



## International Journal of Advanced Mass Communication and Journalism

E-ISSN: 2708-4469  
P-ISSN: 2708-4450  
IJAMCJ 2022; 3(2): 06-08  
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[www.masscomjournal.com](http://www.masscomjournal.com)  
Received: 05-04-2022  
Accepted: 12-05-2022

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## Studying the social network analysis among the university students

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### Abstract

Socio Network Analysis (SNA) is used to analyse patterns of relationships among people in groups. SNA technique is useful for examining the social situations and interdependencies of individual and organization. The study was conducted with the objective to identify patterns of information seeking among Ph.D students of the department and to identify the leaders among Ph.D students. For present research investigation, seventeen Ph.D students of the department of Agricultural Communication were selected and were numbered as A1 to A17. The respondents were administered a self-structured questionnaire to fulfill the study objectives. The results revealed that A8 was identified as the leader and A15, A8, A5 were the most referred for seeking information.

**Keywords:** Socio network analysis, students, communication

### Introduction

Social network analysis (SNA) is the process of investigating social structures through the use of networks and graph theory. It characterizes networked structures in terms of nodes (individual actors, people, or things within the network) and the ties, edges, or links (relationships or interactions) that connect them. These networks are often visualized through sociograms in which nodes are represented as points and ties are represented as lines. Sociometry is a qualitative method for measuring social relationships (Jennings 1987) [3]. It was developed by psychotherapist Jacob L. Moreno and Helen Hall Jennings in their studies of the relationship between social structures and psychological well-being, and used during Remedial Teaching. Franz defines Sociometry as “a method used for the discovery and manipulation of social configurations by measuring the attractions and repulsions between individuals in a group.” It is a means for studying the choice, communication and interaction patterns of individuals in a group. According to Freeman (1978) [2], the term “sociometry” refers to “an area of study dealing with the actual psychological structures of human groups, communities and societies at large sociometry postulates that group and have structures which consist of complex inter-personal patterns. These relationships are accessible to study by quantitative and qualitative procedures.” According to Moreno (1953) [4], a useful working definition of sociometry is that it is a methodology for tracking the energy vectors of interpersonal relationships in a group. It shows the patterns of how individuals associate with each other when acting as a group toward a specified end or goals.

Sociometric techniques are methods that qualitatively measure aspects of social relationships, such as social acceptance and social status. Sociometric technique is well used technique which is designed to present the structure of social relations among the members of a group graphically in a simple way. The credit of designing and developing sociometric technique goes to J.L. Morena and Helen Jennings. Their efforts in this regard came to light around 1960. It also deals with the degree of relationship with friends, position of the communication and attraction and rejection among the members of the existing circle.

Sociometry is a theoretical and methodological approach which seeks to analyze relations between individuals in small group situations. Sociometry is a form of network analysis. Moreno introduced the idea of a sociogram, which is a diagram representing the relationships between individuals. When members of a group are asked to choose others in the group based on specific criteria, everyone in the group can make choices and describe why the

choices were made. From these choices a description emerges of the networks inside the group. A drawing, like a map, of those networks is called a sociogram. A sociometric measure assesses the attractions (or repulsions) within a given group. The basic technique involves asking all group members to identify specific persons within the group they would prefer (or would not prefer) to have as partners in a given activity. Sociometry enables us to measure, map and develop relationships so that the invisible forces within an organisation are made visible and can be explored. Sociometry is an essential tool for people to build mature group networks and positive relationship behaviours.

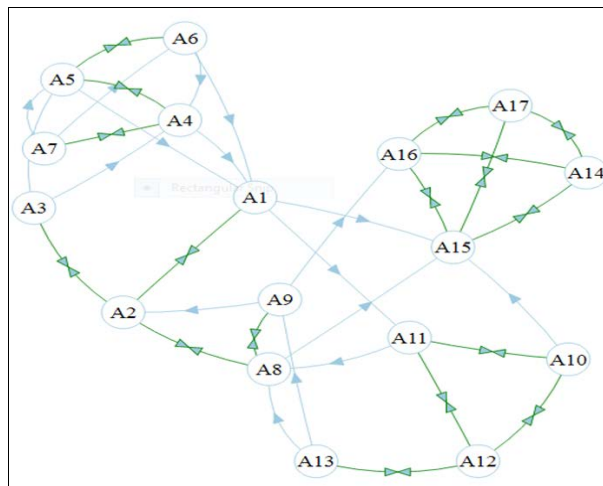
In essence, sociometry helps groups and individuals make necessary changes to function as more dynamic and successful work groups. The socio-metric technique is used to ascertain the degree of interaction among the group members either of a class or an assessed group. It gives clear picture about the acceptance of a pupil by his peer groups and is helpful to detect leader of class or group for leadership activities and leadership training and to give charge of group to leader for certain group activities. In case of socio-metric technique, information provided is limited by nature of socio-metric questions and the number of choices used. The student does not reveal the why he goes on preferring or rejecting some friend of the group. The socio-metric data and results do not give any suggestion how to improve the inter-personal relationship in the group. It has limited use so far data collection about students is concerned. It disappoints the isolate sometimes, which is not desirable in the context of the psychology of the isolate students. Present research study was designed with the following objectives: <sup>[1]</sup> to identify the pattern of

information seeking behaviour among the Ph.D students of the department <sup>[2]</sup>. To identify the leaders among the Ph.D students.

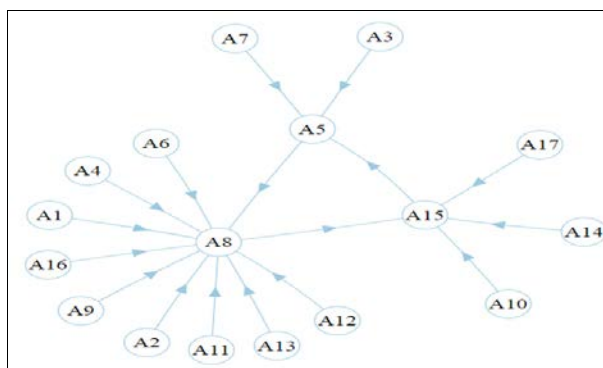
**Research Methodology**

Total 17 Ph.D students of Agricultural Communication were selected and each member was numbered 1 to 17. Certain questions were asked like: <sup>[1]</sup> to whom you seek most of the information and they are advised to give their own choice like first choice, second choice and third choice to his liking? <sup>[2]</sup> To whom you see as the leader in the department? Then the choices and preferences given by students may be plotted graphically using arrow mark (→) which indicates single line or one-way choice and marks like (↔) depicts mutual choice, preference. After completion of the plotting the researcher gets a picture of sociogram which is to be interpreted next. Out of the interpretation of sociogram, the leader and the isolates both are detected on the basis of their obtained choices and preferences from their friend circle. A leader is he who receives more choices and preferences and a isolates does not get no preference or choice by his own friend choice. In this way sociometric device helps researcher to find out the star or isolates among the members of the group. To construct the visualizations “Leaderboard X” was used. It is a software that helps to generate the interaction pattern/visualizations after feeding the data in columns. As soon as the data was feeded the visualizations keep on generating and at the end produced a network of social relations.

**Results and Discussion**



**Fig 1:** Sociogram of the information flow of departmental Ph.D student



**Fig 2:** Sociogram for the selecting the leader

Social Network Analysis is the process of investigating social structures with the use of networks and graph. It offers a methodology to analyze social relations and conceptualize social networks. These networks are often visualized through sociograms. These visualization provide a means of qualitatively assessing the networks by varying the visual representation of the nodes. These were characterized by network structures in terms of node/ties. The group selected to take the sociometric test was N=17 convenient ample. This group was composed of 5 males and 12 females from different batches of Ph.D. The visualizations/ interaction pattern revealed that all of the respondents share information among each other. It was also found that most of the respondents seek information from A15, A8 and A5, respectively. The sociogram for selecting leader was prepared and it was observed through figure no.2 that most of the respondents identified A8 as the most appropriate leader for the group. A8 was a choice as a leader by most of the respondents. Rocha and Dias (2019) <sup>[6]</sup> in their study titled "A socio-metric analysis for the creation of an integrated multicultural work team" revealed that, the socio-metric questionnaire (socio-metric test) with its analysis using a socio-metric matrix and software to draw an analyze the connections, proves to be a simple and practical tool to identify the interrelationships among the people from a group and create a multi-cultural teams. Adamic and Adar (2005) <sup>[1]</sup> explored the behavior of users inside networks and not only the structure. They investigated how people are able to select among hundreds of acquaintances, the correct person to form the link in the chain.

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