-based organizations (CBO) and their administrations. In consultation with practitioners and administrators at participating organizations, I decided to utilize paper surveys which I constructed using Microsoft Office. The decision to use paper surveys addressed the anticipated issue of computer literacy, as well as the fact that some of the data collection would be conducted outdoors. Participants were provided with implied consent forms as well, which they checked *I agree* before being given the survey. Participants were compensated with \$5.00 upon returning the completed survey. After participants completed the paper surveys, I manually entered the data into the analysis software program, IBM's Statistical Package for Social Sciences (SPSS).

In addition to those PEH who were recruited at participating shelters, I also recruited individuals on sidewalks, parks, and in parking lots. This was, in part, an attempt to include data from individuals who may not use shelter services. The process was similar to that in the shelters and day centers. I would make contact and explain who I was and what the survey was about. If they agreed to participate, they were provided with informed consent forms, then given the survey, and compensated with \$5.00 after completing the survey.

Measures

Communication Action Context Variables

Housing status (sheltered or unsheltered) was operationalized through the following living conditions: (1=*Homeless shelter*, 2=*Housing-first community*, 3=*Group home*, 4=*Unsheltered (e.g., car, tent, etc.)*, 5=*Living with friends*). Items 1, 2, 3, and 5 were recoded to 1=*Sheltered* and item 4 was recoded into 2=*Unsheltered*. Smartphone ownership was entered as (1=*yes*, 2=*no*). Free-to-rider transportation use was entered as (1=*not available in my community*, 2=*available but I don't use it*, 3=*available and I use it*). Public library use was entered in as

(1=*never*, 2=*a few times a year*, 3=*a few times a month*, 4=*at least once a week*, 5=*almost every day*).

Perceived Discrimination

Perceived discrimination ($M=2.44$, $SD=1.02$, $\alpha=.89$) was assessed using the *Everyday Discrimination Scale* (Williams et al., 1997). This nine-item index presents a series of discrimination experiences that individuals may face in their daily lives. Participants indicated how often they experience these events from (1) *never* to (5) *almost every day*. Sample items include: “You are treated with less respect than other people are;” “People act as if they think you are not smart;” and “You are threatened or harassed.” It should be noted that this scale was originally designed to measure perceived discrimination due to race or ethnicity. However, as Harnois (2022) noted, researchers have regularly used the scale to examine discrimination based on gender, age, and generalized discrimination among a broad population as well.

Perceived Social Connectedness

Perceived Social connectedness ($M=3.09$, $SD=.83$, $\alpha=.89$) was measured using the *Social Connectedness Scale-Revised* (Lee et al., 2001). This 20-item scale presents participants with 10 negatively worded statements and 10 positively worded statements to which they respond with options ranging from (1) *Strongly disagree* to (5) *Strongly agree*. Sample items include: “I don’t feel related to most people;” “I feel like an outsider;” “I am able to connect with other people;” and “I find myself actively involved in people’s lives.”

Communication Frequency

Communication frequency ($M=3.1$, $SD=1.11$, $\alpha=.43$) was measured using five items which asked participants to indicate how often they communicate with (1) family, (2) friends and peers, (3) service providers and shelter staff, (4) case managers, and (5) employers. Responses

were entered as 1=*never*, 2=*a few times a year*, 3=*a few times a month*, 4=*at least once a week*, 5=*almost every day*. I divided the communication frequency scale into two subscales, one pertaining to micro-level communication (communication frequency among family and friends) and one pertaining to meso-level communication (communication frequency among shelter staff, case workers, and employers). There was sufficient internal reliability for both micro- ($r=.201$, $p<.01$) and meso-level ($r=.183$, $p<.05$) communication.

Demographic Variables

Sex, age, employment status, race, and sexual orientation were included as demographic variables. Age was entered as a continuous level variable. Sex was entered as (1=*male*, 2=*female*, 3=*non-binary/non-gender conforming*, 4=*prefer not to answer*), and employment was entered as (1=*employed*, 2=*unemployed*). Race was operationalized through the following options: (1=*White*, 2=*Black or African American*, 3=*Hispanic/Latino*, 4=*Native American*, 5=*Asian*, 6=*Hawaiian or Other Pacific Islander*, 7=*other*). Items 2, 3, 4, 5, 6, and 7 were recoded under 1=*non-white*. Item 1 was recoded under 2=*White*. Participants indicated their sexual orientation through the following options: 1=*Heterosexual*, 2=*Gay/Lesbian*, 3=*Bisexual/Pansexual*, and 4=*prefer not to answer*. During data entry, these responses were recoded into 1 = *LGBTIQ*, 2=*non-LGBTIQ*.

Data Analysis

All data analysis was accomplished using the IBM Statistical Package for the Social Sciences (SPSS). To answer RQ1, a one-way analysis of variance (ANOVA) was employed to examine differences in levels of perceived social connectedness between those who live in a community where free-to-rider public transportation is unavailable, those who live in a community where it is available but do not use it, and those who live in a community where it is

available and do use it. To answer RQ2, simple descriptive statistics were employed to examine frequency of use of the public library for utilizing ICT.

To test H1, an independent sample *t*-test was employed to examine the levels of perceived social connectedness between those PEH who are sheltered versus those who are unsheltered. Similarly, for H2, an independent samples *t*-test was employed to examine the levels of perceived social connectedness between those PEH who own a smartphone versus those who do not. I also used an independent samples *t*-test for H4a and c to test for differences in perceived discrimination stress based on race (non-White and White) and sexual orientation (non-LGBTIQ and LGBTIQ).

To test H3 and H4b and d, a hierarchical multiple regression was run to examine the influence of perceived discrimination, sexual orientation, and race on perceived social connectedness. Control variables were entered in Block One and perceived discrimination, sexual orientation, and race were entered in Block Two. Similarly, to answer H5, I calculated a hierarchical multiple regression to examine the influence of overall communication frequency within the communication ecology. Control variables were entered in Block One and communication frequency was entered into Block Two. Finally, to answer RQ3, I calculated a hierarchical multiple regression to examine which communication relationships may have greater influence on perceived social connectedness. Control variables were entered in Block One, communication frequency with family and friends and communication frequency with case managers and shelter staff were entered in Block Two.

Chapter Four: Results

In this study, I examined the influence of social and structural variables on the perceived social connectedness of people experiencing homelessness (PEH) in northwest Arkansas (NWA) and Joplin, Missouri areas. I utilized descriptive statistics, *t*-test, ANOVAs, and hierarchical regressions to analyze the data. In the following paragraphs, I report the findings by addressing the research questions first, followed by the hypotheses.

RQ1: Does a significant difference exist in feelings of perceived social connectedness between PEH who use free-to-rider public transit and PEH who do not?

I employed a one-way ANOVA to assess the effect of the availability and use of free-to-rider public transit on perceived social connectedness. The test indicated no significant difference ($F=.499$, $df(2, 163)$, $p=.530$, $eta^2=.006$) in the means among those PEH who reported that free-to-rider transportation was not available in their community ($M=3.04$, $SD=.81$), those who reported free-to-rider transportation was available but did not use the service ($M=3.01$, $SD=.79$), and those who did reported using free-to-rider transportation ($M=3.15$, $SD=.83$).

RQ2: Is the use of the public library a primary source for utilizing information and communication technology (ICT) or other meaningful communicative interactions for PEH?

I analyzed descriptive statistics to examine whether the library was an important element of the communication ecologies of PEH. Participants were asked how often they visited the public library. Their responses included: *never* (45.2%, $n=75$), *a few times a year* (36.1%, $n=60$), *a few times a month* (9.6%, $n=16$), *at least once a week* (4.8%, $n=8$), and *almost every day* (4.2%, $n=7$.) Similarly, I employed descriptive statistics to examine whether public library computers were a significant source for information seeking or sharing among PEH. Participants were asked

how often. They used public library computers and their responses included: *never* (60.2%, $n=100$), *a few times a year* (27.7%, $n=46$), *a few times a month* (6.6% $n=11$), *at least once a week* (3.6%, $n = 6$), and *almost every day* (1.8%, $n=3$). Given that more than four-fifths of participants indicated that they never or rarely (a) visited the public library (81.3%, $n=135$) and (b) accessed public library computers, (87.9%, $n=146$), descriptive statistics revealed that public libraries are not a primary source for utilizing ICT or other meaningful communicative interactions for PEH.

H1: PEH residing in shelters or temporary housing will report significantly higher perceived social connectedness than those living in unsheltered conditions.

I employed an independent samples *t*-test to investigate whether differences exist in levels of perceived social connectedness based on living condition. H1 was not supported. A significant difference did not exist in perceived social connectedness between those living in sheltered conditions and those living in unsheltered conditions ($t(164)=.89$, $p=.396$).

H2: PEH who own a smartphone will report significantly higher perceived social connectedness than PEH without a smartphone.

I employed an independent samples *t*-test to examine the effects of smartphone ownership on perceived social connectedness. H2 was not supported. A significant difference did not exist in perceived social connectedness between PEH who owned a smartphone ($n=112$) and those who did not ($n=54$) ($t(164)=.04$, $p=.963$).

H3, H4b, and H4d: Perceived Discrimination, Sexual Orientation, Race, and Perceived Social Connectedness.

I performed a hierarchical multiple regression analysis between independent variables (perceived discrimination, sexual orientation, and race) and perceived social connectedness. Age,

sex, and employment were entered in Block One. Perceived discrimination, sexual orientation, and race were entered in Block Two. The overall model was significant ($F=11.25, p < .001$). Sex was the only control variable in Block One significantly associated with perceived social connectedness ($b^*=.32, p < .001$). Individuals who identified as male ($M=3.38, SD=.75$) reported significantly higher levels ($p < .001$) of perceived discrimination than those who identified as female ($M=2.91, SD=.82$). R^2 for the model was .30 and adjusted R^2 was .27. See Table 1 for the complete results.

H3 predicted that perceived discrimination was negatively associated with perceived social connectedness. H3 was supported. The more that a PEH perceived they were being discriminated against, the less likely they felt connected to others ($b^* = -.44, p < .001$). H4b predicted that individuals who identify as LGBTIQ would report lower levels of perceived social connectedness compared to individuals who did not identify as LGBTIQ. H4b was not supported ($b^* = -.02, p = .836$). H4d posited that non-White PEH would report lower levels of perceived social connectedness than White PEH. H4d was not supported ($b^* = .05, p = .463$).

H4a: PEH who identify as LGBTIQ will report higher levels of perceived discrimination than those who do not identify as LGBTIQ.

I employed an independent samples t -test to examine the role of sexual orientation on perceived discrimination. H4a was not supported. The t -test revealed no significant difference $t(164) = -.60, p = .555$ between those who identified as LGBTIQ ($M=2.33, SD=1.06$) and those who did not identify as LGBTIQ ($M=2.46, SD=1.01$).

H4c: PEH who identify as a racial minority will report higher levels of perceived discrimination than those who do not identify as a racial minority.

I employed an independent samples *t*-test to examine the role of race on perceived discrimination. H4c was unsupported. The *t*-test revealed that there was a significant difference $t(164) = -2.23, p < .05$ between individuals who identified as a racial minority ($M=2.08, SD=.99$) and those who did not ($M=2.52, SD=1.01$). However, the results were the exact opposite of the hypothesis. People who were White reported more perceived discrimination than those who were not White.

H5: PEH who communicate more frequently within the communication ecology will report higher levels of perceived social connectedness.

I performed a hierarchical regression to examine the relationship between PEH's frequency of communication with family, friends, and shelter staff and employees and perceived social connectedness. Age, sex, and employment were entered as control variables in Block One. An overall communication frequency score was entered in Block Two. The overall model was significant ($F=8.95, p < .001$). R^2 for the model was .18 and adjusted R^2 was .16. See Table 1 for complete regression results.

H5 was supported. The more that PEH communicated within their communication ecology, the more likely they were to report higher levels of perceived social connectedness ($b^* = .28, p < .001$).

RQ3: What communication resources are associated with higher levels of perceived social connectedness?

To answer RQ3 and determine what communication resources within the communication ecology specifically contributed to perceived social connectedness, I calculated another hierarchical regression where Block Two included (a) communication frequency among family and friends and (b) communication among staff and employers at shelters. The overall model

was significant ($F=8.77, p < .001$). R^2 for the model was .22 and adjusted R^2 was .19. See Table 1 for complete regression results. From a communication ecology perspective (Ball-Rokeach et al., 2001), communication with family and friends represented micro-level resources, whereas shelter staff and employees represented organizations and were considered meso-level communication resources. Communication frequency with family and friends ($b^*=.31, p < .001$) significantly predicted perceived social connectedness whereas communication frequency with shelter staff, case managers, and employers ($b^*=.08, p = .273$) did not. See table 1 for complete regression results.

Chapter Five: Discussion

This study examined the ways in which the built and social environments may influence the perceived social connectedness for people experiencing homelessness. By applying the ecological perspective of communication infrastructure theory (CIT, Ball-Rokeach, 2001) and quantitative methodology, this study investigated a number of hypotheses and research questions developed from extant literature on CIT and homelessness. This chapter provides a discussion on the various implications and limitations of this research. In the following sections, I first discuss the theoretical and practical implications. I then conclude this chapter by discussing the limitations and exploring opportunities for further research.

Theoretical Implications

Theoretically, this study provides four implications. The study: (a) applies CIT to examine a hard-to-reach population previously unexamined in CIT studies, (b) affirms a negative relationship between perceived discrimination and perceived social connectedness but contradicts assumptions about the influence of race and sexual orientation on perceived discrimination and perceived social connectedness, (c) provides empirical support for the role of communication frequency on perceived social connectedness, and (d) provides insight into the influence of the built environment and information and communication technology (ICT) on perceived social connectedness for PEH.

Application of Communication Infrastructure Theory

This study advances CIT by focusing on a hard-to-reach population previously unexamined in CIT studies. Although researchers have applied CIT to examine the communicative behavior of other marginalized communities such as rural and migrant workers (Oktavianus & Lin, 2021; Wang et al., 2021), and African American and Latino neighborhoods

(Spialek et al., 2021; Wenzel, 2019), this study extends CIT's ecological perspective to examine interactive influences of the CAC and communication ecologies of PEH.

In their foundational study which resulted in the proposed communication infrastructure model, Ball-Rokeach et al. (2001) hypothesized that interpersonal discourse would have the strongest influence on belonging. This hypothesis was supported across all demographics in their study and the current study's results are consistent with that key finding. From its conception, CIT has envisioned an integrated storytelling network in which individuals, community-level organizations, and local/ethnic media participate in meaningful communication behaviors to create a community identity and promote a sense of belonging. It is important to note that this conceptualization of the storytelling network has been largely *place-based* in fundamental CIT studies over the last two decades (see Ball-Rokeach et al., 2001; Kim & Ball-Rokeach, 2006a; Broad et al., 2014; Liu, 2018; Spialek & Houston, 2019). CIT has traditionally conceptualized belonging as an *attachment* to a neighborhood (Kim & Ball-Rokeach, 2006a). The results in this study extend that conceptualization by applying the principle of a storytelling network to a demographic without a defined neighborhood or attachment. Therefore, it is entirely possible that PEH form community identities through meaningful communicative interaction, even while their participation in community-at-large is disrupted or inhibited due to their reduced socioeconomic circumstance. Thus, one could argue that the principles of community and belonging used to examine social phenomena among the housed population are likely extendable to PEH as well. It may follow then, that examinations of how PEH perceive their cities, their shelters or encampments, and the places they are either welcomed or shunned throughout a community may reveal characteristics of place which encourage participation and foster belonging and social connectedness.

Perceived Discrimination and Social Connectedness

A key finding in this study is that perceived discrimination predicts perceived social connectedness. Individuals who reported more perceived discrimination in their daily lives were less likely to feel connected to others. This study extends previous research focusing on the relationship between these variables (see Bower et al., 2018; Brance et al., 2022; Sun et al., 2021; Yoon et al., 2012) by examining the direct relationship between discrimination and connectedness and incorporating the broad communication action context of a homeless population. The two scales used in this examination, the Everyday Discrimination Scale (Williams et al., 1997) and the Social Connectedness Scale-Revised (Lee et al., 2001), are generalizable to the extent that the items within these scales are not restricted to a specific demographic, setting, or time. Thus, from an ecological perspective, and consistent with foundational CIT assumptions, this study highlights the role of the lived environment's ability to influence behaviors and perceptions of social reality.

The Influence of Race and Sexual Orientation. This study hypothesized that PEH who identified as a racial minority or as a member of the LGBTIQ community would perceive higher levels of discrimination and lower levels of perceived social connectedness. These hypotheses were unsupported. In fact, the regression analysis revealed that White individuals, more particularly, White males, actually reported greater levels of perceived discrimination than racial minorities. Outside of that, there were no instances of statistically significant differences for perceived discrimination or perceived social connectedness across racial or sexual orientation lines. These results run counter to fundamental assumptions and findings in prior homeless research (see Bower et al., 2018; Coolhart & Brown, 2017; Oakley & Bletsas, 2013; Wrighting et al., 2019) which indicates that PEH who are racial and sexual minorities are likely to

experience increased discrimination stress. These results also contradict key assumptions of CIT which posit biological and social characteristics as predictors which influence the social aspect of the CAC in relation to building a sense of belonging (Ball-Rokeach et al., 2001; Kim & Ball-Rokeach, 2006b; Spialek & Houston, 2019).

One potential explanation for non-significant findings pertaining to race, sexual orientation, and perceived discrimination, is the small samples for race and sexual minorities. For instance, less than 17% indicated that they identified as a member of the LGBTIQ community and less than 18% categorized themselves as a racial minority. Thus, there may have been insufficient statistical power to determine whether differences in perceived discrimination stress existed across groups. Additionally, the survey items measuring discrimination did not prompt participants to consider the reasons for being discriminated against. Experiences of discrimination tend to be intersectional (Vázquez et al., 2021) and given the generalized nature of the survey items, it is possible that including items that asked specifically about discrimination based on race or sexual orientation may have provided more insight.

Communication Frequency and Social Connectedness

Another key finding is that frequency of communication within the communication ecology is significantly associated with perceived social connectedness. More specifically, the results indicate that it is greater communication frequency with family and friends, but not with service providers, staff, and employers that leads to an increased sense of connectedness. It is important to note that the survey items dealing with communication frequency were generalized and unrestricted to any modality or quality. This is an important distinction to make because many of the contemporary studies that include communication frequency in their examinations of communicative behavior and social connectedness are tied to communication device,

platform, timing, or the social setting in which the device is used. For example, in their 2013 examination of social connectedness and online social networks, Riedl et al. found that usage frequency on Twitter had a direct and positive effect on social connectedness. However, in a 2019 study exploring the efficacy of digital technology in enhancing social connectedness among older adults, Barbosa et al. noted that communication frequency does not necessarily correlate with increased quality of the communicative relationship or sense of connectedness. Similarly, in a study of adult use of digital communication during the early months of Covid-19, Nguyen et al. (2022) found that frequency of digital communication was related to lower social connectedness. These cases illustrate that the relationship between communication frequency and social connectedness is highly context dependent. In the context of this study, the results are consistent with positions forwarded by Barbosa et al. (2019) who note that, when it comes to perceived social connectedness, relationship quality matters. These results also contradict assumptions about homeless shelters, which present these spaces as positive, discursive environments that foster supportive relationships (e.g., Bell & Walsh, 2015). Instead, the fact that communicative relationships with shelter staff did not influence perceived social connectedness may uphold studies that indicate that shelter experiences vary greatly among PEH. As Johnsen et al. (2005) note, these spaces may be a place of care and comfort for some and a place of stress and fear for others.

These results tie in well with CIT's concept of storytelling and belonging. From its genesis, CIT has emphasized an integrated STN, in which all levels of community storytellers are actively present and participating (Ball-Rokeach et al., 2001). However, PEH are inherently disconnected from community processes and so this examination of the homeless CAC and communication ecology focuses on micro- and meso-level storytellers. In the context of this

study, family and friends are micro-level storytellers. Service providers and shelter staff, as members of community-level organizations, could arguably be seen as elements of the meso-level network. This conceptualization is consistent with CIT research which posits micro-level storytellers as the most influential level when it comes to creating belonging (Kim & Ball-Rokeach, 2006b). It should be noted, however, that PEH tend to invest most heavily in relationships that render the most help (Hersberger, 2003). Additionally, service providers who provide the greatest number of resources and support may be seen as close ties comparable to family and friends (Hersberger, 2003). Thus, it is entirely possible that PEH in this study communicate most frequently with family and friends who provide support and resources, and moreover, it is also possible that certain shelter staff may be classified as a friend or even family, depending on an individual's impression of the relationship. This becomes especially true when it comes to those PEH without traditional family ties, or those whose family have disowned them. Given the potential overlap in who may be considered family or friends, future research will want to consider more clearly defining the different micro- and meso-level storytellers embedded within PEH ecologies.

The Built Environment and Information and Communication Technology (ICT)

This study hypothesized that those PEH residing in homeless shelters would report greater perceived social connectedness than those who were unsheltered. The results indicated no significant difference in levels of perceived social connectedness between sheltered and unsheltered PEH. This study also hypothesized that PEH who owned a smartphone would report greater perceived social connectedness than those who did not. That hypothesis was also unsupported. This study examined whether or not the availability and use of public transportation would influence perceived social connectedness; it did not. The study also examined frequency

of use of the public library and found that for the majority of participants, the library was not a significant source for utilizing ICT or other meaningful communicative interaction.

The fact that these structural variables had no influence on perceived social connectedness whereas generalized perceptions of discrimination and micro-level communication with close ties such as family and friends did, suggests that, in the context of this study, communicative interaction is a much more meaningful influence on a homeless person's sense of belonging and connectedness than the physical environment they live in. This is a key theoretical implication as it contradicts some basic assumptions of CIT. A CIT perspective would assume that the built environment, specifically discursive spaces such as communication hotspots and comfort zones, would be an important influence on social connectedness and play a critical role in the storytelling process (Villanueva et al., 2016).

So, in the context of this study, perhaps places like shelters, the public library, and busses/bus stops are not key structural elements where communicative interaction is taking place. This idea aligns with Tsai et al.'s 2012 examination of supportive housing programs. They found that while housing initiatives for PEH were effective in assisting program participants in getting shelter, there was no evidence that these programs improved the condition of social isolation. This is not to diminish the theoretical importance of spaces such as these from a research standpoint. In their 2011 study on using CIT to reach hard-to-reach populations, Wilkin et al. note that identifying spaces that facilitate interaction within the STN are important for accessing those harder-to-reach population. Thus, more work is needed to better identify discursive spaces for PEH.

Practical Implications

Practically, this study provides a number of implications for shelter staff, community development professionals, and local government officials. First, the findings related to perceived discrimination would be an important consideration for city officials working to create answers for their community's problems related to homelessness. Second, shelter staff and other on-the-ground professionals might benefit from the findings related to communication frequency, ICT, and the built environment

The CAC as a Facilitator of Perceived Discrimination

The affirmation that perceived discrimination has a direct effect on perceived social connectedness was a key finding in this study. It should of course be noted that the Everyday Discrimination Scale (Williams et al., 1997) used to assess participants' experience of discrimination is interpersonally oriented. The items ask individuals to rate how people treat and perceive them. However, perceptions of discrimination are intersectional and not limited to interpersonal interactions. Indeed, it is possible that policy decisions and aspects of the built environment foster a closed CAC for PEH and contribute to perceived discrimination.

For instance, some traditional approaches to dealing with homelessness may be counterproductive. One of the dominant and widespread strategies for addressing the issue of homelessness is to regulate their freedom of movement and place restrictions on certain areas within cities insofar as standing and sleeping are concerned. Spatial control policies such as loitering laws give local law enforcement the ability to remove individuals from certain areas. In the context of this study, the cities of Ft. Smith and Fayetteville, Arkansas as well as Joplin, MO all have similar ordinances which prohibit individuals from such activities as stopping or standing on a business lot outside of operating hours, or selling (i.e., panhandling or hawking)

goods on a public sidewalk, or soliciting funds (i.e., begging). It should of course be noted that city ordinances such as these are generally left to discretionary enforcement and are often only enforced in order to remove individuals from a space if their behavior becomes problematic or disruptive. Places such as sidewalks in front of businesses, bus stops, and other public areas are highly visible and a great number of cities choose to take an *out of sight out of mind* approach to their homeless population. Similarly, hostile architecture such as *homeless spikes* or anti-sleeping benches are designed to ensure an individual cannot comfortably remain in a certain space, therefore ensuring no one will sleep/stand there (Petty, 2016).

Cities that actively pursue these types of intervention strategies create environments of discrimination in which a person feels as if their very existence is illegal (Amster, 2003; Clarke & Parsell, 2020). Moreover, these interventions reduce the number of spaces in which PEH may actively participate in a community and thus are likely to lead to an increased perception of discrimination. This is especially true given the added difficulty that many homeless face in carrying all their belongings with them during the day. This highlights the need for safe spaces such as day centers where PEH may store belongings and simply exist free from hassle. The relationship between discrimination and connectedness, combined with well-established benefits of community engagement and connectedness for PEH, imply that policies designed to promote inclusion and not intolerance may be optimal for effectively addressing homelessness.

The Importance of Family Reconciliation Interventions

H5 established that communication frequency with family and friends is positively associated with perceived social connectedness, which offers an important implication for programming and intervention design at homeless shelters. Family estrangement is a central theme in a number of examinations of homelessness and is often cited as a principal cause for

homelessness and/or the inability to escape it (Davis-Berman, 2011; Shinn et al., 2007). Not surprisingly, interventions designed to facilitate family reconciliation have demonstrated that reconstructing familial bonds and support networks were instrumental for emotional well-being, especially for homeless youth (Parker & Mayock, 2019). For shelter staff, case managers, and administrators, placing an emphasis on programming that assists PEH in reconnecting with families and assisting individuals with repairing those relationships may prove fruitful.

Limitations and Future Research

As with all research, this study had a number of limitations and these limitations provide opportunities for future research. First, sampling and data collection were limited because this study focused on a hard-to-reach population with certain biological and social hinderances that diminished their capacity for participation. Second, this study was completely quantitative, which prevents certain insights from coming to light in data analysis; a qualitative component would complement the data and provide a fuller picture.

Hard-to-reach populations such as PEH present a number of challenges for researchers. PEH live outside the normal structure of society, they have limited financial means, the vast majority struggle with mental health and/or addiction issues, and they often have limited literacy and reading comprehension. These issues inhibit research processes, for both quantitative and qualitative approaches. One intervention that would likely complement this study is Photovoice. Photovoice is an innovative form of participatory research in which participants are given cameras for a period of time. During that time, they are tasked with taking photos that reveal the lived realities of their daily lives. After the photos are gathered and developed, a community photo exhibition is often held in which community members may come together to observe and learn from the subject's depictions of their lives and the community that surrounds them.

Photovoice enables people to display their perspective of their communities, it promotes critical dialogue about personal and community issues, and has the ability to engage both community members and policy makers (Wang, 1999). The intervention may also stimulate social action (Wang & Burris, 1997) and has demonstrated the ability to engage marginalized and hard-to-reach populations such as PEH (Bender et al., 2018). Photovoice has been employed with homeless populations in recent years and the resulting exhibitions, when combined with semi-structured interviews, has revealed themes such as belonging and social isolation, as well as the meaning of spaces (Versey, 2020). In a 2011 photovoice intervention, women who were experiencing homelessness were able to bring to light important health service needs, as well as certain barriers to escaping homelessness. As a method which promotes engagement and participation at all levels of the community, as well as one that uses public spaces to promote belonging and connectedness, a photovoice intervention would fit well with the ecological perspective of this study.

One of the successes in this study was to utilize what Shaghaghi et al., (2011) refer to as facility-based sampling (FBS) which refers to recruiting a target population from facilities where they are receiving services. Coordinating with shelter staff and administrators was a key to success in this study. However, FBS comes with the disadvantage of under-sampling bias. In this case, data from PEH who stay away from shelters, or had been banned from shelters, was not gathered using FBS. Gathering data from those PEH who could not be accessed via FBS was done through street contact. For a quantitative design, gathering data from one or two individuals at a time on the side of the road is severely limiting. Additionally, street contacts bring a number of safety issues into play as well. Standing on the side of the highway presents traffic safety issues; walking into a homeless camp, even when invited, involves some risks as well. I would

strongly recommend that researchers always work in teams of two when gathering street-level data from PEH. Regarding actual data collection, quantitative surveys present some unique challenges when applied to the homeless population. For those individuals with limited literacy and reading comprehension, properly completing the survey was a challenge. Approximately 25% were returned incomplete or improperly filled out.

There were a number of questions that came to light during data analysis which a quantitative design cannot answer. The data revealed that the PEH in this study do not make use of the library, but do not provide a reason for lack of use. Similarly, the analysis revealed that there is no significant difference in perceived social connectedness between PEH who stay at shelters and those who do not. However, nothing is revealed about individual experiences in shelters or to what quality does meaningful communicative interaction occur in those discursive spaces. A qualitative thematic analysis or ethnographic approach would complement this study. Thematic analyses have the advantage of flexibility and simplicity and the ability to create meaning for a data set (Javadi & Zarea, 2016). Including semi-structured interviews in either a one-on-one setting or even in a focus group at a shelter could have been beneficial in survey design as well.

Conclusion

This study set out to examine the influence of social and structural variables on communicative behavior and perceived social connectedness of people experiencing homelessness (PEH) in the Northwest Arkansas and Joplin, Missouri areas. By applying the ecological framework of communication infrastructure theory (CIT; Ball-Rokeach et al., 2001), this study explored how the biological and social characteristics of individuals interact with the built and social structures of communities to influence the way PEH perceive and experience

their world. Using quantitative methodology, this study investigated a number of hypotheses and research questions which were produced from extant literature. The resulting statistical analysis revealed a complex picture of the lived reality for PEH and points toward a complicated relationship between individuals and their environment.

I would argue that the most important finding in this study is that there is a statistically significant relationship between perceived discrimination and perceived social connectedness. This finding implicates the work of city leaders and policy makers and suggest that those involved in community development would do well to consider how the progress of communities might include their most vulnerable members. Are we building walkable cities where people can exist on the sidewalk regardless of what they are wearing or whether or not they are walking or standing still, or pushing a cart with all their belongings in it? Are we developing policies that treat addiction as a public health issue as opposed to a crime? Are we interested in training and equipping our police to deal with mental health emergencies? These questions and their related problems are complex, and there are no simple solutions to complex problems. What there is instead, is hard work. There is the hard work of taking findings about cell phones, public transportation, living condition, and communication frequency and turning these into usable strategies that may help, even in a small way, to make the lived reality of those most vulnerable, a little less difficult.

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Appendices

Table 1

Hierarchical Regression Results for Communication Action Context Factors and Communication Frequency on Perceived Social Connectedness

	Communication Action Context (H3, H4b, H4d)	Communication Frequency (H5)	Communication Frequency by Communication Resource (RQ3)
	Social Connectedness	Social Connectedness	Social Connectedness
Step 1			
Age	-.03	-.03	-.03
Sex	.32***	.32***	.32***
Employment	-.08	-.08	-.08
Step 2			
Perceived Discrimination	-.44***	--	--
LGBTIQ	-.02	--	--
Race	-.05	--	--
Communication Frequency	--	.28***	--
Communication Frequency (Family and Friends)	--	--	.31***
Communication Frequency (Shelter Staff)	--	--	.08
Incre. R ²	.19	.07	.11
<i>F</i>	11.25***	8.95***	8.77***

Note. Variable entries are standardized beta coefficients.

* $p < .05$, ** $p < .01$, *** $p < .001$

Study Survey

1. What is your age in years? _____

2. What is your sex?

Male Female Non-binary/non-gender conforming Prefer

not to answer

3. What is your sexual orientation?

Heterosexual Gay/Lesbian Bisexual/Pansexual Trans/Queer

Prefer not to answer

4. What is your race? Check all that apply.

Caucasian/White African American/Black Hispanic/Latino Pacific Islander

Asian Native American Other Prefer not to answer

5. Are you currently employed?

Yes No

6. What is your current living condition?

Homeless shelter Housing-first community Group home

Unsheltered (car, tent, etc.) Living with friends or family

7. Do you have a phone?

Yes No

8. How often do you visit the public library?

Never A few times a year A few times a month. At least once a week

Almost every day

9. Is free public transportation available in your community? If so, do you use it?

Not available in my community Available but I don't use it Available and I use it

10. Do you now, or have you ever, experienced anxiety, depression, posttraumatic stress disorder, or other challenging mental health conditions?

Yes No Prefer not to answer

Please indicate how often you use the following sources when trying to find or share information

11. Personal Smart Phone

Never A few times a year A few times a month At least once a week Almost every day

12. Public Library Computers

Never A few times a year A few times a month At least once a week Almost every day

Please indicate how often you communicate with the following individuals

13. Family

Never A few times a year A few times a month At least once a week Almost every day

14. Friends and Peers

Never A few times a year A few times a month At least once a week Almost every day

15. Service providers or shelter staff

Never A few times a year A few times a month At least once a week

Almost every day

16. Case Managers

Never A few times a year A few times a month At least once a week

Almost every day

17. Employers

Never A few times a year A few times a month At least once a week

Almost every day

Please respond to the following statements by checking the box that best fits your experience.

18. You are treated with less courtesy than other people are.

Never A few times a year A few times a month At least once a week

Almost every day

19. You are treated with less respect than other people are.

Never A few times a year A few times a month At least once a week

Almost every day

20. You receive poorer service than other people at restaurants or stores.

Never A few times a year A few times a month At least once a week

Almost every day

21. People act as if they think you are not smart.

Never A few times a year A few times a month At least once a week

Almost every day

22. People act as if they are afraid of you.

Never A few times a year A few times a month At least once a week

Almost every day

23. People act as if they think you are dishonest.

Never A few times a year A few times a month At least once a week

Almost every day

24. People act as if they're better than you are.

Never A few times a year A few times a month At least once a week

Almost every day

25. You are called names or insulted.

Never A few times a year A few times a month At least once a week

Almost every day

26. You are threatened or harassed.

Never A few times a year A few times a month. At least once a week

Almost every day

Please indicate how much you agree or disagree with the following statements

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
27. I feel distant from people.	1	2	3	4	5

28. I don't feel related to most people.	1	2	3	4	5
29. I feel like an outsider.	1	2	3	4	5
30. I see myself as a loner.	1	2	3	4	5
31. I feel disconnected from the world around me.	1	2	3	4	5

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
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32. I don't feel I participate with anyone or any group.	1	2	3	4	5
33. I feel close to people.	1	2	3	4	5
34. Even around people I know, I don't feel that I really belong.	1	2	3	4	5

35. I am able to relate to my peers. 1 2 3 4 5

36. I catch myself losing a sense of connectedness with society. 1 2 3 4 5

Strongly disagree Somewhat disagree Neither agree nor disagree Somewhat agree Strongly agree

37. I am able to connect with other people. 1 2 3 4 5

38. I feel understood by the people I know. 1 2 3 4 5

39. I see people as friendly and approachable. 1 2 3 4 5

40. I fit in well in new situations. 1 2 3 4 5

41. I have little sense of togetherness with my peers. 1 2 3 4 5

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
42. My friends feel like family.	1	2	3	4	5
43. I find myself actively involved in people's lives.	1	2	3	4	5
44. Even among my friends, there is no sense of brother/sisterhood.	1	2	3	4	5
45. I am in tune with the world	1	2	3	4	5
46. I feel comfortable in the presence of strangers.	1	2	3	4	5

IRB Approval Letter**To: From:****Date: Action: Action Date: Protocol #: Study Title:**

Shawn Evans

Douglas J Adams, Chair IRB Expedited Review

06/27/2022

Exemption Granted

06/27/2022 2205400180

M.A. COMM Thesis

The above-referenced protocol has been determined to be exempt.

If you wish to make any modifications in the approved protocol that may affect the level of risk to your participants, you must seek approval prior to implementing those changes. All modifications must provide sufficient detail to assess the impact of the change.

If you have any questions or need any assistance from the IRB, please contact the IRB Coordinator at 109 MLKG Building, 5-2208, or irb@uark.edu.

cc: Matthew L Spialek, Investigator