The impact of demographic dissimilarity on service performance: A social network perspectives on communication network

by

Juhyun Kang

B.S., Hanyang University, 2012
M.S., Hanyang University, 2015

AN ABSTRACT OF A DISSERTATION

submitted in partial fulfillment of the requirements for the degree

DOCTOR OF PHILOSOPHY

Department of Hospitality Management
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Abstract

Employee diversity issues have received attention from both academics and practitioners in hospitality. However, inconsistent effects of diversity on team and organizational performances indicate that further research is needed to achieve a better understanding about diversity.

In order to explain the consequences of demographic dissimilarity, this study focuses on employees' centrality in the formal and informal communication networks based on Social Identity Theory (SIT) and Job Demand Resource (JD-R) theory. The network analysis is used to assess structural positions of employees in work groups. The purpose of the study is to investigate how demographically dissimilar employees are placed in de-center of the formal and informal communication network, and how these communication networks impact in-role and proactive customer service performances.

The current study targets at a total 106 hotel employees in the Mid-Eastern hotels in the U.S. Using a paper-pencil survey, questionnaires were distributed to hotel employees. For the social network analysis, a roster format was used to understand the respondents' communication among their team members. In order to calculate the in-degree centrality in the communication network, UCINET 6.658 was used.

The current study examined the negative impact of individual dissimilarity with team members on service performances via communication networks. Specifically, age dissimilarity and racial dissimilarity were negatively related to both formal and informal communication networks, while gender dissimilarity did not influence both formal and informal communication networks. Formal communication network mediated the relationship between age dissimilarity and in-role service performance, and informal communication network mediated the relationships between age dissimilarity and both in-role service performance and proactive customer service performance. In addition, formal and informal communication networks mediated the relationships between racial dissimilarity and both service performances. However, this study did not find the significant mediating effects of formal and informal communication networks in the relationships between gender dissimilarity and service performances. The contributions of the study to theory and practice are included along with limitations and directions for future research.

Keywords: diversity; communication network; service performance; hotel employees

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Chapter 1 - Introduction

The hospitality industry is highly diverse in terms of its workforce, consisting of people of color, female employees, and younger generations. The concept of diversity refers to "any perceived difference among people, such as age, functional specialty, profession, sexual preference, geographic origin, lifestyle and tenure or position with the organization" (Dobb, 1996, p.351). In terms of ethnicity, the hospitality industry in the United States is comprised of 24% Hispanic, 14.5% Black or African American, 7% Asian (US Bureau of Labor Statistics, 2019), and 52% women (Kalargyrou & Costen, 2017). Furthermore, it is estimated that the hospitality workforce will be more diverse in the future. For example, 25.2% of employees in the United States will be older than 55 years old in 2035 (US Bureau of Labor Statistics, 2019).

To better understand workforce diversity issues, a conceptual understanding of diversity is necessary. In general, two approaches to understanding diversity exist in scholarly research: the compositional approach and the relational approach (Kozlowski & Klein, 2000). The compositional approach indicates team-level diversity, which is described as the distribution of differences among team members in terms of demographics, attitudes, and personalities (Harrison & Klein, 2007). The premise of this approach is that diversity influences all individuals in a group and affects work processes (e.g., conflict or cohesiveness) or outcomes (e.g., creativity and job performance) at the team-level. The compositional approach is useful to answer research questions associated with differences among teams and their impact on team-level outcomes. Conversely, the relational approach concentrates on the comparison between individual attributes (e.g., demographic attributes) and the distribution of individual attributes in a group (Riordan, 2000). Hence, diversity in this perspective refers to the "dissimilarity or the extent to which an individual's demographic or idiosyncratic attributes are shared by other

people in the unit" (Guillaume, Brodbeck, & Riketta, 2012, p. 81). For example, among two females and five males in a work group, the two females are more dissimilar in the unit than the five males. The premise of this relational approach is that diversity demonstrates a focal person's degree of difference between a focal person and other people in a unit. The relational approach views diversity in an individual perspective and argues that this type of diversity influences individual process (e.g., socialization) and work outcomes (e.g., work performance). Therefore, this approach addresses how differences within groups influence individual-level outcomes.

While most research has focused on team-level demographic diversity, relatively few studies have focused on the effects of diversity from an individual employee perspective (Chattopadhyay, Tluchowska, & George, 2004; Tonidandel, Avery, Bucholtz, & McKay, 2008). The individual perspective is useful to better understand the diversity issues in the hospitality industry, where a high portion of employees are minorities (Manoharan & Singal, 2017). In terms of the individual perspective, this study focuses on relational demography. Relational demography refers to "the comparative demographic characteristics of members of dyads or groups who are in a position to engage in regular interactions" (Tsui & O'reilly, 1989, p. 403). Compared to the compositional perspective, it is useful to capture the focal employee's degree of differences between a focal employee and other employees in terms of demographic attributes (e.g., race, age, and gender). Thus, this approach emphasizes that the extent of each group member's dissimilarity varies in a same work unit, suggesting that a high-level of demographic dissimilarity may have a negative impact on work outcomes (Riordan, 2000). This study investigates how dissimilarities in race, age, and gender influence work-related outcomes of hotel employees. The findings from this study may help hotel practitioners gain a more accurate understanding of diversity at the individual level.

This research examines how employee diversity affects communication networks. Specifically, examining the role of employee's central position in communication network is critical to understanding the relationship between demographic dissimilarity and work outcomes (Freeman, Roeder, & Mulholland, 1979). Employees' centrality in their communication network can be described as the extent to which each employee exchanges information or resources with a focal employee. Given that a communication network is perceived as a good resource that represents the process of knowledge or information exchange among people (Borgatti & Cross, 2003), employees with more communication ties are more likely to access necessary information or advice (Borgatti & Cross, 2003). Considering the potential impacts of demographic dissimilarity on communication networks, these formal and informal communication networks can be good mediators to explain how hospitality employees' demographic dissimilarity affects work outcomes. For example, demographically dissimilar employees are less likely to be the center of both formal and informal communication networks, thus reducing job performances.

Problem Statement

The effective management of diverse workforces is a critical issue for the success of hospitality businesses (Madera, Dawson, & Neal, 2014). Specifically, hospitality practitioners are facing unprecedented challenges to successfully manage diverse workforces consisting of both younger and older employees, and racially diverse employees (Boehm, Kunze, & Bruch, 2011; Hsiao, Auld, & Ma, 2015). Therefore, understanding the impacts of demographic diversity on service performance is critical to provide managerial insights into successful diversity management in the hospitality industry.

Previous research has uncovered mixed effects of workplace demographic diversity (Bell, Villado, Lukasik, Belau, & Briggs, 2011; Stahl, Maznevski, Voigt, & Jonsen, 2010; Webber & Donahue, 2001). Importantly, the impact of diversity can be both positive and negative. Hospitality firms with more diverse workforces can improve creativity and innovation (Butcher, 2001; van Knippenberg & Haslam, 2003), whereas a diverse workforce can also be a source of conflicts between dissimilar employees (Solnet & Hood, 2008), obstacles to women's career development (Ng & Pine, 2003), and racial discrimination (Hsiao, Auld, & Ma 2015). The conflicting effects of workforce diversity indicate that hospitality research needs to examine the impact of diversity to provide further evidence on this phenomenon.

Diversity is an inevitable issue in the hospitality industry. Employee diversity results from various factors, such as repetitive and low-skilled tasks and low-entry barriers for newcomers. There are several opportunities and challenges inherent in a diverse workforce. Of course, hospitality firms may benefit from employee diversity, due to higher creativity and service quality (El-Said, 2013), customer satisfaction (García-Almeida & Hormiga, 2016), and positive financial performance (Singal, 2014). Simultaneously, various negative effects can be created by diverse workforces in the hospitality industry, such as communication barriers (Medera, Dawson, & Neal, 2013), racism (Devine, Baum, Hearns, & Devine, 2007), and generational differences (Solnet & Hood, 2008). Previous research also found that the adoption of diversity causes greater conflict (Jehn, Northcraft, & Neale, 1999) and higher employee turnover (Jackson, Brett, Sessa, Cooper, Julin, & Peyronnin, 1991).

These conflicting effects of diversity indicates that successful managerial practices are necessary to deal with diverse workforces in the hospitality industry. Particularly, because the hospitality workforces are expected to become more diverse in the near future (Manoharan &

Singal, 2017), understanding the impacts of diversity on job performance is important to create advantages and reduce disadvantages associated with diverse workforces. In this regard, this research focuses on the negative aspects of diversity in the hospitality industry. However, the negative aspects of diversity should not be interpreted as stating that demographically dissimilar employees cannot work effectively and build close relationships. Rather, organizations should be knowledgeable about how employees from different backgrounds create a beneficial environment and its impact on communication behaviors and service performance.

Although several studies have examined the impacts of demographic dissimilarity on work outcomes (Chatman & Flynn, 2001; Schippers, Den Hartog, Koopman, & Wienk, 2003; Vodosek, 2007), the underlying mechanism behind this relationship has not been uncovered. Given the inconsistent effects of diversity on work outcomes, identifying a valid mediator is meaningful to explain why and how demographic dissimilarity affects work outcomes. Only a few empirical studies have explored potential mediators, including conflict (Vodosek, 2007), cooperation (Chatman & Flynn, 2001), and reflexivity (Schippers, Den Hartog, Koopman, & Wienk, 2003). However, little research has investigated the effects of employee communication patterns in this relationship. Therefore, the current study investigates the role of employees' communication networks as a mediator in the underlying mechanism between demographic diversity and employee job performance by conducting social network analysis.

While most studies on communication behaviors take a perspective assuming an individual is an independent entity to focus on individual attributes, network theory argues that an individual behavior (e.g., communication) is best explained by taking a network perspective (i.e., structural position in the network) (Borgatti, Brass, & Halgin, 2014). Although the network perspective is useful to understand the comprehensive and dynamic structures of employee

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relationships, only limited studies on communication behaviors adopted network analysis

(Kalish, Luria, Toker, & Westman, 2015). Furthermore, little research has focused on structural-

level variables in explaining in-role and proactive customer service performance (Borgatti et al.,

2014; Venkataramani & Dalal, 2007). Given the benefit of examining the dynamic nature of

employee relationships, this research adopts network analysis.

 Job performance is better understood as two concepts: in-role job performance; and out-

role job performance. In-role service performance refers to the extent to which employees

behave in prescribed roles and requirements expected to be performed in workplaces

(Bettencourt & Brown, 1997). Proactive customer service performance is described as the ability

and willingness of employees to deal with their duties in a forward-thinking way, looking for

ways to improve, and having a beneficial impact on the environment (Grant & Ashford, 2008;

Parker & Collins, 2010).

While previous hospitality research has focused exclusively on in-role job performance

(Tang & Tsaur, 2016), it is also important to understand out-role job performance. The

increasing scholarly interest in organizational citizenship behaviors (Tang & Tsaur, 2016)

indicates the necessity of understanding employee behaviors in terms of out-role behaviors.

Thus, examining the impacts of employees' structural positions in communication networks and

their impacts on in-role and out-role job performances will enhance our understanding of team

performance in the hospitality industry.

Purpose of the Study

The purpose of the current study is to examine the impact of demographic dissimilarity

on work outcomes by adopting the relational perspective. Specifically, three demographic

dissimilarities - age, gender, and racial dissimilarity - are included as independent variables in the research model. As for dependent variables, in-role service performance and proactive customer service performance are included in order to measure both in-role and out-role work-related performance. In order to explain a clear relationship between demographic dissimilarities and work-related performances, employees' centrality in the formal and informal communication network is included as a mediator using social network analysis. The specific objectives of the present study are:

1. To investigate the direct effect of demographic dissimilarity (gender, age, and race) on employees' centrality in the formal communication network.

2. To investigate the direct effect of demographic dissimilarity (gender, age, and race) on employees' centrality in the informal communication network.

3. To investigate the direct effect of employees' centrality in the formal communication network on in-role service performance and proactive customer service performance.

4. To investigate the direct effect of employees' centrality in the informal communication network on in-role service performance and proactive customer service performance.

5. To investigate employees' centrality in the formal communication network as a mediator between demographic dissimilarity (gender, age, and race) and both in-role service performance and proactive customer service performance.

6. To investigate employees' centrality in the informal communication network as a mediator between demographic dissimilarity (gender, age, and race) and both in-role service performance and proactive customer service performance.

Significance of the Study

Diversity issues have received attention from both academics and practitioners in hospitality. Although the negative impacts of minority issues are critical in the hospitality industry (Bonn & Forbringer, 1992), most hospitality research has focused only on the positive outcomes of diversity, such as higher creativity and service quality (El-Said, 2013), customer satisfaction (García-Almeida & Hormiga, 2016), and financial performance (Singal, 2014). Given the repetitive and labor-intensive nature of hospitality tasks, this research is designed to explore the negative aspects of diversity in the hospitality industry.

While diversity literature has increased, a majority of research adopted group perspectives. However, dyadic interactions among employees are shaped on an individual level (Jackson, Joshi, & Erhardt, 2003). Focusing on the role of an individual employee, further research needs to examine the negative impacts of diversity on job performance in terms of individual perspectives. The current study provides theory-based empirical evidence of how demographic dissimilarity affects job performance.

This study is one of the first to use social identity theory (Tajfel & Turner, 1986) to examine how an individual employee's demographic dissimilarity influences job-related outcomes in hospitality literature. Furthermore, this study provides a conceptual structure that examines the underlying mechanism of demographic dissimilarity and in-role and out-role job performance. The implications of formal and informal communication networks (Labianca & Brass, 2006; Venkataramani & Dalal, 2007) and job demand and resource (JD-R) theory perspectives (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001) add further insights into the impact of diversity on in-role and proactive customer service performance.

Unlike existing studies, the current study applies the social network perspective to measure employees' communication behavior. Using network analysis, the current study can capture more precise team dynamics using in-degree centrality. This approach can better explain how a focal person (e.g., a racial minority in a team) builds communication ties and their potential impacts on individual job performance. This study contributes to the network literature by revealing the underlying processes through which network variables connect the antecedents and outcomes that have been neglected in previous studies (Venkataramani & Tangirala, 2010).

The findings of the current study provide practical implications. Most importantly, the study's findings can be best employed for the successful diversity management of the hospitality industry. Along with globalization, the freedom of labor across countries is being promoted; the hospitality industry is already dominated by diverse workforces. Given this critical change of labor structures, this study provides insight into how to manage diverse workforces in terms of their communication networks and their impacts on job performance. In other words, this study can inform hospitality businesses how to successfully create work environments where diverse employees have efficient formal and informal communication.

Lastly, the study's findings about in-role and proactive customer service performances can be used to promote employees' proactive behaviors and improve service performance. The network approach adopted in this study contributes to enhancing the validity of the study's findings. Hospitality practitioners and scholars can employ this method to examine dynamic employee relationships in terms of communications, relationships, and interactions in practice. Simple survey methods using name rosters can be used to examine employees' interaction patterns and where they are located in the network.

Definition of Terms

Age Dissimilarity: Age dissimilarity refers to proportional age dissimilarity measure, indicating with the extent of the focal individual is different than other co-workers in age with Euclidian *D* index (Harrison & Klein, 2007).

Employees' Centrality in the Formal Communication Network: Employees' in-degree centrality in the formal communication network is defined as the extent to which a focal person is the target of exchange information or resources regarding works (e.g., service issues, customer management, etc.) from other team members.

Employees' Centrality in the Informal Communication Network: Employees' in-degree centrality in the informal communication network refers to the extent to which a focal person is the target of talk about issues regarding non-work (e.g., hobbies, schedules after works, etc.) from other team members.

Gender Dissimilarity: Gender dissimilarity is indicated with proportional dissimilarity measure, specifically the extent of the focal individual is different than other co-workers in gender with Euclidian *D* index (e.g., female and male) (Harrison & Klein, 2007).

In-Role Service Performance: In-role service performance is described as the employees' service behavior which is specified in job descriptions, and it is composed of sevice tasks following standardized procedures (Raub & Liao, 2012).

Proactive customer service Performance: Proactive customer service performance refers to a form of "self-started, long-term-oriented, and persistent service behavior" (Rank, Carsten, Unger, & Spector, 2007, p. 366).

Racial Dissimilarity: Racial dissimilarity is indicated with proportional racial dissimilarity measure, specifically the extent of the focal individual is racially different compared to other co-

workers (Riordan, 2000). The race group includes African American, Caucasian, Hispanic, Asian, Native American, and Others.

Chapter 2 - Literature review

This chapter presents a review of the existing literature on demographic dissimilarity (i.e., age, gender, and race), formal and informal communication networks, and in-role service and proactive customer service performance. Based on the conceptualization of these constructs and theories, the research hypotheses are developed.

Demographic Diversity

Diversity Conceptualization

Harrison and Klein (2007) conceptualized the diversity assessment for three elements - separation, variety and disparity. Specifically, separation represents the differences among team members' beliefs or value. According to social identity theory (Tajfel & Turner, 1986) and attraction selection theory (ASA; Schneider, 1987), high separation leads to reduced cohesiveness, conflicts, distrust, and decreased job performance (Harrison & Klein, 2007). Second, the concept of variety means the differences in the relevant experience or knowledge among group members. In general, high variety results in greater creativity, unit flexibility in information processing, variation, selection, and retention (Harrison & Klein, 2007). Third, the concept of disparity indicates the differences in proportion to valued assets (i.e., pay or status) among group members. Disparity is related to within-team competition, deviance, withdrawal based on social status, justice, and hierarchy (Harrison & Klein, 2007).

Given the purpose of the dissertation study, the "separation" perspective is adopted to examine diversity; employees can be separated and categorized depending on their demographic characteristics. Employees tend to more communicate with in-group colleagues who share similar identities with them. On the other hand, they are less likely to interact with out-group

members who share the dissimilar identities from them. The in-group and out-group mechanisms may influence employees' communication behaviors. Because separation in terms of demographic attributes (e.g., race) reflects opposing belief and values, employees are less likely to communicate with others who have different beliefs and values. This can negatively affect team cohesion and identification (Harrison & Klein, 2007).

Diversity at Different Levels

Kozlowski and Klein (2000) argued that two levels of diversity exist: a compositional approach of diversity and a relational approach of diversity. The compositional approach of diversity indicates the configuration or patterns of team members' demographic attributes, personalities, or attitudes at an aggregated level (Harrison & Klein, 2007). This diversity can explain how the compositional differences among team members influences unit-level outcomes (i.e., problem solving ability, performance, etc.). Further, diversity is linked with work processes including team communication, team information sharing, and team members' learning behaviors (Joshi, Lio, & Roh, 2011). These work processes can provide explanations of how diversity affects the work performance.

The relational approach of diversity is conceptualized as how an individual's demographic attributes or personalities differ from other members in the same work groups (Barsness & Diekmann, 2005). Diversity in this perspective is defined as "dissimilarity or the extent to which an individual's demographic, or idiosyncratic attributes are shared by other people in a unit" (Guillaume, et al., 2012, p. 81). This approach explains how within group-member differences influence individual-level processes and outcomes in a work unit. Previous studies have found that when people are demographically dissimilar to their colleagues on the

same team, they are less likely to committed to their team and organization; specifically, they worry about their future career advancement resulting in a higher turnover for the company (Elfenbein & O'Reilly, 2007; Tsui, Egan, & O'Reilly, 1992).

Following previous approaches for examining the impact of diversity on employees (i.e., Kim et al., 2013), this study focuses on demographic dissimilarities in terms of the separation in age (older and younger employees), gender (male and female), and race (minorities and majorities) at the individual level.

Diversity in Hospitality Industry

According to the Bureau of Labor Statistics (2019), the hospitality industry is dominated by a diverse workforce: 24% Hispanic, 14.5% Black or African American, 7% Asian, and 53% women in 2018. As the hospitality industry is becoming more diverse (Medera et al., 2013), effective diversity management is critical for the success of the business. Diversity management enables hospitality companies to hire and manage a talented, diverse staff, enhance a positive organizational culture, and promote service quality. For example, the Marriott hotel corporation invested $2.8 million to develop hospitality skills and opportunities for diverse employees representing diversity in various categories, including women, youth, veterans, refugees, and people with disabilities. Their "Valuing Our World of Differences" training enhances and develops cross-cultural competence in the global work environment. The training strengthens why diversity training is important for the success of the hotel business. In addition, the Marriott Corporation has launched Marriott's Women's Leadership Development Initiative to increase the proportion of women in leadership positions, as well as to encourage current female leaders to

bring organizational success (Marriott International: Global diversity & Inclusion Fact Sheet, December 2017).

A growing amount of research has focused on diversity issues. Some literature indicates that the hospitality industry confronts challenges associated with diverse workforces, such as age diversity (Solnet & Hood, 2008), women's career development obstacles (Ng & Pine, 2003), and a negative perception of a racially diverse workforce (Hsiao et al., 2015).

Effectively managing the generation gap associated with differences between younger generations (i.e., generation Y and Z) and older generations (i.e., baby boomer generations) has become a critical issue in the workplace. Previous studies examined the relationship between age diversity and work performance (DeMicco & Kavanaugh, 1988) and students' perception of working with older employees (Zhong & Hertzman, 2014), diversity climate (e.g., Kunze et al., 2011), and the impact of age diversity on organizational job performances (Avery, McKay, & Wilson, 2007).

DeMicco and Kavanaugh (1988)'s study found that age diversity affects negatively on work performance. Zhong and Hertzman (2014) found that Asian students were less likely to work with older employees than European students. A study conducted by Avery et al (2007) found that perceived age similarity was positively related to higher levels of work engagement among elderly employees.

As for racial diversity, most literature focuses on several issues, including the effects of multicultural workforces (Nykiel, 2004), cultural diversity (Devine et al., 2007), and leadership support in cross-cultural diversity management (Lim & Noriega, 2007). Devine et al. (2007) argued that intercultural communication is one major challenge for the increased chance of misunderstandings arising from different cultures. In addition, culturally diverse employees face

issues including racism and harassment. For example, a high-level of diversity results in lower levels of interaction and organizational citizenship behavior among minority employees (Chattopadhyay et al., 2004).

As for gender diversity, most research is concentrated on female employees (i.e., Manoharan & Singal, 2017; Santero-Sanchez, Segovia-Pérez, Castro-Nuñez, Figueroa-Domecq, & Talón-Ballestero, 2015). In general, female employees suffer from long working hours, irregular work schedules, gender discrimination, and unfavorable working conditions (Santero-Sanchez et al., 2015). Female employees are more likely to hold a low status compared to male employees; further, the gap is greater as job tenure increases. Male employees were preferred for higher positions in the hotel industry (Santero-Sanchez et al., 2015). Another study (Ng & Pine, 2003) examined the obstacles of female employees for career development in hotels and found that work-family conflict and the impact of the internal networks of the older male employees on their career advancement are the main threats for career advancement for female employees. In the same vein, Kim, Murrmann, and Lee (2009) found that the role of stress on female employees has a higher negative impact on job satisfaction than male employees.

Communication Network

Formal Communication

Formal communication refers to the extent to which job-related information is transferred by an organization to its employees and among employees of an organization (Price, 1997). Formal communication is based on rules that enhance work efficiency (Katz & Kahn, 1978). There are three different directions of formal communication flows: downward, upward, and side-to-side (horizontally across peers) (Tompkins, 1967). Downward communication focuses on

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providing directives or feedback from higher to lower levels of organizations. The downward communication includes directives, instructions, and information for employees. However, information is likely to get lost as it is passed from higher to lower; the original meanings can be distorted (Tourish, 2010). Canary (2011) suggested five general purposes of downward communication: (1) implementation of objectives and strategies, (2) job instructions and rationale, (3) job procedures and practices, (4) performance feedback, and (5) socialization.

Upward communication focuses on suggestions to improve work efficiency and clarification of directives that are usually delivered from subordinates to supervisors. In general, formal upward communications include formal feedback mechanism enacted by organizations. Upward communication consists of five types: (1) problems and exceptions, (2) suggestions for improvement, (3) performance reports, (4) grievances and disputes, and (5) financial and accounting information (Canary, 2011). For example, subordinates can ask questions for work procedures or provide suggestions to improve organizational functions.

Lastly, horizontal communication refers to the spread of timely "need to know" information. Horizontal communication flows facilitate the group coordination by allowing units to work with other units without having to rigidly follow the channels or chain of command. This communication is composed of four categories: (1) intradepartmental problem solving, (2) interdepartmental coordination, (3) staff advice to line departments, and (4) mentoring program communication. Previous literature has shown the positive aspects of formal communication, such as its positive impact on job satisfaction, reduced work conflict, and enhanced trust (Holtzhausen, 2002). In addition, the horizontal communication can reduce the negative effects of rumors that hinder job satisfaction (Difonzo & Bordia, 2000) and decrease work-related costs (Sine, Mitsuhashi, & Kirsch, 2006).

Informal Communication

Informal communication is defined as "voluntary talks that do not have to be solely work or task focused" (Fay, 2011, p. 213). Although formal communications in work-related relationships facilitates work issues, informal communications are more interactive and hold rich content in that the topics of conversation are related to employees' interests or concerns, thus creating meaningful interpersonal relationships (Eisenberg, Monge, & Miller, 1983). Co-workers who are involved in the informal communications discover their values, form a certain attitude, and express opinions while being acquainted with others (Hargie, Dickson, & Nelson, 2003).

Previous studies have revealed that informal communication networks can be used to make up for weakness of formal communication (Poole, 2002) and improve decision-making processes (Albrecht & Hall, 1991). Researchers have argued that small talks help structure social interactions, reduce uncertainty, and bring about social cohesion (Brown and Levinson, 1987). Informal communications can reduce work-related stress (Ray & Miller, 1994), reduce turnover intention (Burke & Moore, 2004), and foster extra role behaviors (Alparslan & Kılınç, 2015).

Network Approach: Employees' Centrality in Formal and Informal Communication Network

Previous studies have focused on individual data (Brass, Galaskiewicz, & Greve, 2004). Although individual employees' perception regarding relationships with others can be useful to initially understand its processes and consequences, one-way subjective data is inherently limited to understand the comprehensive and objective picture of relationship networks (Borgatti et al., 2014). Recently, in broader business research, a social network approach received increasing

attention based on two-way relational data (Yamkovenko & Hatala, 2015). Social network refers to "a finite set or sets of actors and the relation or relations defined on them" (Wasserman & Faust, 1994, p. 20). The previous social network research has focused on three topics: (a) performance, (b) stress, and (c) homophily in terms of a communication network, a friendship network, an information network, and a knowledge network.

In social network research, an employee's network position (e.g., structural hole) and tie (e.g., the centrality of the advice network) play a critical role in gaining resources that in turn lead to positive job performance (Brass, 1984; Sparrowe, Liden, Wayne, & Kraimer, 2001). Recent research has contributed literature on job performance by incorporating diverse factors (e.g., conflict) and context (e.g. culture) with network data. Gargiulo, Ertug, & Galunic (2009) examined the effect of different dense social ties (e.g., acquire or provider) on job performance in the context of investment banks and financial service companies. Rodan (2010) found that knowledge heterogeneity is related to positive job performance only when density is low. Methot, Lepine, Podsakoff, and Christian (2016) conducted two studies; the first study revealed that the number of workplace friendships has a positive impact on job performance. The second study found that friendships are positively related to job performance through trust but are negatively related with job performance through the difficulty of maintenance. One study (Hood, Cruz, & Bachrach, 2017) focused on the relationship between relational conflict networks and job performance. With regard to relationship conflict, employees who have relational conflict with other employees have a negative work performance.

In understanding employee network position, homophily needs to be examined. Homophily refers to actors with similarities in terms of race, religion, education, gender, age, and occupation; people sharing these factors are more likely to connect with one another

(McPherson, Smith-Lovin, & Cook 2001). McPherson et al. (2001) argued that similarity is highly associated with every type of relation, such as friendship, marriage, advice, support, work, and information transfer. The effects of homophily have been investigated using social network analysis. Brass (2011) found that similar actors are positively related to the density or connectedness of the network. Similarly, Dumas, Phillips, and Rothbard (2013) found that racial dissimilarity weakens the relationship between the integration (e.g., attending social event) and closeness among co-workers. However, Kabo (2017) found that homophily variables (i.e. similarity in gender, tenure, and education) are not significantly related to potential encounters in a workplace. Table 2.1 represents the details of existing studies on social networks in organizational behavior literature

Table 2.1 Social Network Research

	Research questions	Network type	Variables	Data collection	General findings
Performance					
de Jong, Curşeu, & Leenders (2014)	• Does communication density reduce the negative relationships and team cohesion which relate to team performance?	• Communication density	• Negative relationships, TMX, team cohesion, team performance, task-interdependence	• 334 respondents from eight organizations including a bank, a web-based retail organization, a charitable institution, a university, a health care organization, and a local police department in European country	• The communication density did not buffer the relationship between negative relationships and team cohesion.
Methot et al. (2016)	• How workplace friendships compel or hinder job performance?	• Out-degree friendship network size • Out-degree inetwork size	• Study1) Exhaustion, positive affect, task performance • Study 2) Emotional support, felt obligation, trust, felt obligation	• Study 1) 301 employees and supervisors in insurance company in the U.S. (response rate: 81.8%) • Study 2) 182 employees working in retail stores and restaurants in the U.S (response rate: 90.5%) • Survey	• Study 1) The number of workplace friendships is positively related to supervisor ratings of job performance. However, it has negative indirect effect of emotional exhaustion between multiplex workplace friendship and job performance. • Study 2) Workplace friendship predicted job performance through trust, while negatively relate to job performance through maintenance difficulty.

Table 2.1 Social Network Research (Continued)

	Research questions	Network type	Variables	Data collection	General findings
Hood et al. (2017)	• How task and relationship conflict affect team performance?	• Task conflict network • Relationship conflict network • Friendship network • Multiplex network	• Team performance	• 528 undergraduate students in the U.S. • Survey	• Relationship conflict between non-friends is positively associated with team performance while those between friends is negatively associated with team performance. • Task conflict between non-friend positively affect team performance.
Rodan (2010)	• Does structural hole theory have an impact on managerial performance?	• Ego-network density • Alter knowledge heterogeneity	• Managerial Job performance • Innovativeness	• 106 (of 238) employees from a Scandinavian telecommunications service provider • Survey	• Ego-network density is negatively associated with job performance. • Knowledge heterogeneity has a positive impact on job performance.
Stress					
Kabo (2017)	• How socio-spatial factors	• Communication network	• Homophily (similarity in gender etc.) • Spatial distance • Organizational Structure • Real-time location tracking	• 35 samples using online survey to measure network data • 37 samples using location and motion tracking	• Homophily variables were not significantly related to potential encounters.

Table 2.1 Social Network Research (Continued)

	Research questions	Network type	Variables	Data collection	General findings
Homophily					
Ingram and Morris (2007)	Do people interact with dissimilar others in diverse environment?	• Degree of friendship	• Homophily (sex, race, physical attractiveness)	• 97 attendees of the event • Survey	• Similarity of actors is positively associated with the density or connectedness.
Dumas et al. (2013)	• Whether racial dissimilarity moderates the relationship between integration	• Closeness (Respondents' feelings of closeness to their coworkers)	• Integration behavior • Racial dissimilarity	• 228 MBA first year students (response rate: 51%) • Three separate surveys were conducted.	• Racial dissimilarity negatively moderates the relationship between integration and closeness among co-workers.
Gargiulo et al. (2009)	• How does network closure (i.e., acquire or provider) affect job performance?	• Network size • Density • Hierarchy	• Job performance	• 2,263 samples were collected from 31 countries • Survey	• Network closure (i.e., dense social ties) acted employees as an acquirer of information was positively associated with job performance whereas acted as provider of information was negatively associated with job performance.
Mizruchi et al. (2011)	• How does tie density affect job performance?	• Tie strength and density of Information network	• Performance benefit as bonus	• 80 bankers in interview	• Both strong tie and weak tie were only positively associated with work performance in informational network, not in approval network.

Table 2.1 Social Network Research (Continued)

	Research questions	**Network type**	**Variables**	**Data collection**	**General findings**
Kalish et al. (2015)	• How an individual's perceived stress affects one's development of communication network?	• Communication tie	• Stress	• In a 2-day assessment boot camp for 177 male military unit. • Participants are randomly assigned into 6 groups and only interact with members of their group.	• Individuals who suffer from high level of stress, they are less likely to create new network and they are more likely to maintain their current network. • This communication network increased individuals' level of stress over time.

Communication network refers to "patterns of contact reacted by the flow of messages among communicators through time and space" (Monge & Contractor, 2003, p. 3). Employees' centrality in the formal communication network can be interpreted as the degree to which the specific employee is the target of exchange information or resources regarding works (i.e., service issues, customer management, etc.). On the other hand, employees' centrality in the informal communication network represents the extent to which the specific employee is the target of exchange information or resources regarding non-works (i.e., hobbies, schedules after works, etc.). This study captures two types of communication network data measured by all team members for network analysis. This way will examine how demographic dissimilarity (i.e., age, gender, and race) affects employees' positions in the communication network ties–i.e., who frequently talk regarding work and non-work to whom, and how communication centralities impact work outcomes (i.e., in-role and proactive customer service performances).

Service performance

In-Role Service Performance

In-role service performance (role-prescribed service performance) refers to the extent to which employees behave in prescribed roles and requirements expected to be performed in workplaces (Bettencourt & Brown, 1997). Role-prescribed expectations exist in both implicit norms and explicit duties specified in documents including job descriptions, performance appraisal forms, or goal statement (Puffer, 1987). In the context of service industry, service employees carry out role-prescribed tasks and their proficiency in accomplishing the tasks impacts on the performance. Importantly, in-role service performance is highly related to

customer satisfaction; customers' perceived service quality is based on the degree to which employees satisfy the needs and wants of customers (Liao & Chuang, 2004).

In the hospitality literature, Liu, Liu, and Geng (2013) examined how emotional labors affect role-prescribed performance via creativity in the hotel industry. They found that only deep acting enhances creativity, thus increasing role-prescribed service performance. In a recent study conducted by Moon, Hur, and Choi (2019), subordinates' perception about leaders' deep acting toward customers is positively related to their perception about the leaders' authentic leadership. Lastly, Zhao, Yan, and Keh (2018) found the significant effect of employees' in-role behaviors on customer participation.

Some researchers identified negative effects of demographic dissimilarity on employees' role-prescribed performance. Riketta (2005) conducted meta-analysis and found that demographically minor employees are less likely to focus on their task, which negatively influences job performance. Joshi, Liao, and Jackson (2006) found that lower status minorities (women and people of color) performed better when they were not isolated from other women and people of color.

Proactive Customer Service Performance

Although general service performance is a critical factor which affects customer satisfaction by meeting the needs of customers (Liao & Chuang, 2004, 2007), recent literatures have emphasized the concept of proactive customer service performance for customers by providing "extra" service which is beyond the prescribed roles (Raub & Liao, 2012). Proactivity is described as the ability and willingness of employees to deal with their duties in a forward-thinking way, looking for ways to improve, and have a beneficial impact on the environment

(Grant & Ashford, 2008; Parker & Collins, 2010). Based on the definition of proactivity, proactive customer service performance is described as a form of "self-started, long-term-oriented, and persistent service behavior" (Rank et al., 2007, p. 366).

Proactive customer service performance consists of three core characteristics of personal initiative: (1) self-started behavior, (2) long-term oriented, and (3) persistent behavior (Frese & Fay, 2001). First, proactive customer service performance involves self-started behavior. For example, participating in proactive customer service should not be enforced by customers or supervisors. Second, proactive customer service performance entails long-term-oriented behaviors, including preparing for future customers' needs in advance which may become beneficial for future customers. Third, proactive service performance includes persistent behavior, for example, consistently seeking feedback from their customers. Therefore, proactive service performance refers to individuals' self-started, long-term oriented, and persistent service behavior. Understanding the implications of proactive customer service performance is critical for the success of hospitality organizations. For example, employees who engage in proactive service behaviors serve their customers effectively and help other team members, resulting in a better quality of service.

As for the empirical studies, Raub and Lia (2012) investigated the relationships between initiative climate and general self-efficacy on employees' proactive service performance using employees in 74 hotel chain in Europe. Results indicated that both initiative climate and self-efficacy were positively associated with proactive service performance. In another study, Lau, Tong, Lien, and Hsu (2017) found that ethical work climate and employee commitment positively related to proactive service performance. A study of 599 frontline employees in hotel revealed that high-commitment HR practices positively impact service employees' proactive

service performance via self-efficacy. Although limited, previous literatures have examined the negative relationship between demographic dissimilarity and proactive behavior (e.g., OCB). Mamman, Kamoche and Bakuwa (2012) found that minorities are likely to have lower commitment and withdrawal from Organizational Citizenship Behavior.

Overarching Theory

Social Identity Theory

Social identity is defined as "'the individual's knowledge that he [or she] belongs to certain social groups together with some emotional and value significance to him [or her] of this group membership" (p. 31). Social identity is a part of a person's sense of 'who they are' in terms of internalized group membership (Ellemers, Kortekaas, & Ouwerkerk, 1999). According to social identity theory (Tajfel & Turner, 1986), an individual categorizes the groups in a social unit based on attributes in a self-categorization process (Tsui, Egan, & O'Reilly, 1992). Individuals are more likely to interact with those who share the same identity and maximize intergroup distinctiveness. Because of this categorization process, in-group and out-groups are created. While in-group members who share the same social identity are likely to interact or help in-group members, they have unfavorable attitude toward out-group members (Tajfel, 1979). These in-group and out-group effects are well examined in previous studies (Brewer & Gardner, 1996; Hogg et al., 1995). Even in an arbitrarily assigned group, the in- and out-group behaviors are identified (Billing & Tajfel, 1973).

Social identity theory has been used to explaining rioting and violence behaviors. Social psychologists explained that these anti-social behaviors are stemmed from environmental forces such as high cohesiveness and anonymity (Postmes & Spears, 1998). For example, anonymity

tends to weaken the personal unique identity and increase the social identity (Reicher, Spears, & Postmes, 1995). Reicher (1987) explained that participants have a specific purpose and norms on rioting behaviors which make them build a strong social identity as a same group member. This view is against the prevailing theory of rioting behavior, arguing that each unique individual comes together in the crowd and then norm is created by the contagious effects on bystanders (Turner & Killian, 1957).

The social identity also introduced a new perspective on conformity, power, and social influence (Hornsey, 2008). By polarized group process, the norms of ingroups are being shaped to define the ways to think and act. The in-group members who are in leadership positions try to internalize the norms of the group and expect that other group members to do in the same way. Thus, public compliance and power over out-group members occur in this formulation by following the shared norms of the in-group.

Job Demand-Resource Model

The central assumption of the job demands-resources (JD-R) model (Bakker & Demerouti, 2007) is that work environment consists of two categories: job demands and job resources (Demerouti et al., 2001). Job demands are known to illicit strain that requires physical or psychological efforts and cost to be recovered. On the other hand, job resources have three characteristics: (1) reducing job demands, (2) helping to accomplish work-related goals, and (3) encouraging personal development. The job resources can be categorized with psychological (e.g., optimism), physical (e.g., health), organizational (e.g., job security), and social (e.g., social support) aspects of the job (Bakker & Demerouti, 2007).

The JD-R model proposes two distinct processes examining how job demands and resources influence employee wellbeing (Bakker & Demerouti, 2007). One process is related to health impairment, negatively affecting employee's wellbeing with the symptom of burnout (e.g., feeling exhausted) as a result of job demands (Demerouti et al., 2001; Lee & Ashforth, 1996). For example, if an individual employee experiences a job demand, this person tends to experience burnout. Contrary to the health impairment process, in the motivational process, job resources attribute to work engagement, thus leading to beneficial work outcomes (Schaufeli & Bakker, 2004). For example, the more has job resources, the more he or she is likely to use these resources doing their tasks, thus affecting positive work outcomes (e.g., in-role or extra-role performance; Xanthopoulou, Baker, Heuven, Demerouti, & Schaufeli, 2008).

In 1990's, the number of research regarding burnout which is defined as a chronic exhaustion, a cynical attitude on work, and reduced work efficiency (Maslach, Schaufeli, & Leiter, 2001) increased. However, the theoretical explanation on the concept of burnout is still limited. Lee and Ashforth (1996) found the job demand and resources cause burnout in a meta-analysis. At the same time, Demerouti (1996) identified a structure of job demands and resources that are all applicable for employees in every industry and conducted multiple studies to design the structure between work environment and burnout. In 1997, Demerouti and Bakker developed the full model with job resources, demands, and burnout in a single model.

After testing this theoretical model successfully, a series of research examined the relationship between job resources and job demands. As a result, these studies found the two different process: a motivational process (e.g., job characteristics related to achieve personal development) and a health-impairment process (e.g., work pressures). For example, Bakker, Demerouti, DeBoer, and Schaufeli (2003) found that job demand is positively linked to absence

duration related to health problem via burnout and job resource is negatively associated with absence frequency via organizational commitment.

In recent years, the concept of job crafting has received attention in academia. Job crafting is defined as modifying aspects of employees' jobs in order to improve the work efficiency and preferences (Wrzesniewski & Dutton, 2001). These changes can be identified as three types: task crafting (e.g., modifying the order of work process), relationship crafting (e.g., increasing frequency of interacting the customers), and cognitive crafting (e.g., changing the subjective meaning of work). Tims, Bakker and Derks (2012) identified the positive impact of job crafting. Employees obtain more feedback and help (e.g., job resources) and decrease work stress (e.g., job demands). Therefore, employees can optimize their workstyle and have higher work engagement.

Hypothesis Development

Demographic Dissimilarities and Employees' Centrality in Formal and Informal Communication Network

This dissertation study advances diversity research by investigating the potential relationship between demographic dissimilarity (i.e., age, gender and race) and formal and informal communication network. Specifically, this research examines whether and how demographic dissimilarity affects communication network. Drawing social identity theory (Tajfel, 1979) and homophily theory (Lazarsfeld & Merton, 1954), the present research claims that employees with higher demographic dissimilarity are less likely to be placed in the center of both informal and formal communication network of team members.

The key tenet of social identity theory (Tajfel, 1979) suggests that demographic characteristics (i.e., age, race, and gender) can shape employees' social identity, which affects their responses to group members. Specifically, people inherently segregate themselves and other people into social categories based on their demographic attributes (e.g., race) (Tajfel, 1979). Once the group classification occurs, individuals who share the same or similar social identity (in-group members) strive to enhance their affiliation by showing favoritism to the members sharing same or similar social categories while having an unfavorable emotion and attitude toward out-group employees sharing different social categories (Tajfel, 1979).

Similarly, the concept of homophily describes people's tendency to create contacts with the similar others (Lazarsfeld & Merton, 1954). MchPherson et al. (2001) described this phenomenon as "contact among similar people occurs at a higher rate than among dissimilar people" (p. 416). When people found similarity with others, they would be more comfortable and likely to get closer because they feel less psychological distance with them. Homophily has been observed not only in non-instrumental relationships (e.g., friendship and marriage; Kalmijn, 1998), but also in the instrumental relationships (e.g., relationships within formal organizations).

For the different communication networks between similar people and dissimilar people, structural constraints are created in workplaces (McPherson & Smith-Lovin, 1987). Structural constraints can be the unequal distribution of people categories; majority employee groups are created by similar employees in terms of race, age, and gender whereas minority employee groups are created by dissimilar employees (Blau, 1977). For example, if a new employee shares the same race, the majority groups of employees with the same race feel more attractive to this employee. As a result, the new employee will be included in the majority employee group.

Based on the social identity theory, this study suggests in-group members and out-group mechanisms (Lazarsfeld & Merton, 1954). For example, in terms of gender, if there are 7 female employees and 2 male employees in a hotel, the 7 female employees would be in-group members and 2 male employees would be out-group members. Because in-group (majority) members enhance a group cohesiveness by treating favorably their in-group members compared to the out-group (minority) members, in-group members are likely to actively communicate with the other in-group members. Therefore, in-group members may be placed in the central positions in communication network than out-group members. Previous studies have supported that individuals are likely to communicate with in-group members while regulating communications with out-group members (Guillaum et al., 2012; Kim et al., 2013). This results in reduced social integration of out-group employees (Van Knippenberg, De Dreu, & Homan, 2004). Thus, employees who are in the out-group are less likely to be in the central position in the communication network than in-group members.

The nature of communication can be a binary condition on the impact of in-group and out-group networks. In workplaces, two communication networks exist–formal communication network and information communication network. The formal communication is described as the extent to which job information is transferred by an organization to its employees and among employees of an organization (Price, 1997). Formal communication is rational focusing on work roles and routines rather than personal attributes (Katz & Kahn, 1978). On the other hand, informal communication network refers to "voluntary talks which are not solely work or task focused" (Fay, 2011, p. 213). For example, hotel front employees have both formal communications (i.e., discussing with other employees regarding customer service and property

management systems) and information communications (i.e., discussing with other employees regarding their plans after works).

Taken together, the social identity theory suggests how demographic dissimilarity affects hospitality employees' centrality in communication networks. When demographically similar in-group members interact with different out-group members, they may be less comfortable to interact with them than with in-group members (Gallois, 1994). The following hypotheses are suggested.

Hypothesis 1a: Age dissimilarity is negatively related to employees' centrality in the formal communication network.

Hypothesis 1b: Gender dissimilarity is negatively related to employees' centrality in the formal communication network.

Hypothesis 1c: Racial dissimilarity is negatively related to employees' centrality in the formal communication network.

Hypothesis 2a: Age dissimilarity is negatively related to employees' centrality in the informal communication network.

Hypothesis 2b: Gender dissimilarity is negatively related to employees' centrality in the informal communication network.

Hypothesis 2c: Racial dissimilarity is negatively related to employees' centrality in the informal communication network.

Employees' Centrality in Communication Network and In-Role and Proactive

Customer Service Performance

The current study proposes that employees' centrality in formal communication positively affects in-role service performance and the employees' centrality in informal communication positively affects proactive customer service performance. In-role service performance is defined as the service performance is displayed simultaneously when employees follow the guidelines in the job description for the specific service (Dewitt, 2004). Extra-role performance is defined as discretionary behaviors which is beyond the requirement of formal roles (Bettencourt & Brown, 1997).

The Job demand and resource (JD-R model; Demerouti et al., 2001) provides the foundation of the relationship between employee centrality in communication network and in-role and proactive customer service performance. According to the JD-R model (Demerouti et al., 2001), job resources can determine employees' behaviors. Among various job resources, including psychological (e.g., emotional intelligence), physical (e.g., wellness), organizational (e.g., bonus), and social (e.g., friendship), this study focus on social resources, which are embedded in central positions where focal employees can implement these resources when interacting with other employees. Further, focal employees can not only effectively receive and provide useful information but also emotionally support other employees by becoming a mentor for them (Lin, Fu, & Hsung, 2001)

Employees' centrality in the formal communication network refers to the degree to which an employee is placed in the central position in the work-related network (Borgatti, 2005). In the workplace, an employee's centrality in this network can be high when the employee highly interacts with other team members. Specifically, focal employees in the formal communication

network are highly exposed to work-related information within a team. This type of employee serves as a critical employee to transmit work-related resources to other team members and help to facilitate team performance (Wasserman & Faust, 1994).

Centrality of the informal communication network represents the degree to which a specific employee is closer to other team members (Venkataramani, Zhou, Wang, Liao, & Shi, 2016). The current study argues that employees' position in the informal communication network enhances proactive and discretionary behaviors that go beyond the requirement of formal roles or duties (Bettencourt & Brown, 1997). Importantly, employees with high centrality in the informal communication network may become motivated to perform extra works to benefit other team members and organizations by reciprocation (Karriker & Williams, 2009; Zapata-Phelan et al., 2009). According to social exchange theory, employees who have a good relationship with other colleagues and receive positive attention from employees are likely to engage in organizational citizenship behaviors (OCB) (Podsakoff, MacKenzie, Paine, & Bachrach, 2000). In the same vein, those who have a high level of open interaction with others are likely to help others to solve problems by providing advice or suggestions (Erickson, 1988). Lastly, social resource theory indicates that central employees can be empowered to provide further resources or ideas for other team members because they feel responsibility to do so (Lin, 1990).

Taken together, the current study proposes that high centrality in the formal and informal communication network are positively related to in-role service performance and proactive customer service performance. The following hypotheses are suggested.

Hypothesis 3a: Employees' centrality in formal communication network is positively related to in-role service performance

Hypothesis 3b. Employees' centrality in formal communication network is positively related to proactive customer service performance

 Hypothesis 4a: Employees' centrality in informal communication network is positively related to in-role service performance

Hypothesis 4b. Employees' centrality in informal communication network is positively related to proactive customer service performance

Mediating Role of Communication Network

Given the differentiated nature of formal and information communications, demographic dissimilarity differently affects in-role and proactive customer service performance via informal and formal communication network. In the formal communication network, employees' centrality will mediate the linkage between demographic dissimilarity and in-role service performance. According to Homophily theory (Lazarsfeld & Merton, 1954), demographically majority employees are likely to lead formal communications (i.e., task related information, advice, etc.) with other employees. Conversely, demographically minor employees in the formal communication network are less likely to engage in in-role behaviors (e.g., offer inputs into their tasks) (Riketta, 2005), resulting in reduced role-prescribed service performance. When employees are decentralized in the formal communication network, they will have relatively less support from other employees to accomplish tasks. Further, the decentralized employees will be less motivated and empowered to improve service performance if they have limited formal communication channels with others. Thus, this study proposes following hypotheses regarding mediation.

Hypothesis 5a: Employees' centrality in the formal communication network mediates the relationship between age dissimilarity and in-role service performance.

Hypothesis 5b: Employees' centrality in the formal communication network mediates the relationship between gender dissimilarity and in-role service performance.

Hypothesis 5c: Employees' centrality in the formal communication network mediates the relationship between racial dissimilarity and in-role service performance.

Hypothesis 6a: Employees' centrality in the formal communication network mediates the relationship between age dissimilarity and proactive customer service performance.

Hypothesis 6b: Employees' centrality in the formal communication network mediates the relationship between gender dissimilarity and proactive customer service performance.

Hypothesis 6c: Employees' centrality in the formal communication network mediates the relationship between racial dissimilarity and proactive customer service performance.

On the other hand, demographically minority employees (i.e., a high level of demographic dissimilarity) are likely to be located in decentralized informal communication network, restricting their out-role behaviors. According to social identity theory (Tajfel & Turner, 1986), demographically minor employees may feel detached or lonely because demographically major employees dominate casual conversations associated with their personal interests or concerns (Riketta, 2005). Given that out-role behaviors are fostered by active informal communications among group members (Bowler & Brass, 2006), minor group members will be less motivated to engage in out-role behaviors for a lack of information communications with others. Thus, below more mediation hypotheses are proposed.

Hypothesis 7a: Employees' centrality in the informal communication network mediates the relationship between age dissimilarity and in-role service performance.

Hypothesis 7b: Employees' centrality in the informal communication network mediates the relationship between gender dissimilarity and in-role service performance.

Hypothesis 7c: Employees' centrality in the informal communication network mediates the relationship between racial dissimilarity and in-role service performance.

Hypothesis 8a: Employees' centrality in the informal communication network mediates the relationship between age dissimilarity and proactive customer service performance.

Hypothesis 8b: Employees' centrality in the informal communication network mediates the relationship between gender dissimilarity and proactive customer service performance.

Hypothesis 8c: Employees' centrality in the informal communication network mediates the relationship between racial dissimilarity and proactive customer service performance.

Proposed Relationships

Figure 2.1 indicates the overarching model of the study. Demographic dissimilarity factors (age, gender, and race) are antecedents of formal and informal communication networks. In-role and proactive customer service performances are consequences of informal and formal communication networks. This study examines the direct effects of demographic dissimilarity (i.e., age, gender, and racial dissimilarity) and the mediating role of communication networks. This study explores the impact of the direct relationship between communication networks and service performance. Lastly, the mediating effect of communication networks between demographic dissimilarity and in-role service performance between demographic dissimilarity and proactive customer service performance is assessed.

Figure 2.1 Research Model
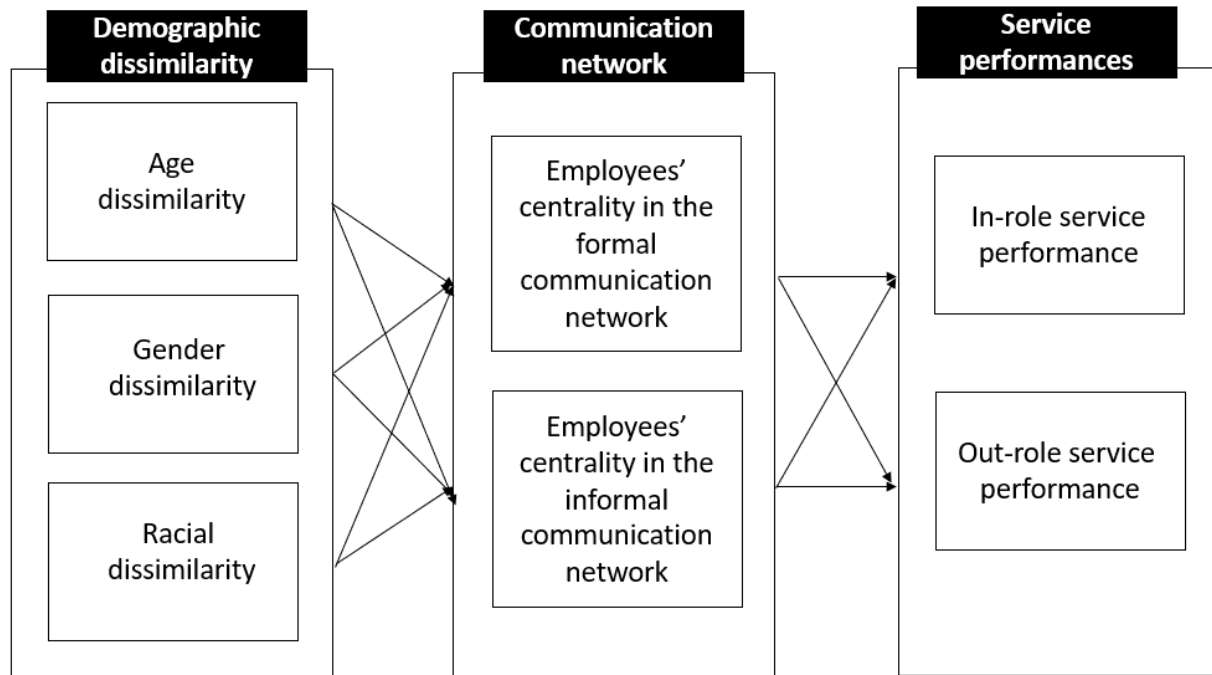
Chapter 3 - Methodology

This chapter indicates the study methodology used to empirically test the proposed hypotheses.

The data collection and analysis procedures are shown in Figure 3.1.

Figure 3.1 Data Collection and Analysis Procedures

Step 1: **Measurement Identification**	• Identify valid measurement items from the literature review
Step 2: **Survey Questionnaire Development**	• Modify the measurements for a hotel context • Refine the measurement items
Step 3: **Institutional Review Board Approval**	• Apply and obtain IRB approval
Step 4: **Pre-Test**	• Pre-test the survey instrument • Refine the measurement items
Step 5: **Data Collection**	• Collect data for the study
Step 6: **Data Analysis**	• Conduct the univariate analysis and present the descriptive statistics • Confirm the reliability and validity of the survey items and models • Conduct the network analysis using UCINET • Test the hypotheses using regression analysis

Measurement

Based on the literature review, validated survey items were selected for the survey and network analysis. For the survey, a seven-point Likert-type scale was used, with 1 for *strongly disagree*, 2 for *disagree*, 3 for *somewhat disagree*, 4 for *neither agree nor disagree*, 5 for *somewhat agree*, 6 for *agree*, and 7 for *strongly agree*. For the network analysis, a 6-point Likert-type scale was used, with 0 for *not at all*, 1 for *very infrequently*, 2 for *infrequently*, 3 for *sometimes*, 4 for *often*, and 5 for *very often*.

Demographic Dissimilarity

The demographic dissimilarity of age, gender and race was measured using Euclidean distance (*D*), which computes the difference between each person and all other members of the same team, following previous studies (Choi, 2007; Tsui, Egan, & O'Reilly, 1992). Each demographic dissimilarity score was created using a Euclidean distance (*D*) formula:

$$D = \left[\frac{1}{n} \sum (S_i - S_j)^2 \right]^{\frac{1}{2}}.$$

S_i represents an individual's value for a specific variable, S_j is the value for every other members of the same team, and n is the total number of team members. The age dissimilarity score was measured by years of age. S_i is a focal individual's age, S_j is other team members' ages, and n is the total number of employees in the work unit. For example, in a four-person team with employees who are 24, 28, 30, and 50 years old, the 50-year-old person's age dissimilarity score is $\{1/4[(50 - 28)^2 + (50 - 30)^2 + (50 - 24)^2]\}^{1/2} = 19.75$. This number indicates that the 50-year-old employees' age dissimilarity score is high.

For the gender dissimilarity score, a value of 0 is assigned when an employee belongs to the same gender category as other employees in the work unit, and 1 is assigned otherwise. For example, if the focal employee is identified as male and the work unit is composed of one male and three females, the gender dissimilarity score for the male member is $\{1/4[1 + 1 + 1]\}^{1/2} =$ .87. The score ranges from a minimum of 0 (all team members belong to the same category) to a maximum of 0.99 (the sole minority member). Larger values indicate greater diversity within the work unit.

To measure racial dissimilarity score, a value of 0 is assigned when an employee belongs to the same racial group as other employees in the team, and 1 is assigned otherwise. For instance, if the focal employee is Asian, and the work unit is composed of three Caucasian and one Asian. The racial dissimilarity score for Asian employee is $\{1/4[1 + 1 + 1]\}^{1/2} = .87$.

Employees' Centrality in the Formal Communication Network

Employees' centrality in the formal communication network is calculated as the focal employee's in-degree centrality score in the formal communication network in a team. In-degree centrality is the extent to each employee exchanges information or resources regarding work with the focal employee (e.g., service issues, customer management, etc.). The focal employee's in-degree centrality is computed the sum of all other peers' rating of the focal employee. For example, as shown in Figure 3.2, the focal employee (T1) is in a central position within the formal communication network. This indicates that the team members are likely to talk to the focal person to exchange information or resources regarding work tasks (i.e., service issues, customer management, etc.). An employee who has a high level of in-degree centrality can be a

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social actor in the formal communication network who is connected to all other members in the network.

Each team member was asked to respond to the following question to measure employees' centrality in the formal communication network: "How often do you talk with this person about issues regarding work (e.g., directly related to getting your work done)?" using a 6-point scale ranging from 0 to 5 (0 = *not at all*, 1 = *very infrequently*, 2 = *infrequently*, 3 = *sometimes*, 4 = *often*, 5 = *very often*). A roster including all the names of team members was provided, and each individual was asked to respond to specific questions about each person only if the focal person currently knows him or her (Marsden, 1990). The value of in-degree centrality in the formal network of each employee was computed using the UCINET program. The weighted values to a respondent was summed using this program. All the measurement items are included in Table 3.1.

Figure 3.2 In-Degree Centrality in the Formal Network
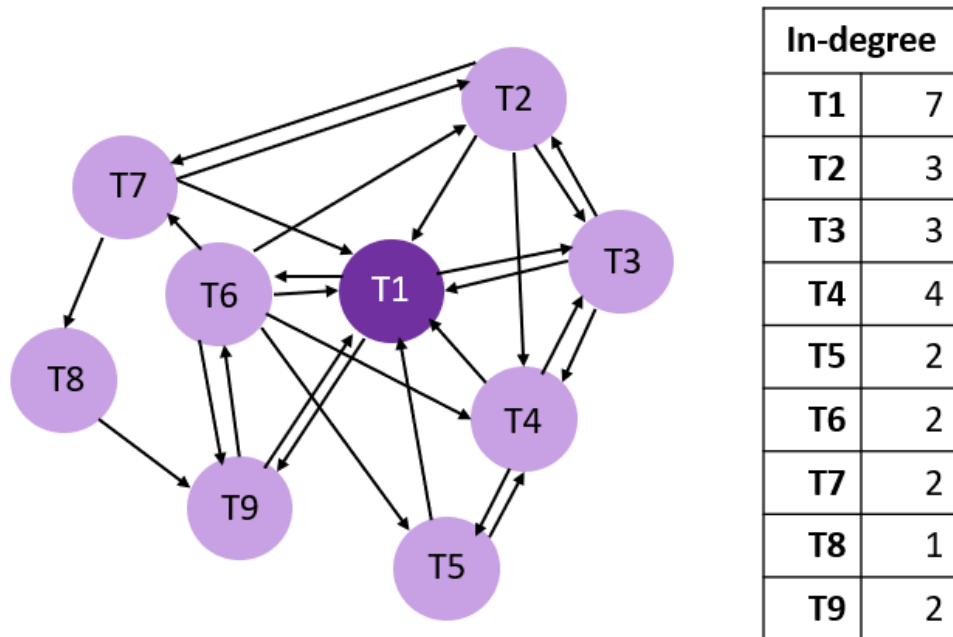
| In-degree	
T1	7
T2	3
T3	3
T4	4
T5	2
T6	2
T7	2
T8	1
T9	2

Employees' Centrality in the Informal Communication Network

Employees' centrality in the informal communication network is calclated as the focal employee's in-degree centrality score in the informal communication networks. Employees' in-degree centrality in the informal communication network indicates the extent to each employee discuss non-work topics (e.g., hobbies, schedules after work, etc.) with the focal employee. Each team member was asked to answer the following question to calculate employees' centrality in the informal communication network: "How often do you talk with this person about non-work issues (e.g., hobbies, schedules after work)?" using a 6-point scale ranging from 0 to 5 (0 = *not at all*, 1 = *very infrequently*, 2 = *infrequently*, 3 = *sometimes*, 4 = *often*, 5 = *very often*; Corey, 2008). Following the same procedure which is used to compute the centrality in the formal communication network was used to measure employees' centrality in the informal communication network. Table 3.1 provides all measurement items for employees' centrality in the informal communication network.

In-Role Service Performance

In-role service performance was measured with seven items adapted from Bettencourt and Brown (1997). These seven items measure performance based on in-role behaviors following the responsibilities assigned as part of the employee's position. Role-prescribed service performance was computed by mean. Previous studies have represented Cronbach's alphas of .86 (Dewitt, 2004) and .83 (Raub & Robert, 2010). The survey items are included in Table 3.1.

Proactive Customer Service Performance

Proactive customer service performance was measured with six items developed by Bettencourt and Brown (1997). Proactive customer service performance represents service performance based on discretionary behaviors that are not included in an employee's job duties or responsibilities (Van Dyne & LePine, 1998). Previous studies have represented Cronbach's alphas .86 (Raub & Lia, 2012) and .85 (Lau et al., 2017). Table 3.1 lists all survey items for proactive customer service performance.

Demographic Information

As for demographic information, gender (female vs male), age, job tenure in the current hotel, job tenure in the hospitality industry, department (front-desk, housekeeping, food and beverage, banquet, administrative department, and maintenance), employee status (full-time vs part-time), marital status (married, single, and prefer not to answer), and ethnicity (Caucasian, Hispanic, African American, Asian, Native American, and others) were included.

Control Variables

Job tenure in the current hotel and employment status (full-time vs part-time) were included as control variables that possibly affect the relationship between demographic dissimilarity and communication behavior (Marineau, Labianca, & Kane, 2016). Managerial position (supervisor vs subordinate) was controlled because managerial position may affect the communication network (Venkataramani et al., 2016). Lastly, team size was included as a control variable because of variations in the network size across teams (Venkataramani et al., 2016). The control variables are included in Table 3.1.

Table 3.1 Descriptions of Measurement

Dimensions	Source	Measures
Age dissimilarity	Tsui, Egan, & O'Reilly (1992)	Age in years The value was converted via Euclidian *D*
Gender dissimilarity	Tsui, Egan, & O'Reilly (1992)	Male = 0, Female = 1 The value was converted via Euclidian *D*
Race dissimilarity	Blau (1977)	African American = 1, Causcasian =2, Hispanic = 3, Asian = 4, Native American = 5, Others = 6 The value was be converted via Euclidian D
Employee's centrality in the formal communication network	Morrison (2002)	How often do you talk with *this person* about issues regarding work (e.g., directly related to getting your work done?)
Employee's centrality in the informal communication network	Kilduff & Krackhardt (1994)	How often do you talk with *this person* about issues regarding non-work (e.g., hobbies, schedule after work)?
In-role service performance	Bettencourt and Brown (1997)	1. I perform all those tasks for guests that are required of him/her. 2. I meet formal performance requirements when serving guests. 3. I fulfill responsibilities to guests as expected by management. 4. I help guest with those things that are necessary and expected. 5. I adequately complete all expected guest service behaviors. 6. I fulfill responsibilities to guests as specified in his/her job description.

Table 3.1 Descriptions of Measurement (Continued)

Proactive customer service performance	Bettencourt and Brown (1997)	1. I voluntarily assist customers even if it means going beyond my job requirements. 2. I willingly go out of my way to make a guest satisfied. 3. I often go above and beyond the call of duty when serving customers. 4. I help customers with problems beyond what is expected or required of him/her. 5. I frequently go out of the way to help hotel guests. 6. I often serves customers in a manner that exceeds his/her formal job requirements.
Control variables	Marineau et al. (2016) Venkataramani et al. (2016)	Job tenure in the hospitality industry, Job tenure in the current hotel, employment status, managerial position, and team size
Demographic information		Gender (female vs male), age, job tenure in the current hotel, job tenure in the hospitality industry, department (front-desk, housekeeping, food & beverage, banquet, administrative department and maintenance), employee status (full-time vs part-time), marital status (married, single, either of them, and prefer not to answer), and ethnicity (Caucasian, Hispanic, African American, Asian, Native American, and others)

Pre-Test

A pre-test was conducted to clarify the survey items. For the pre-test, the surveys were sent to a total eight faculties and graduate students in hospitality management program who had at least 2 years hotel work experience. They reviewed the survey items for fitness of the scale

and question. As a result, several items were slightly modified as followed by their recommendation. For example, one question for informal communication network asked, "How often do you talk with this person about issues regarding non-work?" Several people suggested to add several examples of informal communication in order to make clear of the meaning of informal communication. Thus, the researcher added the examples of informal communication "How often do you talk with this person about issues regarding non-work (e.g. hobbies, schedule after work)?"

Sample

The sample for the current study consists of employees currently working at mid-scale hotels in the mid-western areas of the United States. This study focuses on all entry-level employees and managers from different team including front desk, housekeeping, engineering, restaurants, banquet, sales and marketing, and human resource.

G*Power (3.1.9.2) was used to calculate the minimum sample size for the current study. The results show that the minimum sample size for this study is 100 employees, because the proposed model has seven predictors. For the network analysis, a minimum of three team members on each team is needed to measure in-network centrality, and there is no maximum number of team members. Employees from eleven teams were invited to participate in this survey.

Data Collection Procedures

Before the data collection procedure, an Institutional Review Board (IRB) application for the use of human subjects in research was submitted for approval. Upon receiving IRB approval (See Appendix A), data collection was initiated. This study targeted 10 hotels located in Mid-

eastern areas. An email was sent to general managers in the hotels to obtain approval for

collecting data from hotel employees. The email contained information for the potential

respondents regarding the main purpose of this study, and indicated that participation in this

study was voluntary, participants' responses were seen only by researchers, and the results

remain confidential. As a result, three hotels agreed to participate in data collection for this

study. With the assistance of the general manager or human resource manager, the employee

information including first names, teams, and positions was collected. As can be seen in Table

3.2, a name roster was created to develop the matrix for calculating in-degree network centrality.

Table 3.2 Name Roster Example

	Question Informal communication network (Do you talk with this person about issues at work that may not be directly related to getting your work done, (e.g., gossip)?)
Employee name 1	0
Employee name 2	2
Employee name 3	3
Employee name 4	5
Employee name 5	1
Employee name 6	1

Note. 0 = Not at all, 1 = Very infrequently, 2 = Infrequently, 3 = Sometimes, 4 = Often, 5 = Very often

A cover-letter and questionnaire used in this study are included in Appendix B. The

researcher gave the questionnaires and envelops to the HR manager or general managers, and

they distributed the paper/pencil surveys to each team manager. They then provided surveys to

their team members. The employees were asked to return their questionnaires in the sealed

envelopes to the mailbox that the researcher provided. After five days, the researcher visited the

mailbox in each hotel and obtained the completed surveys. The participants were asked to write down their email addresses at the end of survey, and the researcher provided $10 e-gift cards as a reward.

Data Analysis

Prior to data analysis, data screening including normal distribution, missing data, and outliers was conducted. After data screening, a descriptive analysis was conducted using SPSS (21.0) to assess the mean and standard deviation of each construct (Trochim & Donnelly, 2007). Reliability scores on each construct was measured using Cronbach's alpha values (> 0.7; Cronbach, 1951).

In order to test the proposed model, confirmatory factor analysis (CFA) was run to verify the validity, reliability, and discriminant validity of the variables using AMOS for the first step. Reliability was checked based on the composite reliabilities (CR) value, which requires a score of 0.7 or higher (Hair, Black, Babin, & Anderson, 2010). To assess the convergent validity, the average variance extracted (AVE) was checked and the threshold is 0.5 (Hair et al., 2010).

In order to measure an employee's in-degree centrality in the formal and informal communication networks, social network analysis was conducted using the UCINET 6.101 software (Borgatti, Everett, & Freseman, 2002). Each team has its own matrix in the UCINET program. This matrix was used to measure each team member's in-degree centrality in the formal and informal communication networks. For example, if Team 1 has 7 employees, then an 8 x 8 matrix was created. Each cell in a row shows the in-degree centrality score for the column person (Y) in an 8 x 8 matrix.

After checking the reliability and validity of the constructs using CFA, the factor loading scores of the measurement items was used for further hypothesis test. In the main study, hierarchical multiple regression was performed using SPSS. All control variables were included in the first block. Using the SPSS PROCESS macro (Model 4), the mediating effect of centrality of the formal and informal communication networks on the relationships between independent variables (age, gender, and race dissimilarity) and dependent variables (in-role service performance, proactive customer service performance; Hayes, 2017) was explored.

Chapter 4 - Results

Demographic Profile of Respondents

Table 4.1 indicates demographic profile of survey respondents. Among 106 survey participants in the study, 66% were female and 61.3% were 18-29 years old, 17.9% were 30-39 years old. As for employees' tenure in the current hotel, 55.7% of employees have 1 or less work experience in the current hotel, 22.7% of employees has been employed for 2 – 3 years. As for employees' tenure in the hotel industry, 38.7% of employees have 1 or less work experience, 27.3% have employed for 2 – 3 years. Of the respondents, 33% of employees worked in housekeeping department, 19.8% worked in the front office and food and beverage department (17%). Most respondents (73.6%) were full-time employees and 65.1% of respondents were married. As for ethnicity, 62.3% of employees were Caucasian and 24.5% were Hispanic.

Table 4.1 Demographic Profile of Respondents (n = 106)

Characteristics	Frequency	Percentage
Gender		
Female	70	66%
Male	36	34%
Age		
18-29 years	65	61.3%
30-39 years	19	17.9%
40-49 years	12	11.3%
Older than 49 years	10	9.4%
Job tenure in the current hotel		
1 or less	59	55.7%
2 – 3 years	24	22.7%
4 – 5 years	13	12.2%

6 – 7 years	8	7.5%
7 years or more	2	1.9%
Job tenure in the hospitality industry		
1 or less	41	38.7%
2 – 3 years	29	27.3%
4 – 5 years	12	11.3%
6 – 7 years	11	10.4%
7 years or more	13	12.3%
Department		
House keeping	35	33%
Front-desk	21	19.8%
Food and beverage	18	17%
Banquet	13	12.3%
Administrative department	7	6.6%
Maintenance	4	3.8
Employee status		
Full-time	78	73.6%
Part-time	28	26.4%
Marital status		
Married	69	65.1%
Single	32	30.2%
Either of them	5	4.7%
Ethnicity		
Caucasian	66	62.3%
Hispanic	26	24.5%
African American	11	10.4%
Asian	2	1.9%
Others	1	0.9%

Constructs Validity and Reliability

Confirmatory factor analysis (CFA) was performed to verify discriminant validity and reliability. The results of CFA indicated a good fit of the model to the data (χ^2 (53) = 146.29, $p <$ .001, RMSEA = 0.01, CFI = 0.94). The root-mean square error of approximation (RMSEA) < .05 shows a good fit to the data (Kline, 2005). Comparative fit indices (CFI) and the non-normed fit index (NNFI) estimates of 0.9 or higher than 0.9 are considered to have a good fit (Hoyle & Panter, 1995). All the constructs' standardized factor loading showed good factor loadings which are higher than 0.7 (Anderson & Gerbing, 1988; Hair et al., 2010). Composite reliabilities of constructs ranged from 0.95 to 0.97, higher than the cut-off value of 0.7, indicating the reliability of the construct is satisfactory (Hair et al., 2010).

Table 4.2 Confirmatory Factor Analysis: Items, Loadings, AVE, and CR

Construct and Scale Item	Loading	AVE	CR
In-role service performance			
I perform all those tasks for guests that are required of him/her.	0.9	0.79	0.95
I meet formal performance requirements when serving guests.	0.89		
I fulfill responsibilities to guests as expected by management.	0.9		
I help guest with those things that are necessary and expected	0.89		
I adequately complete all expected guest service behaviors.	0.86		
I fulfill responsibilities to guests as specified in his/her job description.	0.88		
Proactive customer service performance			

I voluntarily assist customers even if it means going beyond his/her job requirements.	0.86	0.85	0.97
I willingly go out of my way to make a guest satisfied.	0.92		
I often go above and beyond the call of duty when serving customers.	0.94		
I help customers with problems beyond what is expected or required of him/her.	0.94		
I frequently go out of the way to help hotel guests.	0.93		
I often serve customers in a manner that exceeds his/her formal job requirements.	0.94		

Table 4.3 shows means, standard deviations, the average variance extracted (AVE), and bivariate correlations among variables used in the study. AVE for all the construct satisfied the threshold, higher than 0.5, which means that requirements for convergent validity was met (Hair et al., 2010). As for discriminant validity, the square root of AVE for each factor is greater than each correlation, securing the satisfactory discriminant validity (Fornell & Larcker, 1981).

Table 4.3 Means, Standard Deviation, and Correlations

	M	SD	AVE	1	2	3	4	5	6	7
1. AD	11.57	6.45								
2. GD	0.55	0.21		-0.10						
3. RD	0.51	0.32		0.32**	-0.09					
4. FC	20.39	11.79		-0.06	0.01	-0.21*			.	
5. IC	11.58	9.15		-0.16*	0.06	-0.23*	0.74**			
6. RP	4.83	1.15	0.79	-0.29**	-0.04	-0.27**	0.31**	0.33**		
7. PP	4.96	1.41	0.85	-0.33**	-0.08	-0.38**	0.38**	0.40**	0.62**	

Note. Response ranged from 1 to 7. M: Mean; SD: Standard Deviation; AVE: Average Variance Extracted. AD: Age dissimilarity; GD: Gender dissimilarity; RD: Racial dissimilarity; FC: Employees' centrality in the formal communication network; IC: Employees' centrality in the informal communication network; IP: Role-prescribed service performance; OP: Proactive customer service performance. * $p < .05$, ** $p < .01$

Hypotheses Test

The hierarchical multiple regression was used to test the proposed hypotheses. For this

analysis, demographic information including employee tenure in the current company,

managerial position (supervisor vs subordinate), team size, and employment status (full-time vs

part-time) were included in the first step. This study examined the direct effects of demographic

dissimilarities (i.e., age dissimilarity, gender dissimilarity, and racial dissimilarity) on

communication networks (i.e., formal communication network and informal communication

network). Finally, to test the mediating effects of communication networks, this study used a

process (Hayes, 2017) specifying a 95% confidence interval and 5000 bootstrapping re-samples.

Table 4.4 summarizes the results of regression. As can be seen, age dissimilarity was

negatively related to formal communication network ($\beta = -0.20$, $p < 0.05$), thus supporting

Hypothesis 1a. However, gender dissimilarity was not associated with formal communication

network ($\beta = -0.06$ $p = 0.51$), not supporting Hypothesis 1b. The results of regression analysis

revealed that the negative direct effect of racial dissimilarity on formal communication network

($\beta = -0.38$, $p < 0.01$), supporting Hypothesis 1c.

Table 4.4 Regression Results for Testing Direct Relationships between Demographic Dissimilarity and Formal Communication Network

	Formal communication network					
Variables	Model 1	Model2	Model 3	Model4	Model 5	Model 6
Control variables						
Tenure	-0.11	-0.03	-0.11	-0.09	-0.11	-0.11
Managerial position	0.18	0.19	0.18	0.18	0.18	0.16
Team size	0.30**	0.38**	0.30**	0.32**	0.30**	0.43**

Status	0.09	0.09	0.09	0.10	0.09	0.16
Independent variable						
Age dissimilarity		-0.20*				
Gender dissimilarity				-0.06		
Racial dissimilarity						-0.38**
F	4.40	4.29	4.40	3.59	4.40	7.43
Adjusted R^2	0.12	0.14	0.12	0.11	0.12	0.23

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

As can be seen in Table 4.5, a statistically significant negative relationship between age dissimilarity and informal communication network ($\beta = -0.27$, $p < 0.05$) was found after controlling four variables including tenure in current hotel, managerial position, team size, and employment status, supporting Hypothesis 2a. Gender dissimilarity was not related to informal communication network ($\beta = 0.02$, $p = 0.86$), thus failing to support Hypothesis 2b. Racial dissimilarity was negatively associated with informal communication network ($\beta = -0.38$, $p < 0.01$), thus supporting Hypothesis 2c.

Table 4.5 Regression Results for Testing Direct Relationships between Demographic Dissimilarity and Informal Communication Network

	Informal communication network					
Variables	Model 1	Model 2	Model 3	Model4	Model 5	Model 6
Control variables						
Tenure	-0.09	0.01	-0.09	-0.09	-0.09	-0.09
Managerial position	0.16	0.18	0.16	0.16	0.16	0.14
Team size	0.21	0.32	0.21	0.20	0.21	0.33
Status	0.15	0.15	0.15	0.15	0.15	0.22
Independent variable						
Age dissimilarity		-0.03*				

Gender dissimilarity					.02	
Racial dissimilarity						-0.38**
F	2.85	3.72	2.85	2.27	2.85	5.79
Adjusted R^2	0.07	0.12	0.07	0.06	0.07	0.19

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

As can be seen in Table 4.6, a statistically significant positive relationship between formal communication network and in-role service performance ($\beta = .32$, $p < .01$) was found, thus supporting Hypothesis 3a. This study found the positive relationship between formal communication network and proactive customer service performance ($\beta = .45$, $p < .01$), supporting Hypothesis 3b.

Table 4.6 Regression Results for Testing Direct Relationships between Formal Communication Network and Work Outcomes (In-role service performance and proactive customer service performance)

	Role-prescribed service performance		Proactive customer service performance	
Variables	Model 1	Model 2	Model 3	Model 4
Control variables				
Tenure	-0.10	-0.07	-0.15	-0.11
Managerial position	0.20	0.14	0.06	-0.02
Team size	-0.05	-0.15	-0.09	-0.23
Status	0.05	0.02	-0.07	-0.11
Independent variable				
Formal communication network		0.32**		0.45**
F	1.30	3.17	0.76	5.02
Adjusted R^2	0.01	0.09	-0.01	0.16

* $p < 0.05$, ** $p < 0.01$

As can be seen in Table 4.7, informal communication network is positively related to in-role service performance ($\beta = 0.33$, $p < 0.01$), supporting Hypothesis 4a. A positive direct relationship between informal communication network and proactive customer service performance ($\beta = 0.46$, $p < 0.01$) was found, thus supporting Hypothesis 4b.

Table 4.7 Regression Results for Testing Direct Relationships between Informal Communication Network and Work Outcomes (In-role service performance and proactive customer service performance)

Variables	In-role service performance		Proactive customer service performance	
	Model 1	Model 2	Model 3	Model 4
Control variables				
Tenure	-0.10	-0.07	-0.15	-0.12
Managerial position	0.20	0.14	0.06	-0.01
Team size	-0.05	-0.12	-0.09	-0.20
Status	0.05	0.00	-0.07	-0.14
Independent variable				
Informal communication network		0.33**		0.46**
F	1.30	3.47	0.76	5.41
Adjusted R^2	0.01	0.11	-0.01	0.18

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

In order to test mediating effects, this study used a process (Hayes, 2017) specifying a 95% confidence interval and 5000 bootstrapping re-samples. As can be seen in Table 4.8, the mediating effect of formal communication network on the relationship between age dissimilarity and in-role service performance ($\beta = -0.01$, LL, UL: -0.03, -0.001) was significant, supporting Hypothesis 5a. However, this study did not find the mediating effect of formal communication

network in the relationship between gender dissimilarity and in-role service performance (β = -0.11, LL, UL: -0.47, 0.12), not supporting Hypothesis 5b. Racial dissimilarity had a statistically significant indirect relationship with in-role service performance via formal communication network (β = -0.57, LL, UL: -1.06, -0.26), thus supporting Hypothesis 5c.

Table 4.8 Mediation Analysis Results with Bootstrapping (Demographic dissimilarity – Formal communication network – In-role service performance)

	Independent variables	**Bootstrapping**	**SE**	**95% CI (LL, UL)**
H5a	Age dissimilarity	-0.01	0.01	-0.03, -0.001
H5b	Gender dissimilarity	-0.11	0.14	-0.47, 0.12
H5c	Racial dissimilarity	-0.57	0.19	-1.06, -0.26

SE: standard error; LL = lower level of confidence interval; UL = upper level of confidence interval

As can be seen in Table 4.9, the mediating effect of formal communication network on the relationship between age dissimilarity and proactive customer service performance (β = -0.02, LL, UL: -0.04, 0.0005) was not significant, thus not supporting Hypothesis 6a. In addition, this study did not find the mediating effect of formal communication network in the relationship between gender dissimilarity and proactive customer service performance (β = -0.20, LL, UL: -0.72, 0.21), not supporting Hypothesis 6b. The current study found the significant mediating effect of the formal communication network in the relationship between racial dissimilarity and proactive customer service performance (β = -0.57, LL, UL: -1.01, -0.25), thus supporting Hypothesis 6c.

Table 4.9 Mediation Analysis Results with Bootstrapping (Demographic dissimilarity – Formal communication network – Proactive customer service performance)

	Independent variables	**Bootstrapping**	**SE**	**95% CI (LL, UL)**

H6a	Age dissimilarity	-0.02	0.01	-0.04, 0.0005
H6b	Gender dissimilarity	-0.20	0.24	-0.72, 0.21
H6c	Racial dissimilarity	-0.57	0.19	-1.01, -0.25

SE: standard error; LL = lower level of confidence interval; UL = upper level of confidence interval

Table 4.10 shows the meditating effect of informal communication network between demographic dissimilarity and in-role service performance. The mediating effect of informal communication network on the relationship between age dissimilarity and in-role service performance (β = -0.01, LL, UL: -0.03, -0.003) was significant, supporting Hypothesis 7a. This study could not find the mediating effect of informal communication network in the relationship between gender dissimilarity and in-role service performance (β = 0.03, LL, UL: -0.24, 0.33), not supporting Hypothesis 7b. However, this study revealed the significant mediating effect of the informal communication network in the relationship between racial dissimilarity and in-role service performance (β = -0.35, LL, UL: -0.73, -0.01), thus supporting Hypothesis 7c.

Table 4.10 Mediation Analysis Results with Bootstrapping (Demographic dissimilarity – Informal communication network – In-role service performance)

	Independent variables	Bootstrapping	SE	95% CI (LL, UL)
H7a	Age dissimilarity	-0.01	0.01	-0.03, -0.003
H7b	Gender dissimilarity	0.03	0.14	-0.24, 0.33
H7c	Racial dissimilarity	-0.35	0.16	-0.73, -0.01

SE: standard error; LL = lower level of confidence interval; UL = upper level of confidence interval

Table 4.11 shows the meditating effect of informal communication network between demographic dissimilarity and proactive customer service performance. The mediating effect of informal communication network on the relationship between racial dissimilarity and proactive customer service performance (β = -0.02, LL, UL: -0.05, -0.01) was significant, supporting

Hypothesis 8a. However, this study did not find the mediating effect of informal communication network in the relationship between age dissimilarity and proactive customer service performance ($\beta = 0.04$, LL, UL: -0.43, 0.52), not supporting Hypothesis 8b. This study found the significant mediating effect of the informal communication network in the relationship between racial dissimilarity and proactive customer service performance ($\beta = -0.58$, LL, UL: -1.09, -0.25), thus supporting Hypothesis 8c.

Table 4.11 Mediation Analysis Results with Bootstrapping (Demographic dissimilarity – Informal communication network – Proactive customer service performance)

	Independent variables	**Bootstrapping**	**SE**	**95% CI (LL, UL)**
H8a	Age dissimilarity	-0.02	0.01	-0.05, -0.01
H8b	Gender dissimilarity	0.04	0.24	-0.43, 0.52
H8c	Racial dissimilarity	-0.58	0.21	-1.09, -0.25

SE: standard error; LL = lower level of confidence interval; UL = upper level of confidence interval

Chapter 5 - Conclusions

In this chapter, the findings of this study are discussed based on the results of hypotheses tests. A summary of findings and both theoretical and practical implications is discussed, along with the study's limitations and suggestions for future research.

Summary of Findings

Age Dissimilarity and Communication Networks

This study found that age dissimilarity had a negative impact on formal communication network and informal communication network. Age dissimilarity results support the social identity perspective by finding the direct, negative links between age dissimilarity and formal and informal communication networks. Employees with greater age dissimilarity are less likely to be located in a central position of formal and informal communication networks. This negative impact of age dissimilarity is consistent with Kim, Behave, and Glomb's (2013) study which showed that age dissimilarity is positively related to emotional regulation. In addition, Avery et al's (2007) study found that perceived age similarity is positively related to higher level of employee engagement and satisfaction.

Gender Dissimilarity and Communication Networks

The current study did not find any significant relationship between gender dissimilarity and formal communication network and informal communication network. Contrary to our expectations, this study failed to find the significant direct or mediating relationship for gender dissimilarity. However, these findings are similar to diversity literature that has indicated weak evidence of the relation between gender dissimilarity and work outcomes (Williams & O'Reilly,

1998). Williams and O'Reilly's (1998, p. 106) study suggested that "female-dominated groups are less likely to socially isolate males who are in the minority." In our sample, most team members are female (66%) who may not be involved in gender-oriented social categorization processes. To reconfirm this finding, future studies need to focus on male-dominated job settings.

Racial Dissimilarity and Communication Networks

Racial dissimilarity was negatively related to both formal communication network and informal communication network. This study found a significant, direct, negative effect of racial dissimilarity on formal and informal communication networks. In addition, formal and informal communication networks mediate the relationship between racial dissimilarity and in-role and proactive customer service performance. Specifically, the findings of this study showed that racially in-group members have more communication with team members when racial dissimilarity is high. Overall, the findings of this study are similar with Devine et al.'s (2007) finding that racially diverse employees face more issues regarding racism and harassment. In addition, Christensen-Hughes (1992) found negative impacts of culturally diverse employees on work outcome in hotels. Negative effects of employee racial diversity originate from language barriers and cultural differences. While several previous studies have suggested negative impacts of racial diversity in the hospitality context, little research exists that examines the direct relationships among racial dissimilarity and employee communication networks. Thus, the results of this study can help further advance theories about diversity in the context of hospitality.

Communication Networks and Service Performances

A statistically significant, positive relationship between formal communication networks and in-role service performance was found. This study found a positive relationship between formal communication network and proactive customer service performance. Informal communication network was positively related to in-role service performance, and a positive, direct relationship between informal communication network and proactive customer service performance was found.

Mediating Role of Communications

As for age dissimilarity, formal communication network was identified as a mediator between age dissimilarity and in-role service performance. However, this study did not find meaningful mediating effect of formal communication network between age dissimilarity and proactive customer service performance. Informal communication network was examined as a significant mediator between age dissimilarity and in-role service performance and between age dissimilarity and proactive customer service performance. As for gender dissimilarity, this study did not find the mediating effect of formal communication network between gender dissimilarity and in-role service performance and between gender dissimilarity and proactive customer service performance. In addition, informal communication network was not identified as a significant mediator between gender dissimilarity and in-role service performance and between gender dissimilarity and proactive customer service performance. As for racial dissimilarity, informal communication mediates the relationship between racial dissimilarity and in-role service performance and between racial dissimilarity and proactive customer service performance. Furthermore, formal communication was identified as a mediator between racial dissimilarity

and in-role service performance and between racial dissimilarity and proactive customer service performance.

Theoretical Implications

Using social identity theory, this study examined the effect of demographic diversity on job performance. While previous findings showed the mixed positive and negative effects of diversity on job performance (Bell et al., 2011; Joshi & Roh, 2009; Stahl et al., 2010; Webber & Donahue, 2001), the current study found negative impacts of demographic diversity on job performance in the context of hospitality businesses. In particular, this study applied the individual level of diversity to examine the negative impact of individual dissimilarity with other team members on work outcomes. This study supports the social identity theory that in-group members are less likely to interact with out-group members.

Another conceptual implication of this study is the extension of JD-R theory. Job resources consist of psychological, physical, organizational, and social elements. This study proposes an employee's central position in the communication network can be one of social resources. This social resource can be embedded in a central position of communication networks, where a focal employee can implement these resources when interacting with other employees. By explaining the relationship between an employee's central position in the communication network and job performance, this study can add meaningful insight to JD-R theory, explaining that communication networks serve as social resources to enhance or reduce employee performance.

Third, the current study indicates some unique relational mechanisms affecting job performance. Prior studies have focused on conflict (Vodosek, 2007), cooperation (Chatman & Flynn, 2001), and reflexivity (Schippers, Den Hartog, Koopman, & Wienk, 2003) to explain the

underlying mechanism of employee job performance. This study initially proposes a view that employee communication behaviors can explain the relationship between demographic diversity and work performance. Furthermore, linking two different communication behaviors (i.e., formal and informal communication) conceptually and empirically is an advanced approach to promote theory building. While past research has focused on formal communications (Venkatamani & Tangirala, 2010), this study examined how demographic diversity affects both formal communication and informal communications. Employees' informal relationships can help access additional resources, which can be a basis for improving extra-role performance.

Finally, the current study contributes to extending the broader network literature by investigating how hospitality employees' formal and informal communication may affect job performance. Compared to previous studies that focuses on attributional factors (e.g., attitude) (Venkatamani et al, 2017), network theorist claims that an individual's behavior is best explained by structural positions in the network (Borgatti, Brass, & Halgin, 2014). Using social network analysis, the current study can capture more precise employee communication behaviors in a team. Specifically, this study examined the communication network by counting the incoming ties from other co-workers of the focal person. With this approach, the current study can picture how in-group employees are placed in central communication networks. Going beyond this, the results of this study suggest that individuals' structural positions affect their access to social resources, which can be useful information regarding opportunities and choices, thus importantly affecting work performance.

Practical Implications

Diversity is an on-going and inevitable trend in globalization. With the increasing number of diverse employees in hospitality workplaces (Bureau of Labor Statistics, 2019), understanding its characteristics and impacts is critical. Considering the significance of employee diversity issues in the hospitality industry, the current study was purposed to examine how diversity affects job performance. As a result of the current study, demographically dissimilar employees are less likely to communicate with their peers, thus affecting job performance negatively. Given this negative impact of diversity, HR managers should be aware of the negative impact of demographic diversity in order to secure a long-term success of their business (Boehm, Kunisch, & Boppel, 2011). Practitioners need to implement minority-inclusive HR practices, which can be a meaningful tool in managing diversity in workplaces. Specifically, minority-inclusive HR practices may include mentoring demographic minority employees, ensuring fair treatment, and providing equal access to opportunity. Although these practices should not be regarded as an exhaustive list, it can be a good starting point in order to effectively manage diverse employees.

Regarding the negative impact of demographic dissimilarity on service performance, hotel practitioners need to understand the difficulties of minority employees and find the ways to reduce their obstacles. For example, implementing minority-inclusive HR practices can be a meaningful tool in managing diversity in workplaces. Specifically, minority-inclusive HR practices may include mentoring demographic minority employees, ensuring fair treatment, and providing equal access to opportunity. Although these practices should not be regarded as an exhaustive list, it can be a good starting point in order to effectively manage diverse employees.

The findings of the study indicate that age dissimilarity and racial dissimilarity have a negative impact on formal and informal communication network. Specifically, in order to reduce a negative impact of age dissimilarity, companies can provide employee pairing program to facilitate a communication between younger and older employees. For example, every month, each pairing team have a challenge to solve some problems which possibly occur in the hotel properties. The older employees are expected to have more experiences and interpersonal skills while younger employees to have a better technological knowledge. They can teach each other from different perspectives in order to provide better solutions. As for reducing a negative impact of racial dissimilarity, by having diversity management trainings, employees should fully understand that our beliefs and values are different from others. Based on an understanding of individual differences, each employee should have specific knowledge and skills that are helpful to effectively talk with others. Using the training programs, employees can understand the value of diversity among individuals, effectively respond to cultural differences, and gain some skills to manage the dynamics of cultural differences.

The results of this study inform that formal and informal communication networks are important mediators to link between demographic diversity and job performance. Specifically, this study found that demographically minority employees have lower incoming communication ties (e.g., rarely have communication with other employees) and lower job performance than demographically majority employees. Hospitality HR managers need to be aware of the importance of group communication and try to encourage communication among diverse employees. Managers can try to include demographically minor employees in group conversations and play the role of mediator to connect these minority employees to majority employees. Some team-building trainings will be effective. For example, outdoor recreational

training can be utilized to enhance communication among diverse team members. HR manager can discuss the training setting with training facilitators in order to increase interactions between minority employees and majority employees. In training sessions, minority employees can play important roles in team-building games so that other team members should have more communication with them and have more chances to understand their differences.

Furthermore, this study conducted social network analysis to investigate employees' communication behaviors. Hospitality practitioners can use this method to find meaningful employee relationships in terms of communication, conflicts, and peer relationships. Specifically, surveys can be used to examine the relationships among team members using a name roster. Using excel and visualizing programs (e.g., UCINET), practitioners can easily create the relational map within a group. By visualizing relationships among team members, practitioners can gain clearer formal and informal communication networks, regarding how employees are connected to one another in communication networks, and who the main employees and who the isolated employees are in its communication.

Limitations and Suggestions for Future Research

This study has several limitations that need to be acknowledged. First, one limitation of this study concerns the generalizability of the findings with regard to other hospitality or cultural settings. The current study collected data from a total of 106 hotel employees including both supervisors and line employees working in budget or mid-sized hotels in the U.S. Potentially, the specific campus towns in U.S. may have an effect on the demographic diversity and its impacts. The findings of the present study may not be applicable to other hospitality settings, including restaurants, or other cultures, including Asia or Europe. For example, in future study, it would be

meaningful to conduct this study in different contexts or other cultures. Furthermore, it would be important to consider that this study focused only on small to mid-sized hotels with no hotel having more than 100 employees. If future studies include hotel companies above that size, they will further improve the generalizability of the results.

Second, using social network analysis, the current study highlights certain unique communication network mechanisms underlying demographic diversity and job performance. However, the current study was unable to identify the moderating variables to mitigate the negative impacts of demographic dissimilarities. Thus, it would be meaningful for future study to empirically test the potential moderating variables associated with employee personality (e.g., openness, magnanimity, etc.) or leadership types (e.g., shared leadership, inclusive leadership, etc.).

Third, the current study may have a social desirability issue in measuring employee in-role and proactive customer service performance. Although this study significantly reduced the social desirability issue by asking all other team members in the data collection process, self-report questionnaires to measure in-role and proactive customer service performance can be one of limitations of the study. Self-reported answers have a possibility to have a social desirability bias, for example, it may have been confounded by the over-reported answers (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). In order to reduce the social desirability issue, researchers may use different data sources to measure focal employees' attitudes or behaviors. By using these multiple data sources, the social desirability bias can be ruled out. For example, researchers may ask hotel companies to obtain archival data from hotel organizational records or ask supervisors to measure their subordinates' performance one by one.

Fourth, the present study looks only at individual network characteristics as mediators. However, it is possible to view the impact of communication networks on job performance as team-level and dyadic-level networks. For future research, it would be meaningful to identify such multi-level analyses in the proposed model.

In addition, the current study only examined the formal and informal communication network. In future research, other types of networks can be suggested to examine the relationship between demographic diversity and job performance. For example, emotional regulation networks can be examined to explain why demographic dissimilar employees have lower job performance.

Finally, the findings of this study may not imply causality because data of this study collected only at one time. Although many previous studies provide the possible relationships among the variables used in this study, the cross-sectional design has a limitation in coming to strong conclusions about the causal relationships. Therefore, in future research, the findings of this study can validate using cross-lagged or longitudinal designs over time and provide further information to establish the causality of the relationships.

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Appendix A – IRB Approval

TO: Dr. Jichul Jang
        Hospitality Management
        105 Justin Hall

FROM: Rick Scheidt, Chair
        Committee on Research Involving Human Subjects

DATE: 02/10/2020

RE: Proposal #8933.1, entitled "The impact of demographic dissimilarity on in-role and out-role service
        performances; A social network perspectives."

        MODIFICATION OF IRB PROTOCOL #8933, ENTITLED, "How leadership network
        affects the relationship between workforce diversity and team performance?"

        EXPIRATION DATE: 09/13/2020

The Committee on Research Involving Human Subjects (IRB) has reviewed and approved the
request identified above as a modification of a previously approved protocol. **Please note that
the original expiration remains the same.**

All approved IRB protocols are subject to continuing review at least annually, which may include
the examination of records connected with the project. Announced in-progress reviews may also
be performed during the course of this approval period by a member of the University Research
Compliance Office staff. Unanticipated adverse events involving risk to subjects or to others
must be reported immediately to the Chair of the IRB, and / or the URCO

It is important that your human subjects activity is consistent with submissions to funding /
contract entities. It is your responsibility to initiate notification procedures to any funding /
contract entity of any changes in your activity that affects the use of human subjects.

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Appendix B – Survey questionnaire and cover letter

COMMUNICATION NETWOKR AND
TEAM PERFORMANCE
IN THE HOTEL INDSUTRY
[DATE]

Department of Hospitality Management
College of Education and Human Ecology
Kansas State University

Dear Respondent,

 I am a graduate student in the Department of Hospitality Management at Kansas State University. I am doing this research as part of my studies in the Department of Hospitality Management. Since you are an important employee of this hotel, I am requesting your involvement in this study by completing the enclosed questionnaire. This survey will take 10 minutes to complete. We expect that the result of this survey will provide hotel managers with suggestion for communication network on team outcomes. Your participation in this survey is completely voluntary. You may stop completing survey or refuse the survey or at any time without no penalty. If you choose to participate in this survey, please take a few minutes to answer each question on the survey as completely and accurately as possible. Your responses will be processed confidentially. Only two researchers will have access to data and hotel personnel will be not allowed to data. Researchers will secure data in a locked file cabinet and password-protected computer. Once we have finished the data collection and we will destroy any identifying information. No personal data will be reported. Only aggregated response will be reported as a summary form. Should you have any questions regarding the survey, please contact me at juhyun@ksu.edu or 785-770-5396. I also have included the contact information of Institutional Review Board (IRB) committee chair, Dr. Rick Scheidt, if you have any further concern or questions, you can contact him at rscheidt@ksu.edu. If participants are interested in the results of this study, a summary of results will be available at K-state Research Exchange (http://krex.k-state.edu/dspace/).

 All survey respondents will receive $10 Amazon gift card. Please provide your contract information (email address) at the end of the survey. This contract information will be aggregated separately from your other responses to ensure respondent anonymity.

Sincerely,

Juhyun Kang Ph.D. Student Hospitality Management Kansas State University	Dr. Jichul Jang Assistant professor Hospitality Management Kansas State University

1. In this section, we are interested in the different interactions you might have with your coworkers.

Each person that you know, indicate, by using the rating scales
provided below, the extent to which the person falls into each category.

Note: **It is okay to enter a number in more than one category for a particular coworker.**
If a particular coworker does not fall into the category, enter a zero (0).

I. Formal: How often do you talk with this person about issues regarding work (e.g., directly related to getting your work done)?
II. INFORMAL: How often do you talk with this person about issues regarding non-work (e.g., hobbies, schedule after work)?

	I. Formal communication network	II. Informal communication network
	⓪= Not at All ①= Very Infrequently ②= Infrequently ③= Sometimes ④= Often ⑤= Very Often	⓪= Not at All ①= Very Infrequently ②= Infrequently ③= Sometimes ④= Often ⑤= Very Often
Employee Name 1	2	1
Employee Name 2		
Employee name 3		
Employee name 4		
Employee name 5		
Employee name 6		

For each item identified below, circle the number
to the right that best fits based on your experience in hotel industry.

Items	Never	Rarely	Occasionally	Sometimes	Frequently	Usually	Every time
I perform all those tasks for guests that are required of him/her.	1	2	3	4	5	6	7
I meet formal performance requirements when serving guests.	1	2	3	4	5	6	7
I fulfill responsibilities to guests as expected by management.	1	2	3	4	5	6	7
I help guest with those things that are necessary and expected	1	2	3	4	5	6	7
I adequately complete all expected guest service behaviors.	1	2	3	4	5	6	7
I fulfill responsibilities to guests as specified in his/her job description.	1	2	3	4	5	6	7

Items	Strongly disagree	disagree	Somewhat disagree	Neutral	Somewhat agree	Agree	Strongly agree
I voluntarily assist customers even if it means going beyond his/her job requirements.	1	2	3	4	5	6	7
I willingly go out of my way to make a guest satisfied.	1	2	3	4	5	6	7
I often go above and beyond the call of duty when serving customers.	1	2	3	4	5	6	7
I help customers with problems beyond what is expected or required of him/her.	1	2	3	4	5	6	7
I frequently go out of the way to help hotel guests.	1	2	3	4	5	6	7
I often serve customers in a manner that exceeds his/her formal job requirements.	1	2	3	4	5	6	7

1. What is your gender?

    ○ Female
    ○ Male
    ○ Others

2. What is your age in years?

    [   ]

3. Which of the following best describes your ethnicity?

    ○ African American
    ○ Caucasian
    ○ Hispanic
    ○ Asian
    ○ Native American
    ○ Other

4. What is your marital status?

    ○ Single
    ○ Married
    ○ Other (Please specify)

5. How many years have you been working in this company?

    (   ) years

6. How many years have you working in the hospitality industry?

    (   ) years

7. What is the title of your current position? (Manager, Assistant manager, employee, etc.)

    [   ]

8. What is your employment status?

    (Workers are considered to be part-time if they commonly work fewer than 30 hours.)

    ○ Full time
    ○ Part time

9. Please, write down your first name and email address to receive $10 Amazon gift card.

First name:	Email address: