N E T W O R K S

A report on relationships at work
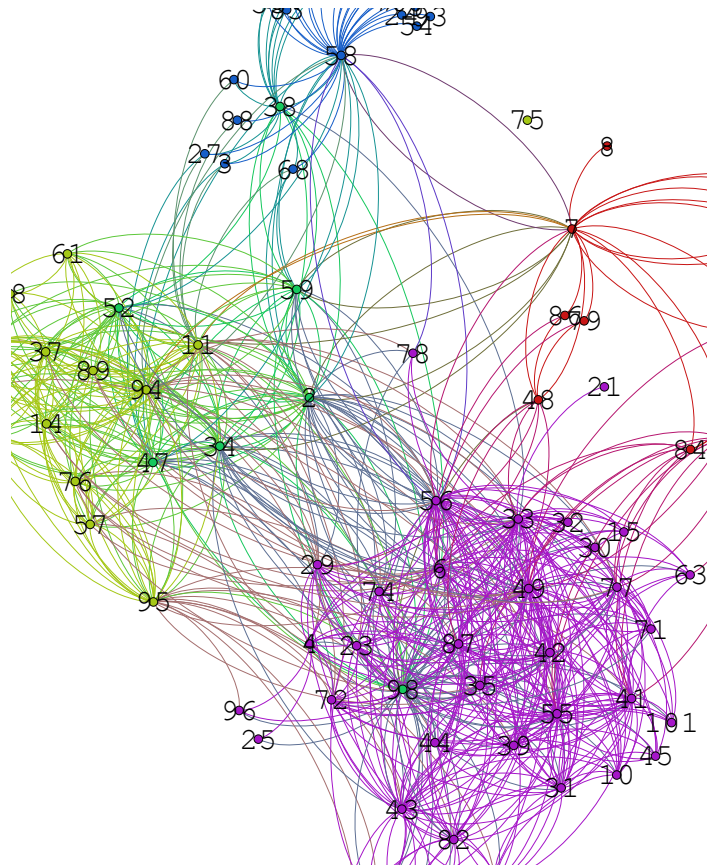
ABC INTERACTION REPORT

Table of Content

Guidelines

This report provides an **overview** of the social network data for the team assignment. The data only contains strong relationships. These are frequent to very frequent interactions. All figures are also available in the data pack folder. In addition, the data pack folder contains also **more information.** You should be reviewing these files, and ensure that you understand the data that is present in them:

1. Case description
2. Culture Report
3. Engagement Report
4. SNA report
5. Social network graph
6. Density tables
7. SNA metrics
    1.This file can be used to get a better understanding of the various people and their position in the network

Background

ABC is a division of a large, national organization. It is a high tech research group with about 3000 employees located on the east coast with most employees located in 2 primary locations relatively close to each other. Some of the employees spend most of their time with their customers and are considered 'embedded' workers.

For business reasons affecting the entire organization, it was decided that Division ABC must move to a new location about 4 hours away by car, (neither location easily accessible by plane) within the next 2-5 years. Many of the employees are long term employees of the organization and have lived in their small city for many years and not interested in moving to the new location. There is also a general perception that the people in the new city are unfriendly.

In addition to having a workforce of long tenure, Division ABC also has an aging workforce – many people are retiring or about to retire (projected 50% over the next 3-4 years), and little knowledge capture has taken place in the past. The division has many tools to help them capture and share knowledge but they have not been widely adopted. There is no consistent knowledge management strategy and the usage of data bases and knowledge repositories is different in each part of the organization.

While it is a goal to increase the number of young people that are brought on board, they recognize that their hiring process is very slow and they face an imminent shortage in the talent pipeline. Most of their onboarding process is focused on process/procedure training as well as an ad hoc effort to understand where intellectual capital resides. It has been noted that it takes a long time to reach "proficiency" when new folks are brought on board. Mentoring has been recognized as a valuable process for knowledge transfer but there is no formal program to identify and support these relationships.

The culture does not embrace remote (virtual) working and is currently not generally available to most of the workers. There is one department that spends most of their time with the customers which contributes to a lack of awareness of what everyone is doing. This is a very hierarchical organization, both structurally as well as culturally.

The division leaders have clearly stated that they cannot maintain the "status quo" – they must continue to find ways to innovate with leading-edge technology and research. As part of the move, they expect to lose a significant percentage of their workforce due to people simply choosing not to move (rather than any deliberate downsizing). The leaders anticipate that they need to recruit at a much higher rate and also reduce the amount time it takes to bring new engineers up-to-speed by a matter of years.

Social Network Metrics per Department

Communication Network

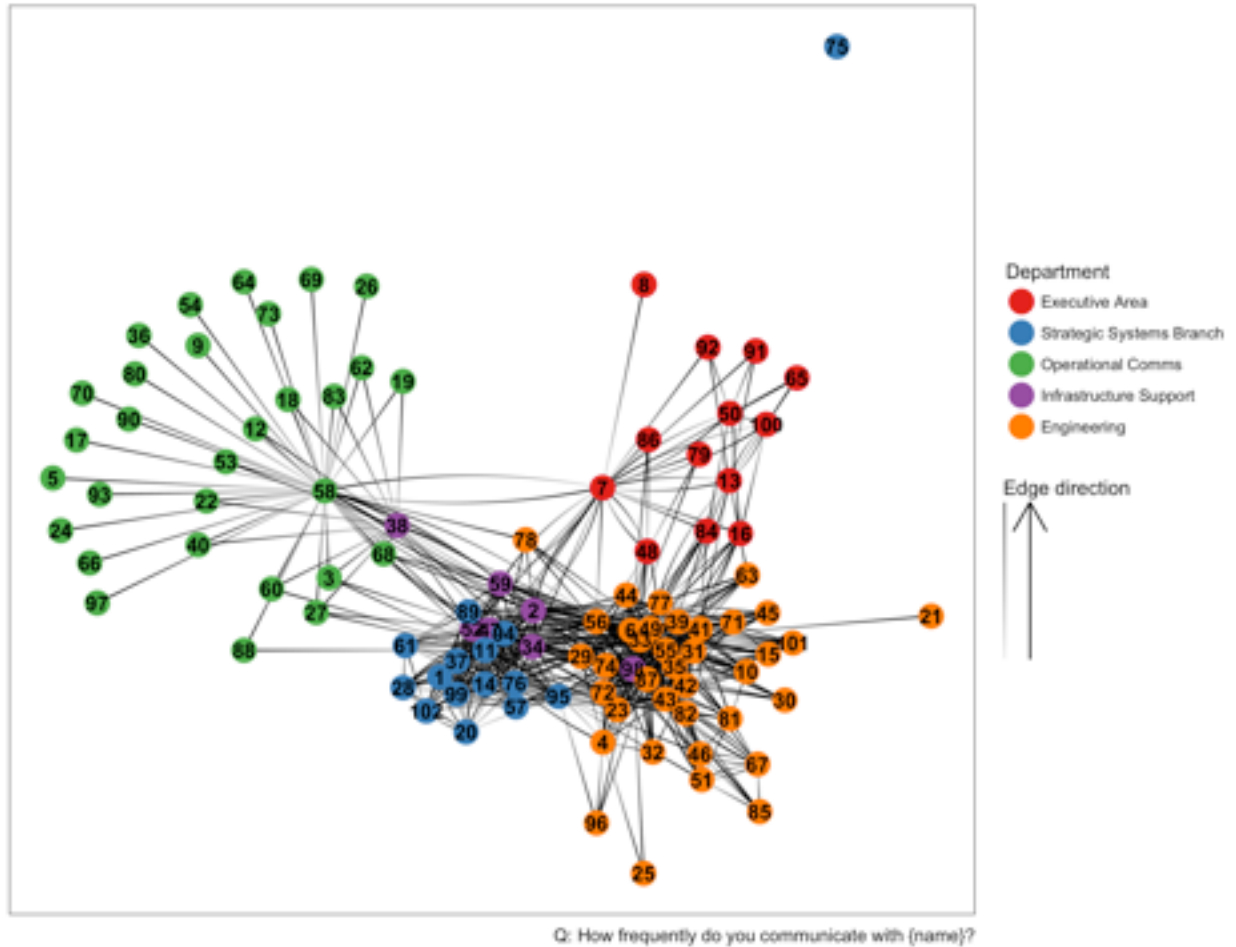|	Company	Executive Area	Strategic Systems	Operational Comms	Infrastructure Support	Engineering
Density	0.08	0.74	0.22	0.49	0.03	0.23
Average path length	2.34	1.26	1.42	1.43	1.00	1.74
Modularity	0.12	0.00	0.08	0.00	0.00	0.02
Betweenness	0.11	0.15	0.17	0.19	0.00	0.08
Degree	0.25	0.31	0.48	0.47	0.48	0.33
Size	102.00	7.00	13.00	15.00	30.00	37.00
Number of Edges	816.00	31.00	35.00	103.00	29.00	312.00

Information Exchange Network

	Company	Executive Area	Strategic Systems	Operational Comms	Infrastructure Support	Engineering
Density	0.04	0.60	0.10	0.30	0.02	0.12
Average path length	2.84	1.33	1.59	1.65	1.00	2.27
Modularity	0.18	0.00	0.13	0.00	0.00	0.26
Betweenness	0.12	0.21	0.06	0.53	0.00	0.13
Degree	0.18	0.28	0.30	0.67	0.23	0.30
Size	102.00	7.00	13.00	15.00	30.00	37.00
Number of Edges	413.00	25.00	15.00	63.00	14.00	165.00

Social Network Graphs

Communication Exchange Network (strong ties)
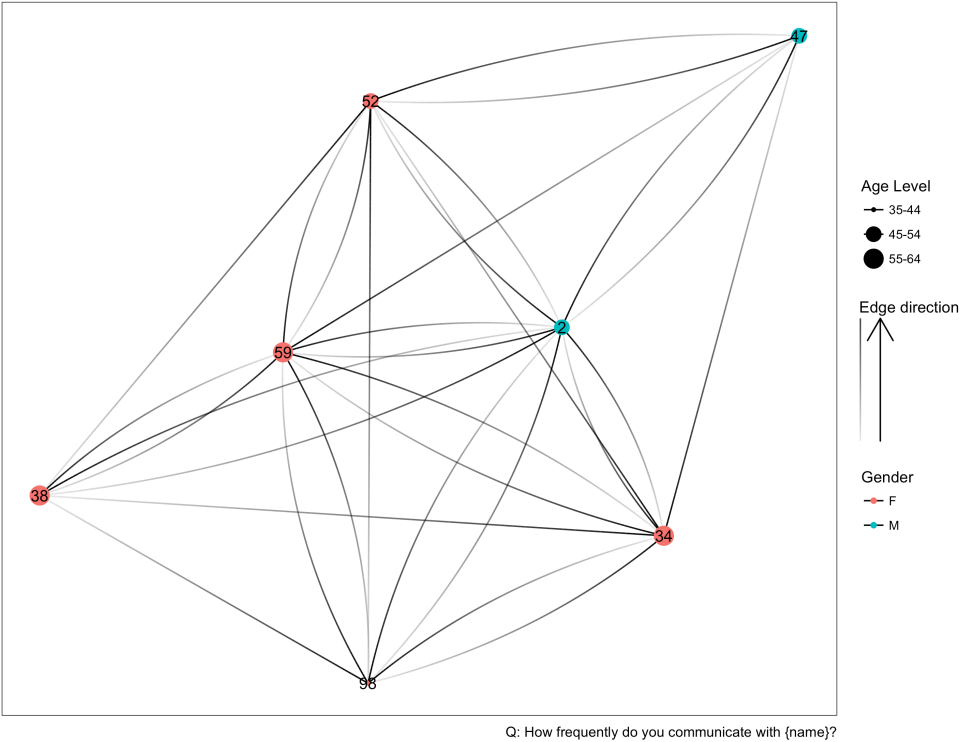

Q: How frequently do you communicate with {name}?

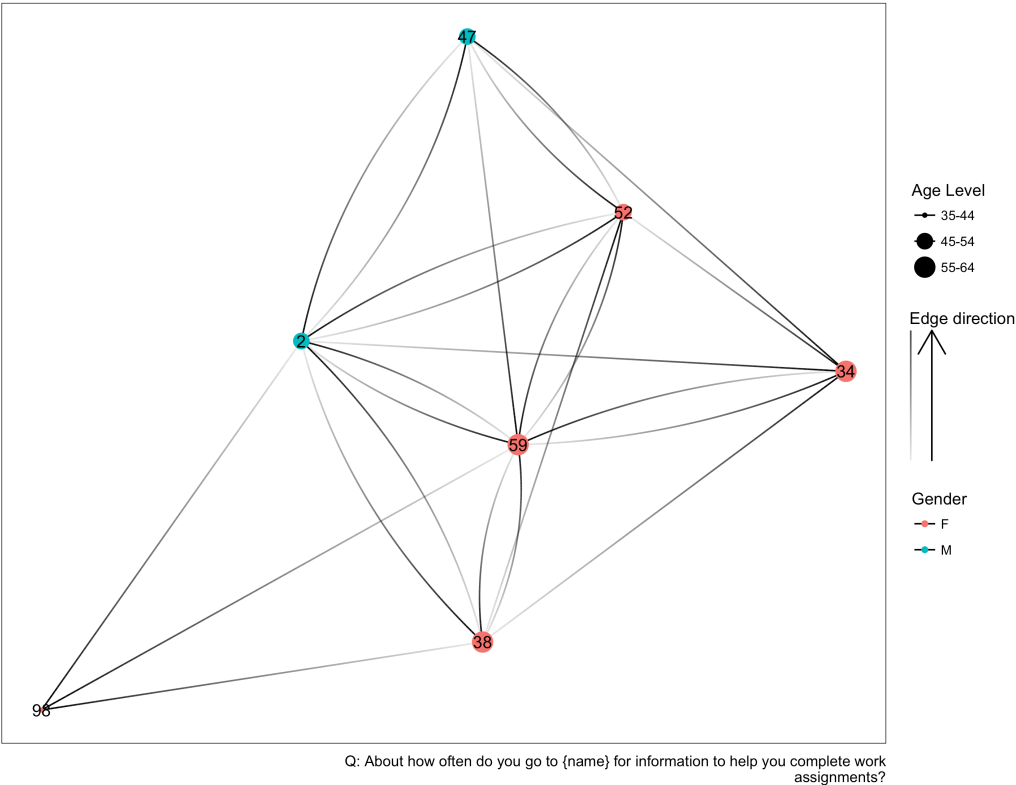Information Exchange Network (strong ties)

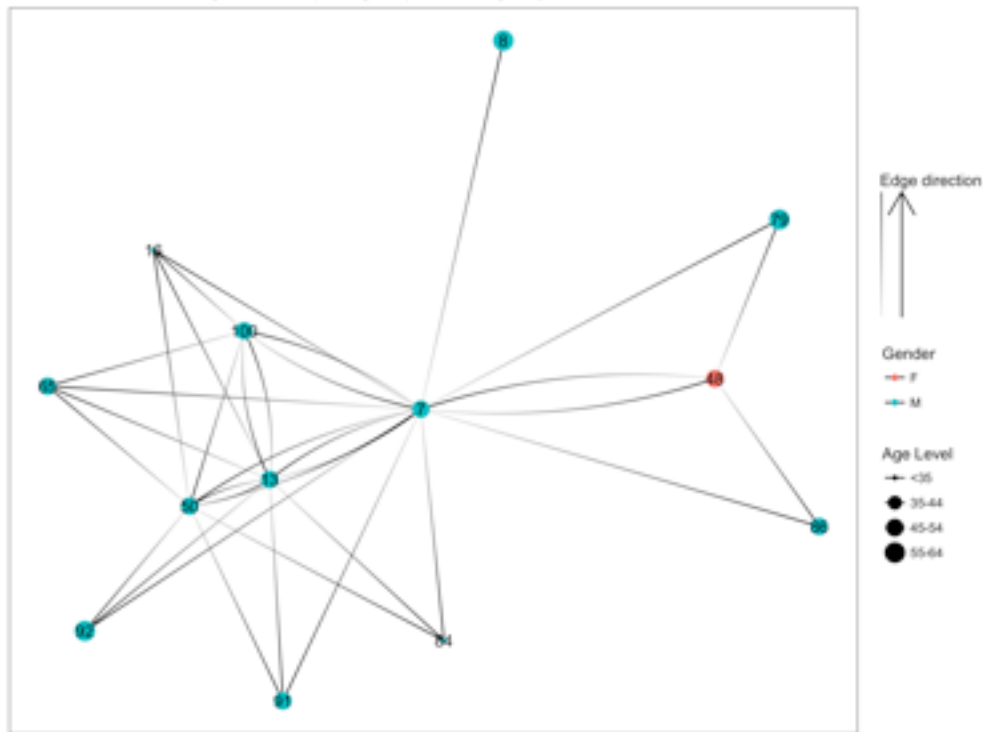Q: About how often do you go to (name) for information to help you complete work assignments?

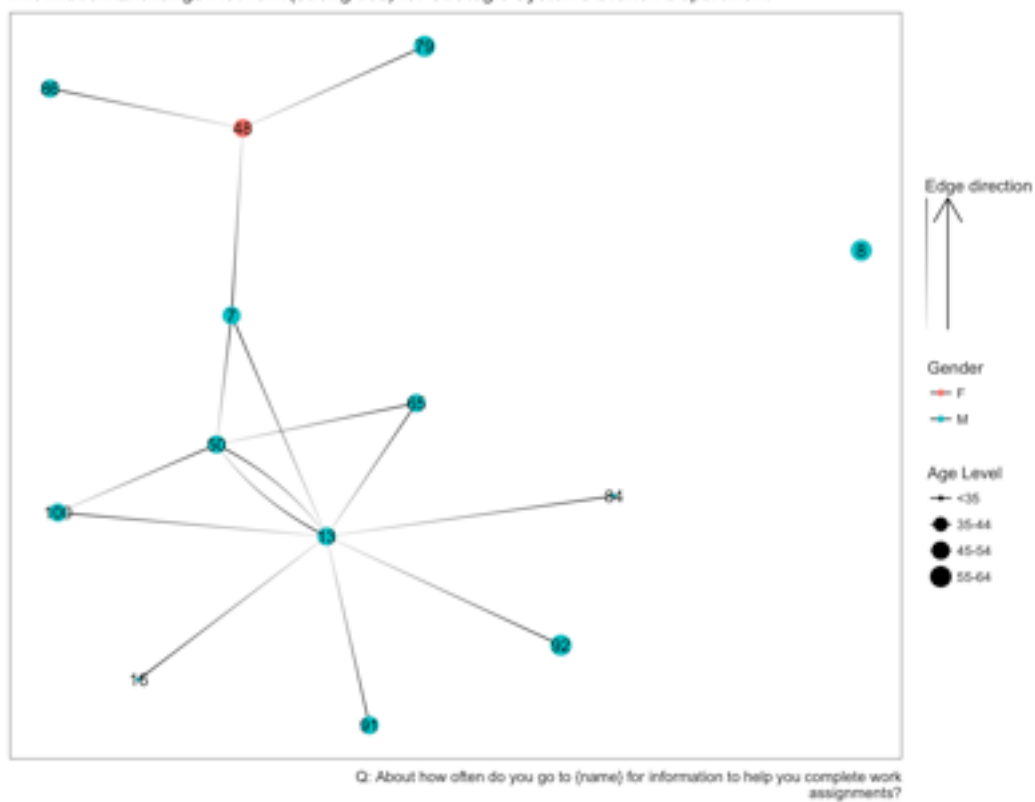## Communication Exchange Network (strong ties) for Executive Area Department

Age Level
— 35-44
— 45-54
— 55-64

Edge direction

Gender
— F
— M

Q: How frequently do you communicate with {name}?

Information Exchange Network (strong ties) for Executive Area Department

Age Level
— 35-44
— 45-54
— 55-64

Edge direction

Gender
— F
— M

Q: About how often do you go to {name} for information to help you complete work assignments?
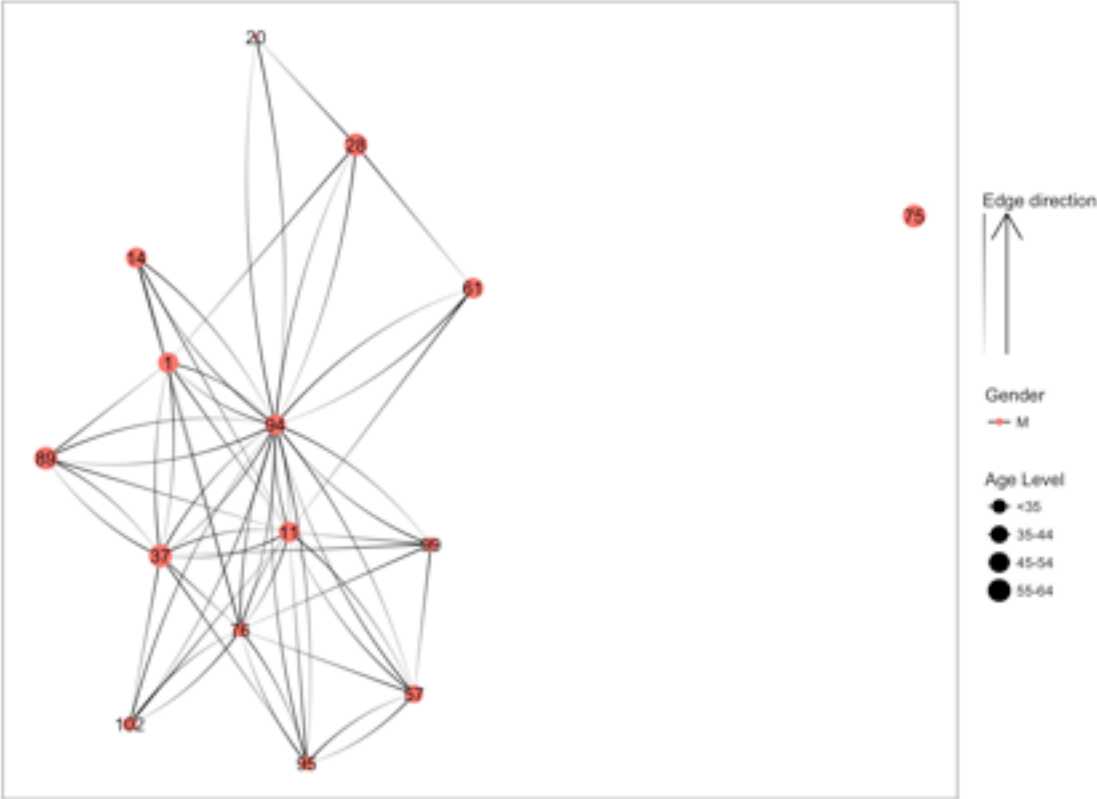
Communication Exchange Network (strong ties) for Strategic Systems Branch Department
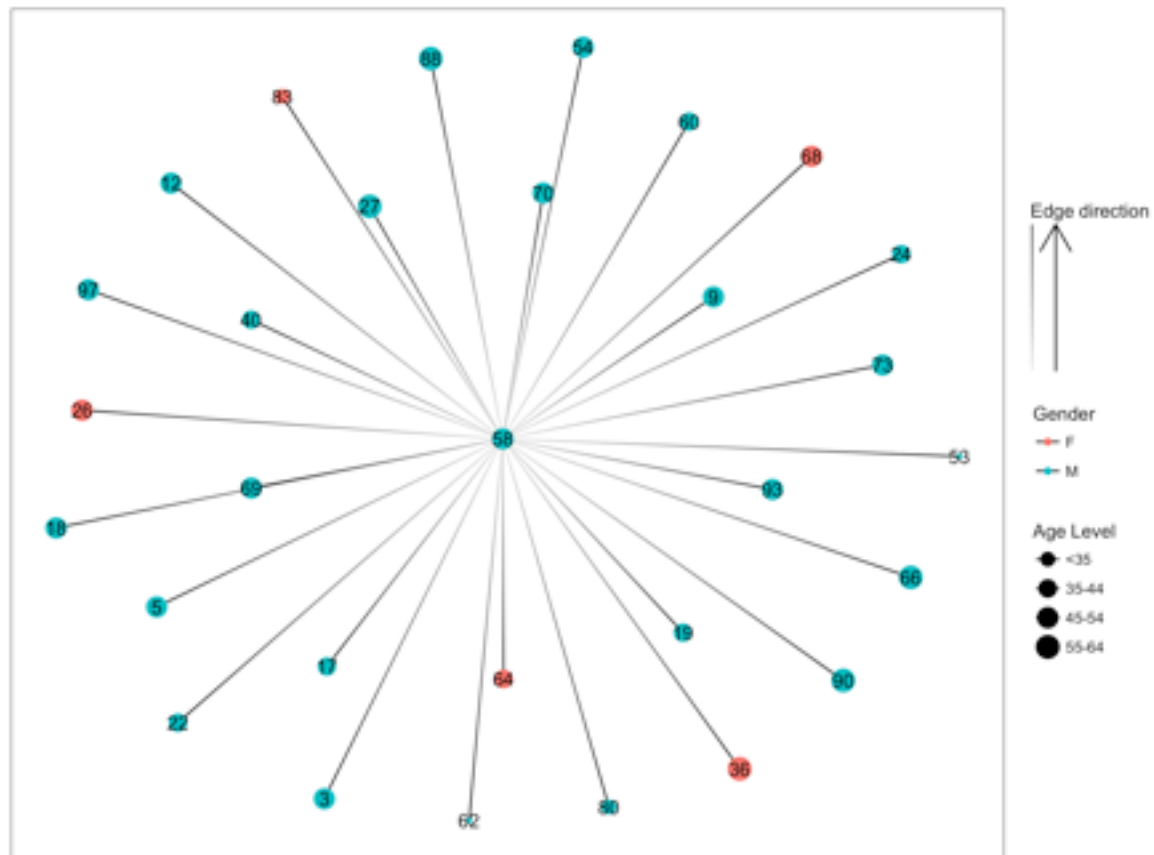

Q: How frequently do you communicate with (name)?

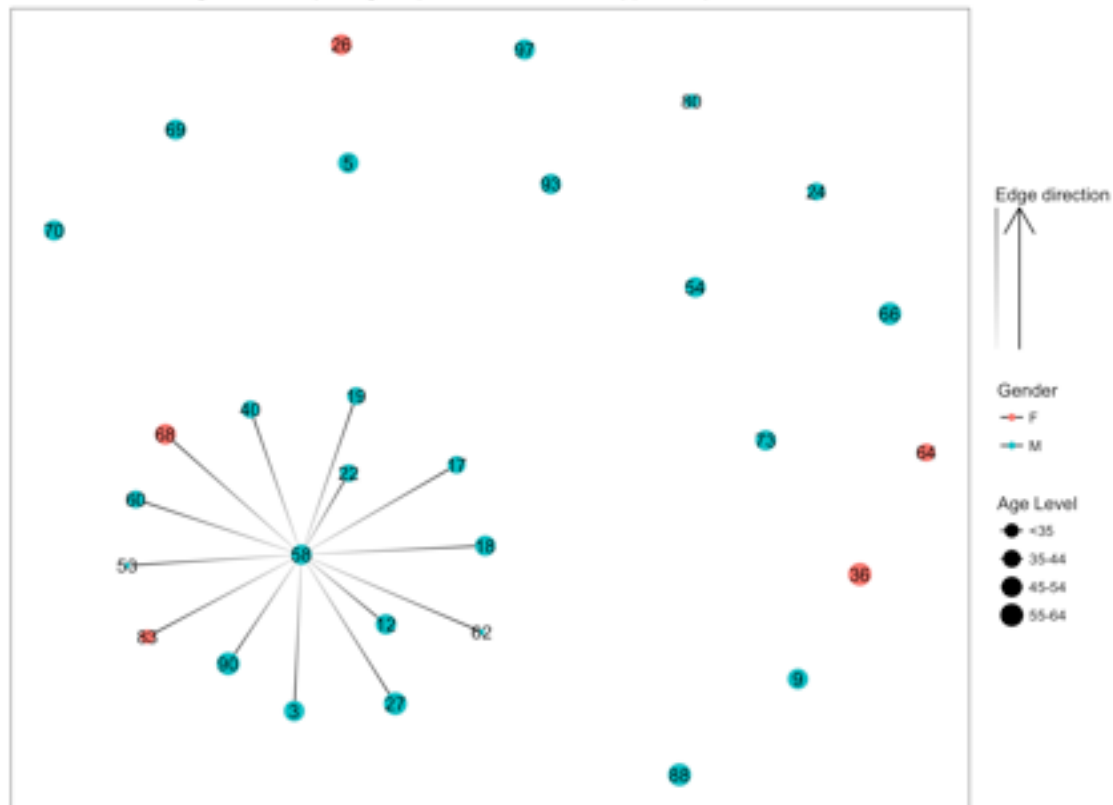Information Exchange Network (strong ties) for Strategic Systems Branch Department

Q: About how often do you go to (name) for information to help you complete work assignments?

Communication Exchange Network (strong ties) for Operational Comms Department

Information Exchange Network (strong ties) for Operational Comms Department

Q: About how often do you go to [name] for information to help you complete work assignments?

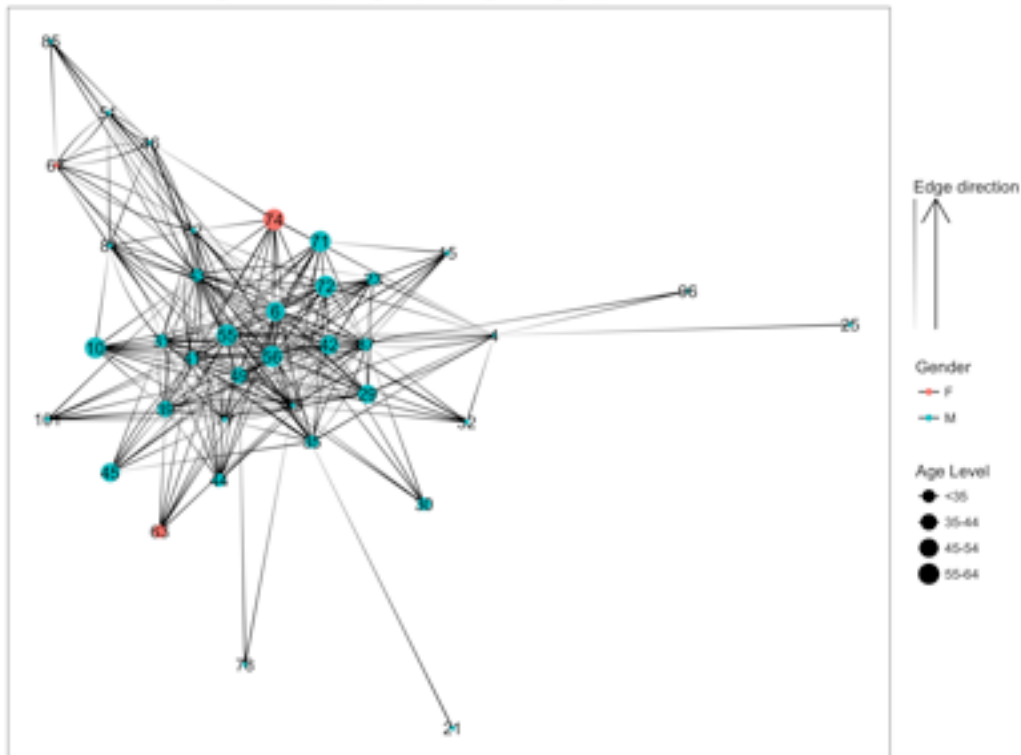Communication Exchange Network (strong ties) for Infrastructure Support Department

Edge direction

Gender
— F
— M

Age Level
● <35
● 35-44
● 45-54
● 55-64

Q: How frequently do you communicate with [name]?

Information Exchange Network (strong ties) for Infrastructure Support Department

Edge direction

Gender
— F
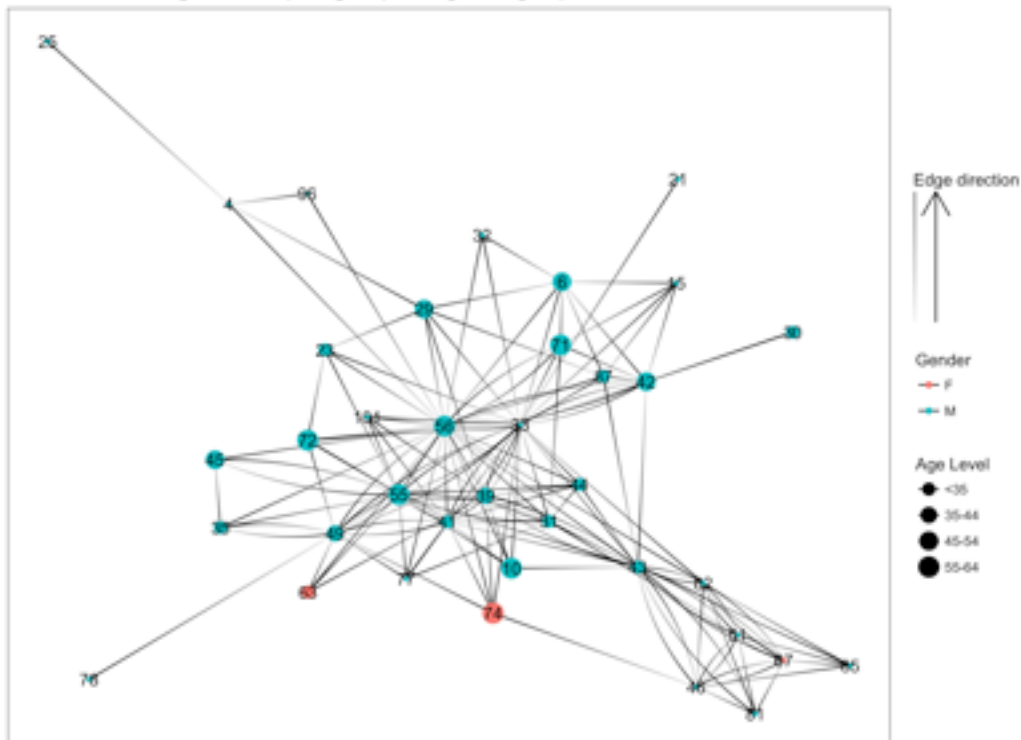— M

Age Level
● <35
● 35-44
● 45-54
● 55-64

Q: About how often do you go to [name] for information to help you complete work assignments?

Communication Exchange Network (strong ties) for Engineering Department

Q: How frequently do you communicate with (name)?

Information Exchange Network (strong ties) for Engineering Department

Q: About how often do you go to (name) for information to help you complete work assignments?

Social Network Metrics - Density Tables
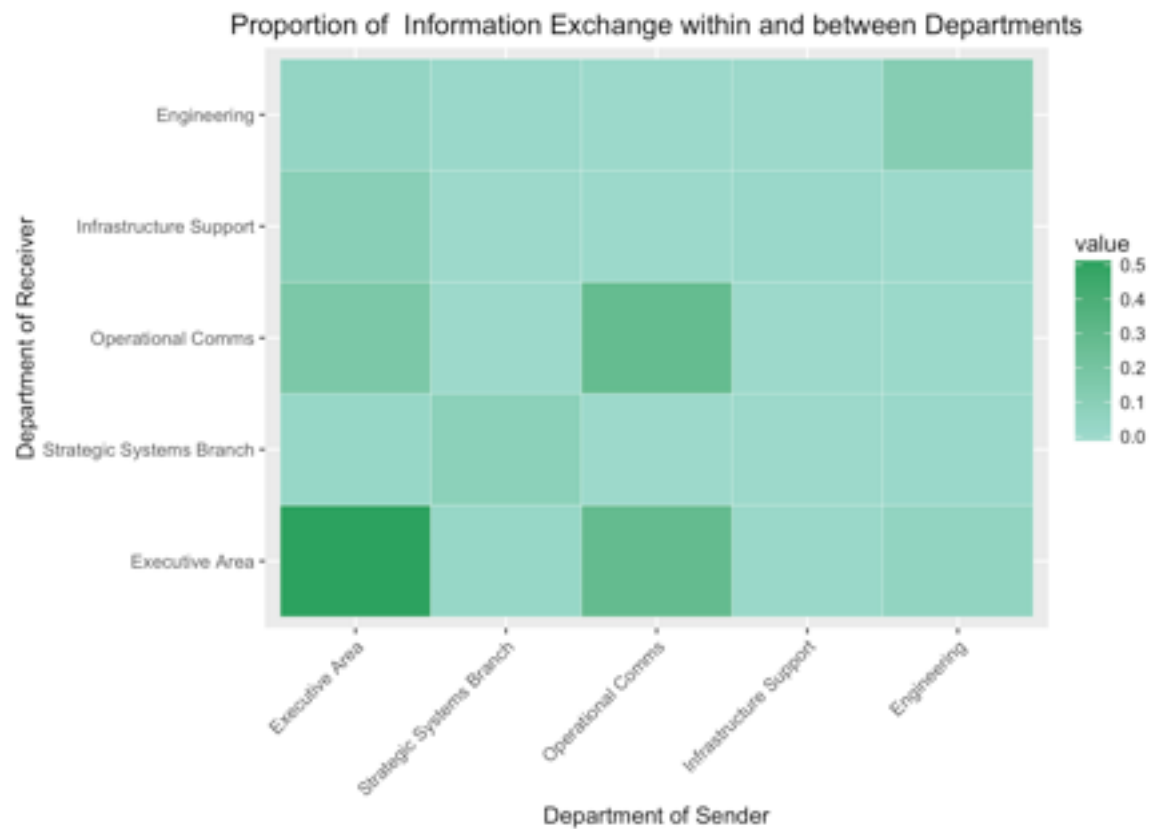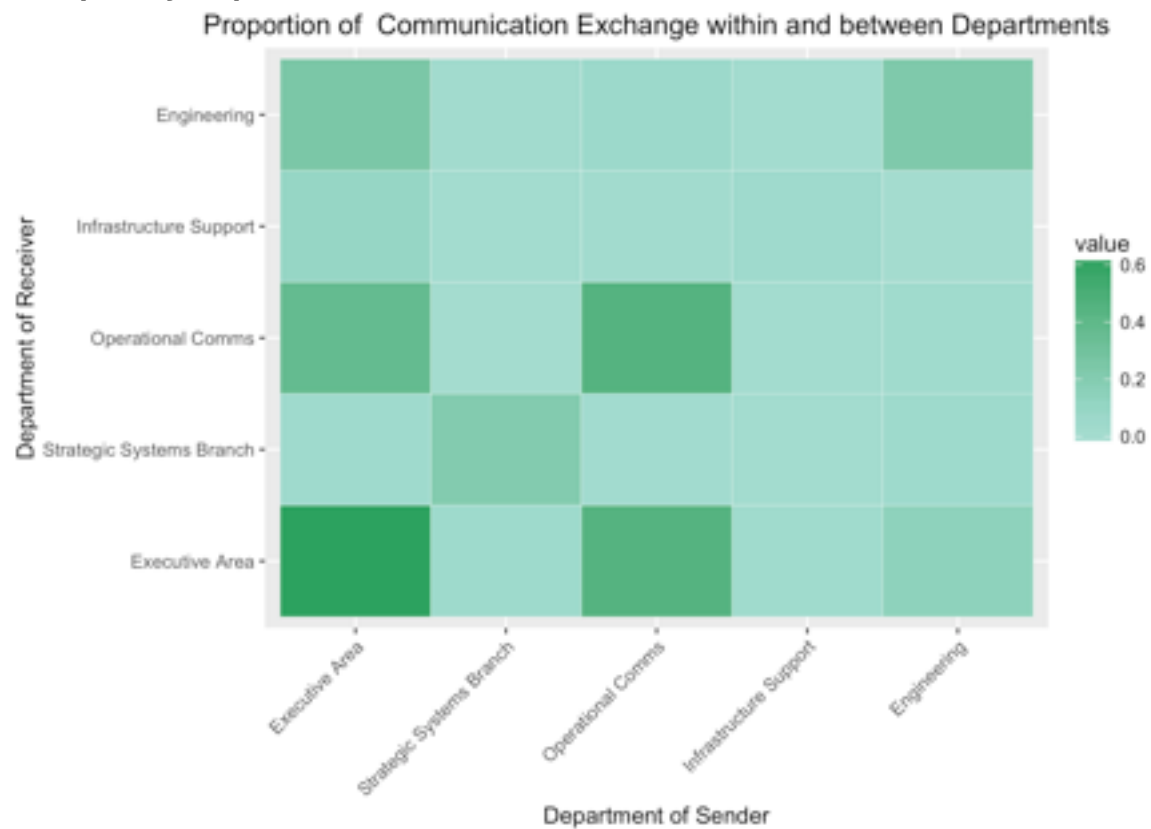
Explanation

When looking at the interaction between employees in a company it is possible to calculate the proportion of relationships that occur between employees of different groups compared to those that occur within one's group. This is called the External-Internal Index. A positive proportion indicates that most relationships exists with people from other groups ('outside looking'), whereas a negative proportion indicates that most relationships are with people of the same group ('inside looking'). This External-Internal Index can be decomposed into the External-Internal index for specific combinations of groups. By doing this, density tables are calculated. This report contains two density tables, looking at interaction between departments for the communication exchange network and the information exchange network.
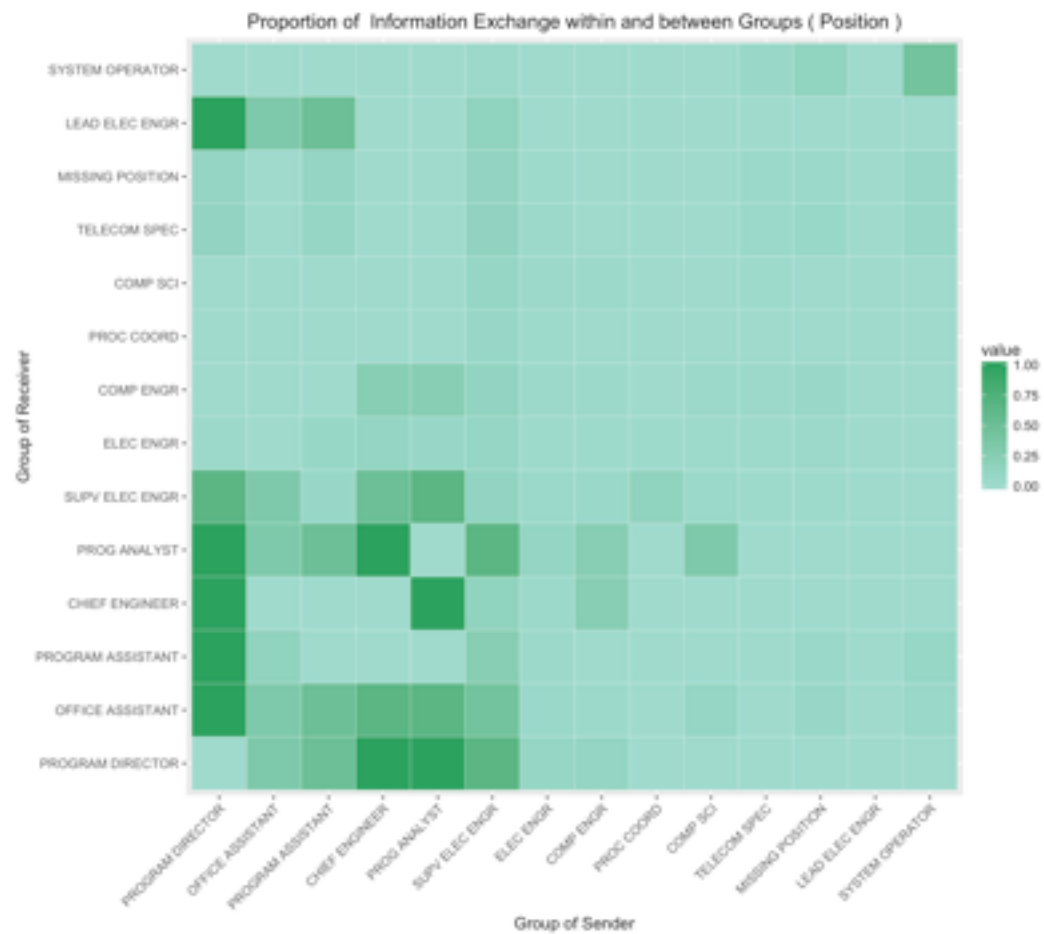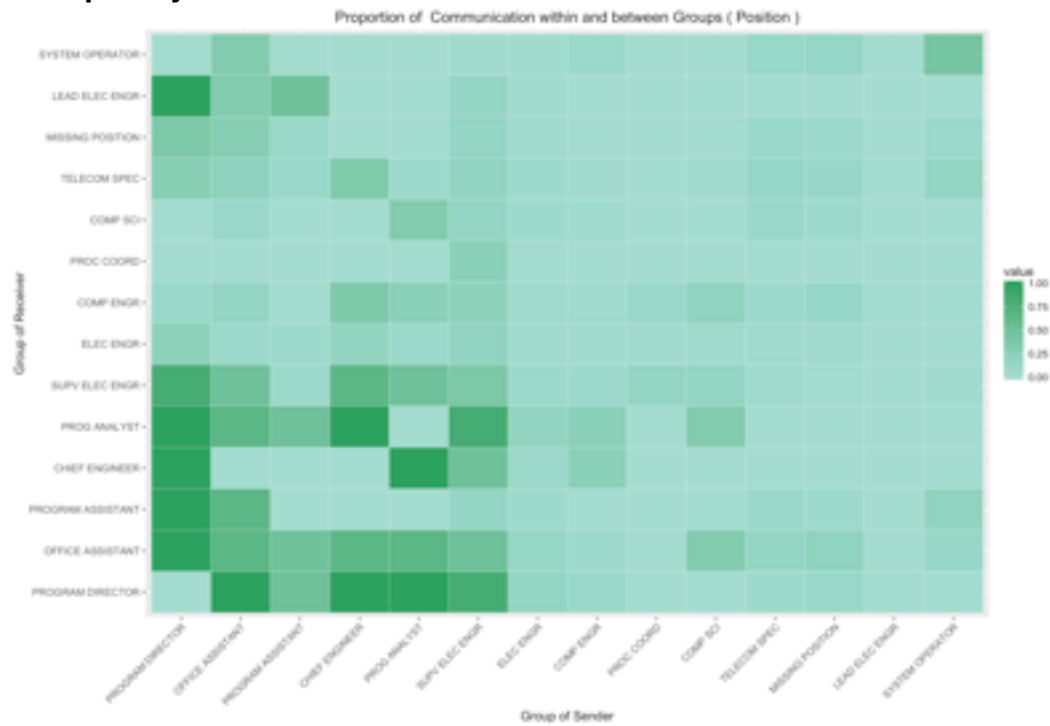
How to read a density table?

The relationships presented in this report are directed. This means the amount of communication two people indicate they have, does not have to be the same. One person might seek out another person more often (e.g., John goes more often to Mary for help, than Mary to John). *A density table is read from the 'column to the row'*. Concretely, in the table below, members of the executive area (column 1) communicate often with each other (e.g., the cell in column 1 and row 1 is in a dark green shade, indicating a high value). If we go further up the column we can see that of the four other departments (strategic system branch, infrastructure, operation comms, and engineering), members of the executive board most often seek out members of the operational comms department. This can be seen by the darker shaded cell.

For those who want exact numbers, please view the files "communication_density_table.csv" and "informationexchange_density_table.csv"
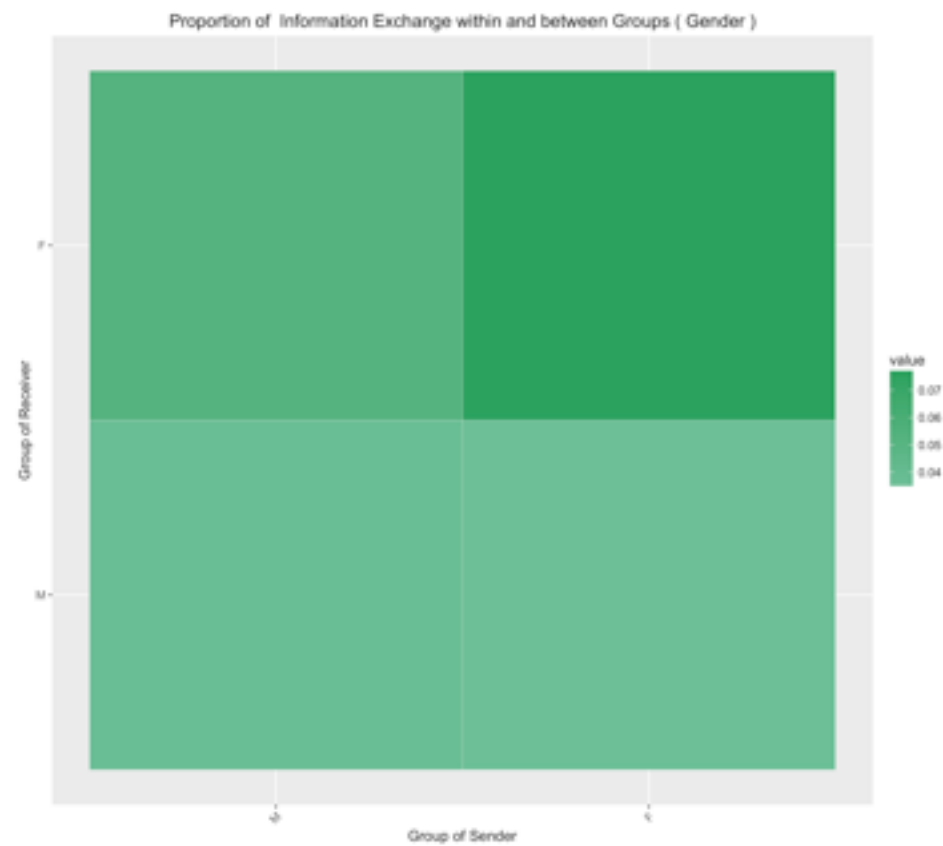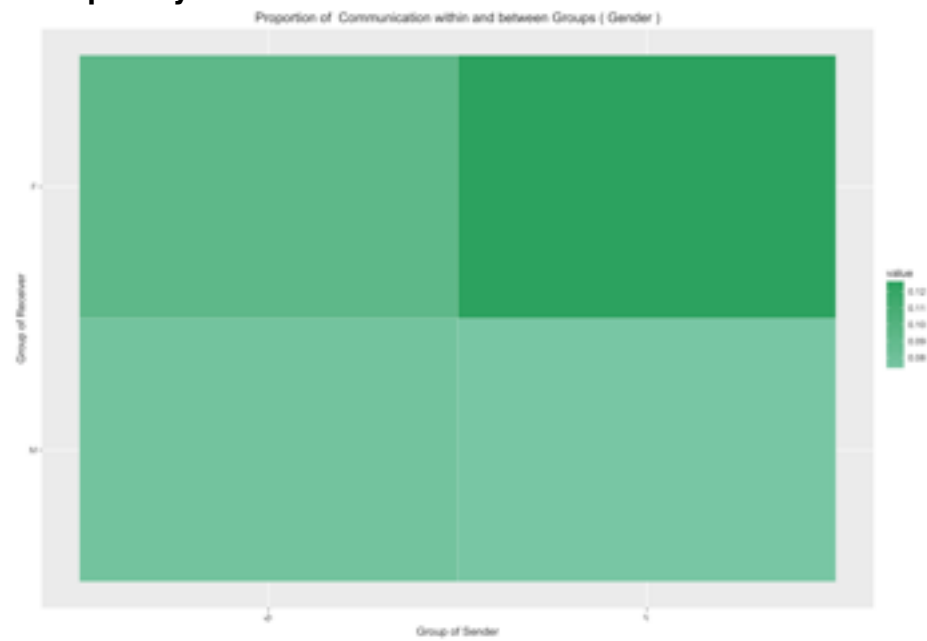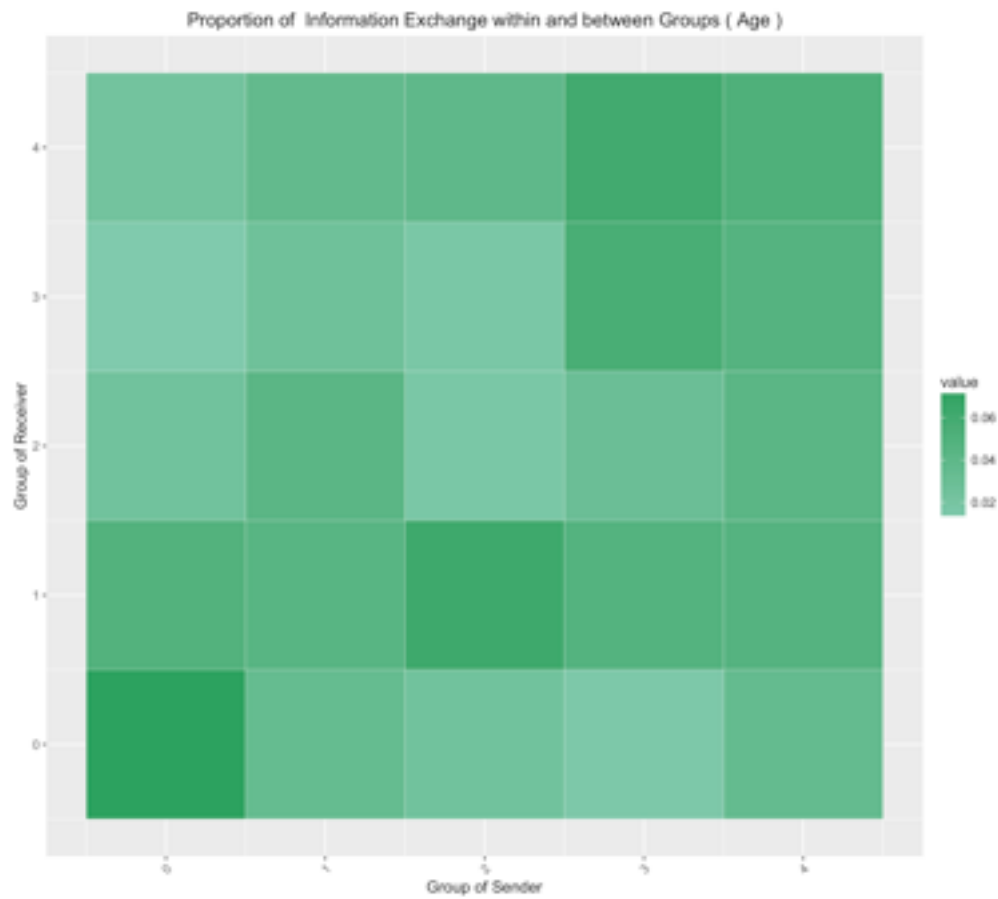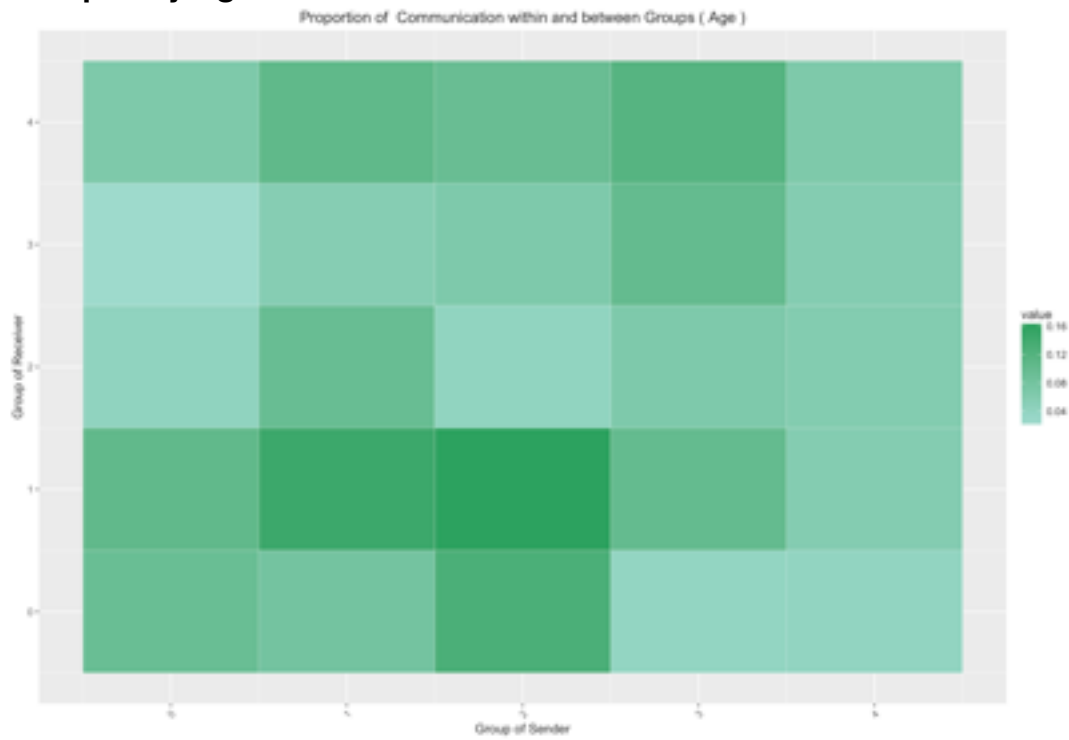
Grouped by Departments

Proportion of Communication Exchange within and between Departments

Proportion of Information Exchange within and between Departments

Grouped by Position

Proportion of Communication within and between Groups (Position)

Proportion of Information Exchange within and between Groups (Position)

Grouped by Gender

Proportion of Communication within and between Groups (Gender)

Proportion of Information Exchange within and between Groups (Gender)

Grouped by Age

Proportion of Communication within and between Groups (Age)

Proportion of Information Exchange within and between Groups (Age)

Grouped by Job Title

Proportion of Communication within and between Groups (Job)

Proportion of Information Exchange within and between Groups (Job)

Grouped by Tenure

Proportion of Communication within and between Groups (Tenure)

Proportion of Communication within and between Groups (Tenure)

Grouped by Embedded

Proportion of Communication within and between Groups (Embedded)

Proportion of Information Exchange within and between Groups (Embedded)
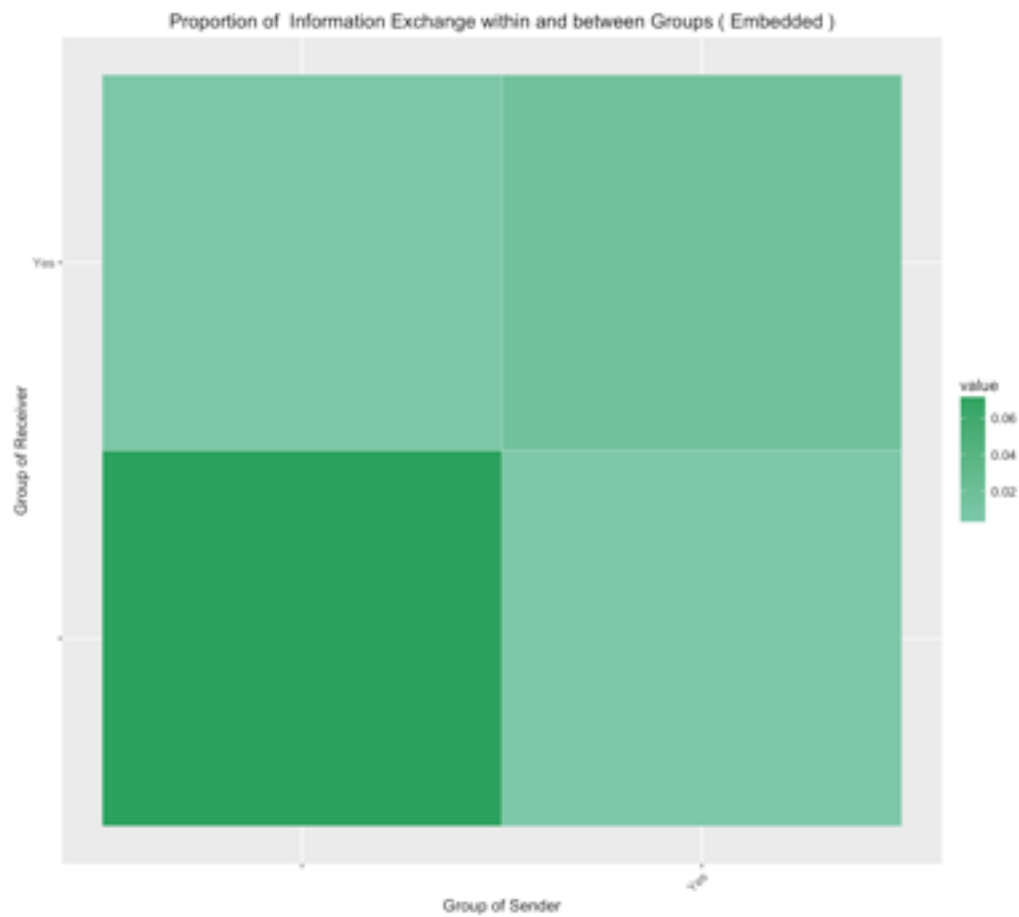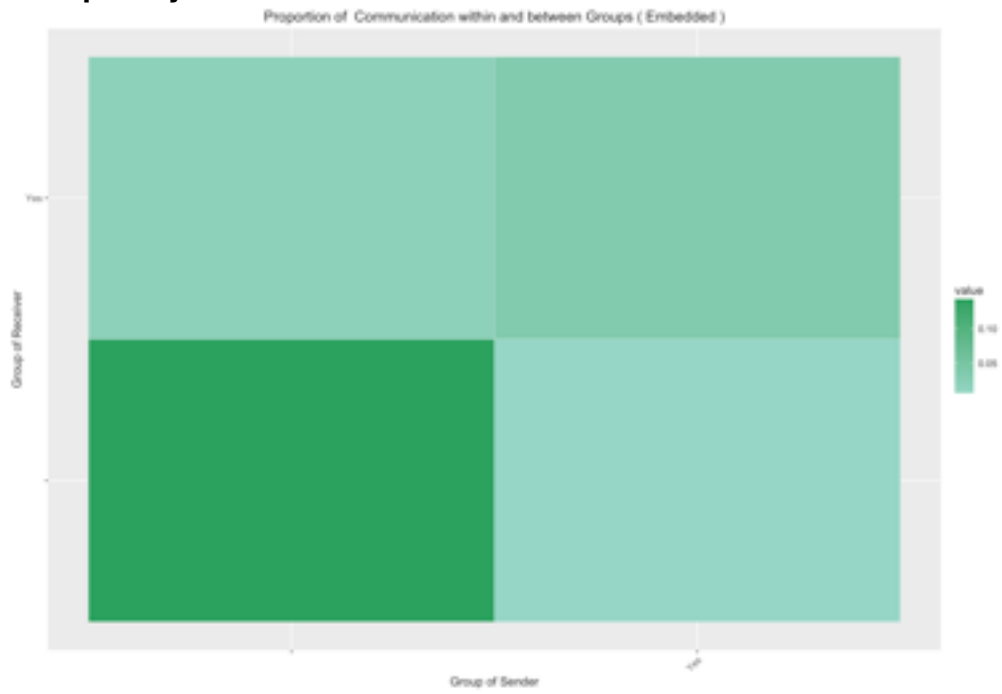
Code Book

1. **Tenure**
   1. Less than 2 years
   2. 2-5 years
   3. 5-10 years
   4. 10-20 years
   5. More than 20 years
2. **Age**
   1. <35
   2. 35-44
   3. 45-54
   4. 55-64
   5. 65+
3. **Information**: About how often do you go to {name} for information to help you complete work assignments?
   1. Once per year or less
   2. About once per quarter
   3. About once a month
   4. About once a week
   5. More than once a week
4. **Communication:** How frequently do you communicate with {name}?
   1. Once per year or less
   2. About once per quarter
   3. About once a month
   4. About once a week
   5. More than once a week