# The Sociometric Model in Media and Communication Research: A Projection onto Virtual Relationships

**RESEARCH ARTICLE**

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**Abstract**

The sociometric model plays a crucial role in analyzing the intricate patterns of interpersonal relationships within communities. Rooted in the systemic approach, this model has become increasingly relevant in media and communication research, which addresses the complex dimensions of communicative phenomena. Its effectiveness lies in the integration of both quantitative and qualitative methodologies, enabling a comprehensive analysis and interpretation of data that lead to accurate conclusions. The use of the sociometric model allows for an advanced mapping of relational networks, moving beyond mere numerical evaluation to emphasize the nuanced aspects of group dynamics, such as areas of consensus, as well as the attractive and repulsive forces that shape individual interactions. It further offers profound insights into the sociological and emotional foundations of community connections. This study proposes to extend the applicability of the sociometric model to virtual interactions, which increasingly reflect the social structures found in physical environments.

## 1. Introduction:

The network society, referred to by Knorr-Cetina as the "post-society" and described by Castells Gustavo as the society of informational capitalism or the information society, is considered a manifestation of the postmodern era. This form of society is

487 – www.imcra.az.org, | Issue 8, Vol. 8, 2025

The Sociometric Model in Media and Communication Research: A Projection onto Virtual Relationships
Samia Bouguerra
Lilia Ain Souya

characterized by its resistance to centralized control, despite continuous efforts to regulate individuals and institutions, largely due to the expansive reach of virtual spaces.

Through this pervasive digital influence, the social actor, once understood as a being bound by specific temporal and spatial contexts, has evolved into a virtual identity that exchanges information and forms relationships within a global virtual community. This community operates beyond traditional political, economic, cultural, or geographical constraints (Imed & Benazouz, 2024, p. 304).

With the advent of this society, virtual relationships have begun to emerge across various platforms. Some of these connections are extensions of existing real-world relationships, such as those with family members, friends, or professional groups, while others are entirely new, including acquaintances and friendships formed via social networking sites.

These platforms enable dynamic user interaction and offer a variety of engagement tools that promote interpersonal communication among users. Such features include instant messaging, video communication, chat functions, file sharing, and discussion groups (Al-Mansour, 2012, p. 27). These tools facilitate the development of virtual relationships that closely resemble real-life ones, with distinctions primarily related to the medium of interaction and the potential for extended duration compared to physical connections.

In examining real-world relationships, scholars in the human and social sciences, particularly those specializing in media and communication studies, frequently utilize the sociometric model. This model outlines a network of informal relationships, drawing attention to areas of agreement and disagreement among individuals, as well as the emotional and social dynamics within a group.

It operates on the premise that greater connectivity enhances the flow of information, aiming to make interpersonal relationships observable and to analyze communication structures (Yahia, n.d., p. 1). As such, the model is widely recognized as essential within the systemic approach for analyzing real-world relationships.

This study investigates the potential application of the sociometric model within media and communication research to examine virtual relationships in the context of the network society. This approach is based on the earlier observation that virtual relationships often evolve from real-life connections. Accordingly, the study is guided by the following central research question:

### Can Sociometric Measurement Be Relied Upon to Study Virtual Relationships in Media and Communication Research?

This central question leads to several sub-questions:

● What is meant by sociometric measurement, and what is its significance in media and communication research?

● What are the characteristics of virtual relationships?

● What are the conditions for applying sociometric measurement to virtual relationships within media and communication research?

### 2. Study Importance:

The importance of this study stems from the significance of the topic itself. In today's society, the increasing use of modern information and communication technologies has led to the development of a networked society. This society establishes relationships in a virtual, non-physical space, unconstrained by geographical or spatial boundaries.

This transformation has facilitated the creation of interpersonal relationships within a new framework that diverges from traditional forms. As a result, media and communication researchers are now focusing on the effectiveness of existing models or the necessity of developing new ones. This shift has garnered substantial attention, as it lays the foundation for new methods and methodologies in research.

### 3. Key Concepts:

### 3.1 Definition of the Sociometric Model:

According to Jaspreet Kaur Sodhi, the sociometric model is defined as "a method for describing and discovering social status, building, and developing relationships by measuring acceptance and rejection within groups" (Verma, 2024, p. 08).

Sociometric measurement refers to a broad range of methods that assess both positive (attraction) and negative (repulsion) ties among individuals within a group. The fundamental principle of this method is that each group member has the capacity to evaluate every other member based on one or more criteria (Kenneth, 2009, p. 84).

### 3.2 Definition of Virtual Relationships:

To define virtual relationships, it is first necessary to address the concept of a "group" and the conditions required for its formation.

According to Lindenberg (1997), the term "group" refers to a limited number of individuals interacting with one another in various ways. Key forms of connection include functional, cognitive, and structural ties. Group members are functionally connected in pursuit of shared goals.

For example, group members may rely on one another to achieve common objectives (task interdependence), while also influencing each other's outcomes (cooperative outcome interdependence). They are linked through their collective identity, shared memory, sense of reality, expectations, and perceptions. Members influence one another's expectations and rely on each other for their social identity (Lindenberg, 2015, p. 22).

Additionally, social agreements are made within a specific context, utilizing particular language and behavior patterns (Preece & Maloney, 2003, pp. 597–598). Researchers Krishmar-Maloney and Preece identified a set of conditions that must be present in the environment for a group to be recognized as a community:

‑   Members must share a goal, interest, or common need, which serves as the primary reason for their affiliation with the group.

‑   Members must engage in regular and active participation, fostering intense interactions, strong emotional bonds, and shared activities.

‑   Group members must have access to shared resources, with clearly defined terms for how this access is granted.

‑   The exchange of information, support, and services among members must be fundamental.

‑   Social agreements must occur within a specific context, with particular linguistic and behavioral conventions (Bouchlaghem, 2017/2018, p. 39).

●   Virtual Relationships:

Virtual relationships, now increasingly widespread, represent a new form of interpersonal connection. Traditional real-life relationships, which were predominantly based on direct, face-to-face interactions, are no longer central and, in many cases, may be entirely absent. Instead, virtual relationships, which rely heavily on imagination as the primary mode of interaction, have become dominant. This shift has occurred despite the absence of direct physical contact (Ben-Ze'ev, 2017, p. 01).

### 4. Communication Studies and Research:

489 ‑ www.imcra.az.org, | Issue 8, Vol. 8, 2025
The Sociometric Model in Media and Communication Research: A Projection onto Virtual Relationships
Samia Bouguerra
Lilia Ain Souya

The complexity of communication phenomena, particularly the challenges involved in interpersonal relationships, has significantly contributed to the development of theoretical frameworks that have established media and communication studies as an independent field. Among these frameworks are those that focus on the psychological and social dimensions of understanding and interpretation. These frameworks aim to highlight the core emotional structures through which individual status, relationships, and communication processes are defined.

Since the development of communication theory has evolved in parallel and in interaction with other disciplines, especially the human and social sciences, it has embraced a diverse array of methodologies and approaches.

Several factors have contributed to the advancement of media and communication research, including:

● The evolution of media and communication tools, transitioning from print to audio, then audiovisual formats, and ultimately to new media and virtual spaces.

● The transformation of the journalism profession and the emergence of the "user" who now practices journalism within virtual spaces, once the exclusive domain of professional journalists in traditional media outlets. This shift reflects society's growing demand for media to fulfill various roles, including informing, educating, entertaining, and supporting socialization.

● The overall progress of the human and social sciences, given the close relationship and intersection between these fields and media and communication studies. Initially, media and communication research was largely influenced by the foundations of these disciplines, before evolving into an independent scientific domain with its own principles.

● The proliferation of higher education institutions, institutes, and research centers dedicated to the study of media, communication, and new media.

It is clear that media and communication research displays considerable methodological diversity. This is partly due to the varying approaches of researchers and partly because of the emergence of a new media and communication environment. This evolving environment has led to methodological shifts in applying established tools and approaches, driven by its distinct nature and structural design. In fact, Web 2.0 is a multimedia, multi-application environment (Koubibi, 2021, pp. 609–610).

## 5. Characteristics of Virtual Communities:

The concept of the group in virtual spaces differs somewhat from its counterpart in real-world public spaces. The latter has given rise to new characteristics shaped by the specificities of virtual environments, their tools, and the intangible proximity they foster. Identifying hidden identities has become increasingly difficult, if not impossible, resulting in a degree of ambiguity regarding the true nature of individuals who comprise these communities.

Additionally, there is a noticeable trend toward individual isolation from reality, coupled with the emergence of broad opportunities for communication without barriers, regardless of the nature of the interaction. This has enabled the creation of virtual relationships in which a person may be physically present in one location, yet mentally, emotionally, and socially situated elsewhere. This phenomenon presents significant challenges in studying virtual environments, including:

● The nature of content in digital environments differs from traditional media, as it relies on hypertext and textual interconnectivity.

● The diversity and heterogeneity of users, the multiplicity of languages, and the changing and limitless nature of content.

● The complexity of virtual identities, the reliability of data and information, and the possibility of a single individual owning multiple accounts, all compounded by the difficulty of quantifying internet users.

● Ethical and security concerns surrounding data confidentiality and privacy (Koubibi, 2021, p. 616).

## 5.1 Evolution of Social Entities:

Digital communication has given rise to virtual human entities, which possess distinct characteristics that differentiate them from real-world human entities. However, a clear separation between these two types of entities is not feasible, as the digital space society is essentially an extension of real-life society and its members.

Furthermore, digital communities consist of individuals from diverse countries and cultures, cultivating a sense of detachment from reality, often without the individuals being fully aware of it. The virtual community has effectively replaced genuine individualism with a form of perceived connection, particularly for those who are physically close yet emotionally or socially distant in real life.

## 5.2 Individualism and Fragmentation:

The digital space, along with communication within it, has shifted individual interaction from a mass-oriented, collective phase to one dominated by individualism and virtual privacy. The use of technological tools has become the predominant mode of interaction, supplanting direct, in-person engagement and authentic participation. This space has progressively become a realm where personal needs and desires are satisfied, with users dedicating substantial time to exploring content across various social platforms, as well as engaging in entertainment, such as electronic games, and other activities (Sahari & Amina, December 2019, pp. 52–53).

Other key characteristics of virtual communities include:

‗       Shared interests, concerns, or opinions among members, which serve as the primary motivation for joining the virtual space.

‗       Active and repeated participation, characterized by social interactions and relationships among members.

‗       A significant exchange of information and emotional support among members.

‗       Group discussions among users, governed by a set of rules and regulations that members must agree to in order to join the group (Marwa, 2016, p. 106). In most cases, the group administrator requires members to consent to these conditions before gaining access.

‗       A shared framework of social norms and language.

‗       A collective understanding of the boundaries of membership and group identity.

‗       Members' reputations, along with their social, professional, cultural, and intellectual status (Messaouda, 2011, p. 395).

## 6. Characteristics of Moreno's Sociometric Model:

Before delving into the specifics of the sociometric model, it is essential to consider the systemic approach within which it is embedded. The systemic approach in communication studies focuses on analyzing the interactions and relationships among components within a system (viewing society and groups as systems, which provides the conceptual basis for this discussion), rather than isolating individual components.

It emphasizes the idea that the behavior of each element within the system can influence, and be influenced by, others, thus underscoring the importance of feedback and the complex dynamics involved. This approach proves particularly useful for understanding communication within organizations, families, or social groups, as it aids in identifying recurring patterns and fostering cooperation within the system (Smarter, 2025).

Systemic analysis offers a distinct perspective when compared to other approaches by decoding verbal, non-verbal, and emotional interactions, ultimately aiming to restore the system's operational functions. This approach situates individual issues

491  –  www.imcra.az.org, | Issue 8, Vol. 8, 2025
The Sociometric Model in Media and Communication Research: A Projection onto Virtual Relationships
Samia Bouguerra
Lilia Ain Souya

within the broader context of personal relationships across various systems of belonging (e.g., family, social, institutional) and seeks to reorganize these contexts while emphasizing interpersonal competencies (Centre de Consultation Familiale, 2025).

The sociometric model, which falls under the systemic approach, is among the most important frameworks in media and communication sciences, as well as in sociology. This model primarily relies on questionnaires as its main tool and serves as a method for analyzing and measuring social relationships. It originated in the 1930s from the work of Romanian physician, psychologist, and sociologist Jacob L. Moreno (1889–1974) (Eloire, 2017, p. 06).

Moreno's central objective was to assess relationships within groups by exploring their internal interactions and communication dynamics. He recognized that social interactions extend beyond the mere exchange of information and have a profound impact on the group's overall dynamics and structure (NoCLASH, 2025).

This method of measurement is applied within specific and well-defined contexts. In virtual group settings, it can be utilized in particular and closed communities, such as professional groups or those formed by individuals who deliberately select known participants. This specificity enables the application of the sociometric model in communication studies that examine virtual relationships.

### 6.1 Stages of Applying the Sociometric Model:

The process of applying the sociometric model to measure relationships, especially virtual relationships, includes several stages, as outlined below:

● **Defining the criteria and social position:** These criteria are incorporated into the questionnaire based on the group's actual activities. Referred to as "shared metrics," their purpose is to determine an individual's standing within the group.

● **Designing test questions:** The questionnaire must include questions that uncover the social structure of the group, addressing aspects such as positive or negative impressions, preferences, or rejections.

● **Establishing questions related to expectations and sociometric perception:** These questions delve into the psychological structure of individuals, predicting expected reactions, either positive or negative. Respondents are asked to identify the individuals they believe would either choose or reject them (Karima, 2018, p. 127). An example in virtual settings would be the formation of sub-groups within a larger community, where users select one another based on shared goals.

Among the questions proposed by Moreno are:

● Who are the individuals the respondent would like to be within a certain activity?

● Who are the individuals the respondent would not like to be within a certain activity?

● Who does the respondent believe would like to be with them in a certain activity?

● Who does the respondent believe would not like to be with them in a certain activity? (Scribd, 2025)

These instructions are vital for ensuring the proper implementation of the test and guiding respondents in providing accurate answers. The following considerations must be taken into account when drafting the instructions:

● Clarity, simplicity, and precision are essential.

● Avoid using suggestive language that could bias the respondent toward selecting or rejecting particular individuals.

● Each sociometric question should have its own specific instructions, and respondents must be given adequate time to respond.

In addition to these steps and conditions, sociometric measurements, like any other type of test, must meet the criteria of validity and reliability. The researcher must also maintain objectivity throughout every phase of the test (Karima, 2018, p. 128).

### 6.2 Testing Virtual Relationships Using Sociometry:

Social relationships formed in virtual environments emerge as a result of an individual's integration into this new society, which is constructed through communication technologies and networks. Consequently, the individual develops an alternative domain that reflects their relationships and values, where a virtual identity is formed as a substitute for real-life interactions within traditional societal groups, such as family, professional networks, neighbors, and relatives. Nevertheless, these relationships can still be analyzed using sociometric methods (Al-Dabbaa, 2015, p. 30).

To conduct a valid sociometric test, particularly for assessing attraction and repulsion within a given group, such as virtual groups, certain conditions must be met:

●      A suitable environment for conducting the test should instill a sense of comfort among group members, while also ensuring the confidentiality of their information at all times. This principle is also applicable to virtual relationships, as these often extend from real-life connections (University of Karbala, 2016). In this context, the study by Witty and Joinson (2009) demonstrated the influence of virtual environments on identity disclosure. They observed that questions and answers in digital discussion forums tend to be more direct, investigative, and intimate compared to face-to-face interactions, which creates a sense of comfort between the researcher and the participant (AQA, 2018).

●      It is crucial to define the boundaries of the group for its members, ensuring that each individual clearly understands the framework within which they are making their choices or rejections. The objectives of the study and its thematic focus must be clearly articulated and adjusted to suit the digital environment, as this is a key factor in delineating the group.

●      The specific social situation in which individuals are expected to make choices or express rejection must be outlined with clarity and precision. Respondents in virtual settings may interpret situations differently than they would in real life, where direct observation plays a significant role in understanding social contexts.

●      The social situation connecting group members must be authentic, meaning it should have genuine relevance to the life of the group itself.

●      The researcher must ensure that the test instructions allow participants the freedom to choose or reject as many individuals as they wish, without being constrained by a specific number. Therefore, questions must be formulated in an objective manner that permits group members to express their opinions freely.

 Group members must understand the significance of the test being administered. Consequently, the person conducting the test must consider the choices and rejections made by the members when reorganizing the group or initiating any activity requiring collective effort (University of Karbala, 2016).

The sociometric test relies on two primary tools to examine relationships in virtual spaces:

●      The questionnaire, which can be either paper-based or electronic.

●      Interviews, facilitated through video and audio communication in the virtual space.

Furthermore, the application of the sociometric test to the study of virtual relationships depends on two essential conditions:

●      First, the nature of the subject matter must justify the use of the sociometric method.

●      Second, the study must be conducted within the framework of the systemic approach, as the sociometric model is an integral part of this theoretical framework.

### 7. Conclusion:

493 – www.imcra.az.org, | Issue 8, Vol. 8, 2025
The Sociometric Model in Media and Communication Research: A Projection onto Virtual Relationships
Samia Bouguerra
Lilia Ain Souya

In conclusion, the sociometric model, or sociometric measurement, represents a highly effective and valuable method for studying relationships within society. Due to its numerous advantages, it can be effectively applied to the study of virtual relationships in the networked society. This is especially relevant given that virtual connections often extend from real-life relationships, such as those within work environments, friendships, family ties, and professional groups. Researchers have noted that these virtual relationships may even outlast real-world ones and, in some cases, evolve into in-person interactions.By examining the social dynamics that govern interactions among users in virtual communities, researchers can gain deeper insights into the group's emotional and social climate, identifying patterns of acceptance and exclusion. To ensure a valid epistemological position in this context, the researcher must conduct their study within the systenic approach, where the sociometric model serves as one of its primary measurement tools. Moreover, as with other models in media and communication research, such as Roland Barthes' semiological analysis model, which has been further developed, the Moreno model can also be updated through multidisciplinary studies. This not only ensures the model's alignment with the field of specialization but also underscores its relevance and applicability in measuring relational dynamics within virtual contexts.

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495 – www.imcra.az.org, | Issue 8, Vol. 8, 2025
The Sociometric Model in Media and Communication Research: A Projection onto Virtual Relationships
Samia Bouguerra
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