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A Treatise to Metrics and Frameworks for Semantic Social Networks: A Systematic Literature Review

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ABSTRACT *In the semantic web, each piece of data, referred to as metadata, is accompanied by meaningful data. This information is then used by machines to make calculations-based decisions. This implementation of semantic web methods in social networks shapes the premise of Semantic Social Network (SSN). SSN creates a virtual group of friends and family where people can share resources, thoughts, by staying associated with their loved ones. This semantic social data can be used to gauge different conduct ascribes of SSN individuals utilizing measurements. The extricated results from these measurements can help experts of SSN to settle on better choices in giving offers, rewards, badges to individuals. There are frameworks available for semantic social network analysis as well. A systematic literature review (SLR) is presented in this paper by leading an overview of available metrics to calculate semantic social network member traits and frameworks used for social network analysis. The basic SLR has been aggregated by looking into research articles distributed in all around presumed scenes somewhere in the range of 2000 and 2020. A sum of 22 papers was painstakingly filtered through an orderly interaction and grouped appropriately. The essential target of this precise investigation is the assortment of all-important examinations on currently available metrics to calculate members ascribes of the semantic social network and the frameworks used for semantic network analysis. As a result, six metrics and nine frameworks are extracted and presented. Moreover, this paper also discusses possible ways to improve metrics for a better semantic social network (SSN) analysis. In recent years, countless efforts have been made in the Semantic Social Network Analysis area to measure ascribes and define frameworks. Consequently, it is imperative, to sum up, gather, break down, and group the research about this area. The reason for this research is to introduce an extensive deliberate literature review for the aggregation of metrics and frameworks used in semantic social network analysis SSNA.*

Keywords: Semantic Social Network, Metrics for Semantic Social Network, Social Network Analysis, Semantic Social Network Frameworks, SNA, SSN

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INTRODUCTION

Individuals are continuing with extremely bustling life. Having comforts and opulence still must be watchful of relationships. Social applications such as Facebook, Twitter, and LinkedIn address the shortcomings by allowing them to remain associated with clients, customers, companions, and family. In a particularly rich climate having distinct people with distinct conduct ascribes, there ought to be methods of consuming and processing this relevant knowledge additionally, a semantic social network website is being developed along these lines. Graphs can be used to structure semantic social networks [1].

The graphic representation of semantic social information should be possible using ontologies, i.e., an illustration with centroids and edges. [2]. Actions, behaviors, ascribes, content, etc., are depicted by nodes and their interconnection denotes relations. In the Semantic Network, information is added along each bit of information to be processed by the intelligent algorithms, so different calculations can be intended to comprehend and

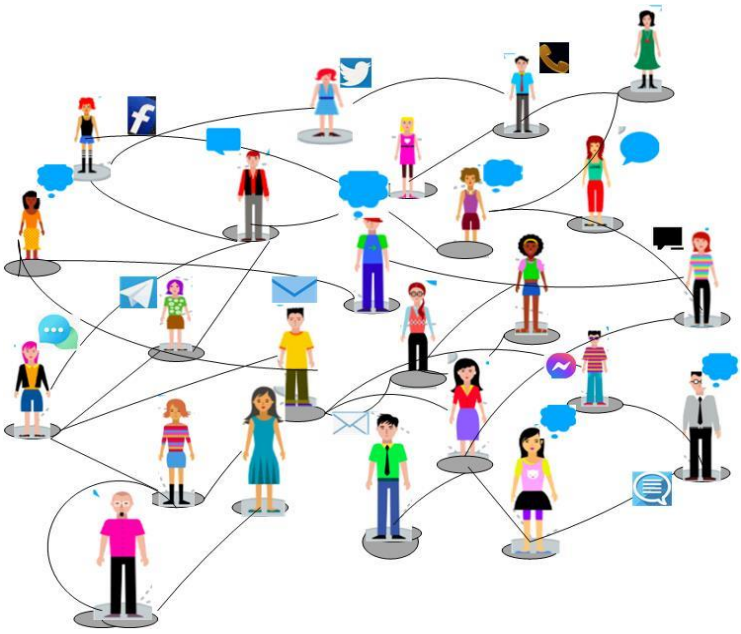

Figure 1 - Social Network

deal with this social data appropriately. Combining social and semantic metadata can aid in social discovery and precision. [3]. People have reliably been endeavoring to expect and evaluate the member's social ascribes to comprehend things more plainly and act as needs are. Estimations are numbers that uncover colossal data about a joint effort under question. Metrics are examined in this paper, which figure a user's characteristics in an SSN. Robert's work is extensive, and his cutting-edge depiction of data using charts with centers and line segments simplified relevant knowledge to connect to and see clearly. In Figure 1, a true depiction of a semantic social network is presented, in which nodes can represent members, ascribes, features, and content. Whereas the lines are representing the relationships or associations between them.

Schemas for the Web Of data can be considered official and sincere terms.[4]. By using the solid base portrayed by, few estimations are furthermore proposed to determine the client's activity and interest factors. There is a test in doing social data handling as there are so numerous web-based media/organizing destinations. The absence of information sharing features the dim mysteries of SSN specialists. There is a conveyed model for SSN dependent on the semantic standards to fill this opening [5]. With such a hole occasions or exercises cannot be understood and dissected appropriately. MINGZHE et al. [6], presented a model that breaks down occasions. The quantitative procedure used to ascertain social attributes of the SSN part needs more assessment, as of search of verifiable data, one may disregard more far-reaching subjects and affiliations. Keeping up the profound focus on the numbers just, there is consistently a test to miss shocking huge information that can help improve outcomes in a superior manner. Few measurements are examined in this paper; the main measurement is about the activity factor estimation. This measurement inspects the activity of a user in SSN by computing the tasks/actions performed by the user. The subsequent measurement computes the interest factor dependent on the weighted proportion of occupations performed and the weighted proportion of time spent on errands. Furthermore, SSN density, closest companion, social factory calculation metrics are discussed in detail. There are a few frameworks available that are used to analyze the social network as well.

This study proposes a blend technique to detect anomalies in online social networks combines graph theoretic features and sensitive cluster analysis. Both local and global analyses are used in the proposed strategy. The number of nodes and edges in a local graph is used to represent network user behavior. The egonet, which is a starkness- clique Ness Score, is calculated using the user node's local attributes and its 1-level vicinity. In the most recent years, countless efforts have been made in the Semantic Social Network Analysis area to measure ascribes and define frameworks. Consequently, it is imperative, to sum up, gather, break down, and group the research regarding this area. The reason for this research is to introduce an extensive deliberate literature review for the aggregation of metrics and frameworks used in semantic social network analysis SSNA. The commitments of this paper identified with the SSNA are as per following. We present the background or foundation work regarding SSNA section 2. section 3 presented the research method of analysis by investigating questions, exclusion and inclusion criteria, and search strings to collect learning can be described on SSNA. using authentic channels. Research results or analysis are discussed in section4 in tabular form and metrics for calculating ascribes of the semantic social network are presented in section 5. The frameworks used in the social network analysis are discussed in section 6. Moreover, section 7 presents the conclusion of this literature review.

2. BACKGROUND

In recent literature, endeavors for estimations of user ascribes concerning the semantic social network utilizing measurements have been started. These estimates are then utilized by the SSN authorities in the planning and recommendation of offers to users. SSN Web applications for Semantic Social Networks are brimming with information on people, their families, and their needs and wants. It is critical to come to terms with this social data to give quality results to service users. SSN's essential idea is to add semantic metadata to every scrap of information. Even so, from another study, social network viewers' traits can differ depending on the medium of communication, such as email, face-to-face, or phone. [7]. These additional pieces of data portray content itself, yet they also give significance to it and make an association between arranged scraps of information, completely aimed at improving the idea of the Internet.

There are a ton of SSN websites accessible, and their individuals need more control to manage their data and correspondence across various websites. Individuals are proceeding with a clamoring life; they are appreciating an acceptable way of life and need a second to take care of relationships. Web-based social media sites occupy this space by giving a stage where individuals can email, talk, or stay associated. So now, long-range SSN sites are brimming with data about individuals and their practices e.g., likings and interests. This social data can be handled to make better choices. Social subtleties can be tended to as ontologies i.e., a chart having attributes and practices as hubs & edges to address connections. Jason's proposed three-level engineering involves two - way organization among people, conceptual frameworks they use, and opinions that occur within these ontologies. [8].

Semantic web has many applications, for example, when implemented to a networking site, it forms an SSN, as well as when deployed to IoT, it forms a concept of internet of things. WoT[9]. The Graphical portrayal of the hubs

associated through edges makes the idea clearer and more straightforward. People have consistently attempted to anticipate and assess characteristics in order to comprehend things more clearly and act similarly. In this paper, not many proposed measurements are examined that can figure out a few practices or qualities of the SSN individuals quantitatively. Measurements are numbers that uncover critical information about an association under question. They uncover to you the specific assessment about how the cycle is functioning and offer a base to you to suggest improvements. In characterizing measurements to compute social credits, barely any objectives were drawn e.g., to help in estimating, making fitting moves, presenting better approaches for estimating social ascribes, and taking out old ways that are not, at this point, utilized in the social semantic organization.

Ontologies graphically have a more prominent inclination to use charts which are considered as a theoretical procedure for showing information. The relationships between hubs, ontologies, or thoughts address the relationship that interfaces them semantically [10]. Utilizing such a technique where social data is addressed in edges and exercises. Social network ascribes are addressed as charts semantically. Then, at that point, the sensible and numerical conditions can be applied to extricate valuable & significant data out of it for making proper choices. At present, there are extremely less measurements accessible to address semantic interpersonal organization data quantitatively. There are various recommender systems designed to suggest offers, advertisements, and news keeping in mind the interests of SSN authorities. However, Pazahr et al., proposed a system keeping user/member interests in mind[11].

Keeping Robert's establishment work another enthusiast proposed a few more measurements to quantify activity factor, interest factor, social factor, and best companion of a node [12]. Activity factor metric gives the number of undertakings/occasions are performed by the social semantic organization part. The level of assignments done by individuals can change from more significant levels to moderate levels and surprisingly low levels, contingent on the idea of action and premium. In this manner, these orders of various exercise variables can be used in acquainting various highlights with various action factor levels by the organization proprietor. Utilizing the activity metric, individuals can be characterized into bunches relying upon their action factor. Mathematically, Activity $\propto$ Tasks performed; Action is directly comparative with the number of tasks performed by the part from the semantic organization. The exercises/undertakings may incorporate sharing media, data, remarks, messages, chats, messing around with family and companions, and likes/dislikes on the common substance. The movement performed by a part can likewise be perusing or checking on posts shared by other relatives or companions.

While interest factor metric can be utilized to recognize the likings of the social semantic organization part. This measurement ascertains the interest by breaking down the time spent on explicit action by applying numerical formulae. Hence, interest can be distinguished by the recurrence of the performed movement drawing in part's most extreme time. Presently, if a person from SSN consumes most of his/her time in a specific action, by then that specific movement can be considered as his/her interest. Henceforth, the interest factor metric can be determined by (Weighted proportion of exercises + Weighted proportion of time spent) x 100. The recurrence of action rather than a solitary action because the movement is performed, and time spent on action are interrelated for more exact computations. A long action versus various little exercises has a distinctive movement factor that may cause invalid interest computation. By utilizing this measurement part's most enjoyable assignments can be resolved and SSN specialists can present highlights of comparative interest.

Similarly, social factors can help in identifying the user’s social circle of family and friends. Some people on social media are highly active and have a lot of friends and followers, while others have medium or little groups of people for interactions. People with high levels of activities and interactions with different people can be considered as having high social factors. Moreover, the best companion metric can also be used to identify users with similar interests. Using social information, activity and time factors can be used to help determine the best friend. The opportunity of being selected as a best friend is more notable than the other factors mentioned above. Social semantic organization specialists can utilize various proposals to individuals with lower movement elements to rouse them. Subsequently, the utilization of measurements for the semantic informal organization can help a great deal in building more impressive and intriguing social web stages. Ultimately, a short contextual investigation approves the results regarding the proposed measurements.

3. RESEARCH METHODOLOGY

The research methodology used by this paper is the systematic examine the literature. The goal of this is expedition is to identify currently available metrics to calculate attributes or ascribes of semantic social network individuals and existing frameworks used to analyze social networks. The methodology we followed is presented by [13] to make research unbiased about data determination as well as outcomes in portrayals. The exploration strategy for this deliberate planning a study has been conducted outlined as follows in figure 2:

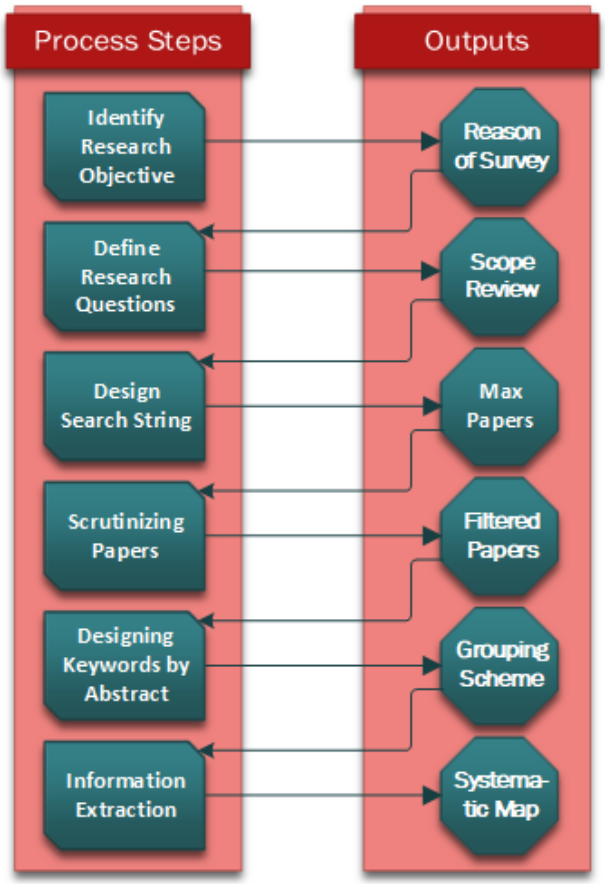

Figure 2 - Research Method

3.2. RESEARCH QUESTIONS (RQ)

Research Q1: What techniques are used to process social information and its availability in semantic social networks?

Research Q2: How social information is represented and manipulated?

Research Q3: What are the currently available metrics to calculate the semantic social network member's behavioral traits?

Research Q4: Which frameworks are utilized to identify the hierarchical design in explicit domains?

3.3. SEARCH STRING

We look for important and authentic investigations on the exploration domains in the second stage of systematic literature review. A search string in this case is used to assemble distributed articles identified with the exploration domain. Our primary search string was metrics for semantic social network analysis. We used various authentic digital libraries and search engines for information collection. To best answer our objectives, we compile the results manually.

Table 1- Search String

Sources	Search String	Context
Springer, IEEE Xplore, ACM, Elsevier	("Semantic social network" OR "SSN") AND ("Social network analysis" OR "SNA" OR "Frameworks" OR "Frameworks for social network analysis") OR ("Metrics for semantic social network")	Semantic Web

3.4. SCREENING OF RELEVANT PAPERS

Every one of the documents in the inquiry was not correctly applied to explore questions, in this way, they should have been evaluated by the real significance. We utilized the pursuit process characterized by Dyba et al. [14] for the screening of pertinent papers. Papers were chosen dependent on their titles in the primary screening stage. Those research papers were avoided that were unimportant to the research domain. We examine the literature and conclusion of each concrete manner in the preliminary screening stage.in the second period of screening. Besides, inclusion and exclusion standards are additionally used to screen papers.

Following articles were excluded as per decision:

- Published studies other than journals, conferences, and specialized reports.
- Studies without authentic sources.
- Studies where the information assortment technique was hazy.
- Studies published in other languages.
- Studies published before 2003.
- Studies excluded using the search string.

Papers have been chosen except above-discussed criteria and inspecting the abstract and conclusion in the following screening stage.

3.5. KEYWORDING USING ABSTRACT

We utilized a cycle characterized by Petersen et al. [15] to track down the significant papers through keywording by utilizing the abstract. The two-staged keywording was accomplished. In the main stage, an abstract was analyzed that helped in distinguishing the ideas and catchphrases that mirrored the commitment of studies. A more elevated level of comprehension is created based on these watchwords in the subsequent stage. We have utilized catchphrases to frame and group classes for the planning of reviews.

3.6. QUALITY ASSESSMENT

For the most part, in an SLR, to evaluate the nature of screened papers' quality assessment (QA) is performed. The survey has been intended to quantify the nature of the screened papers. The quality assessment is done by following the mapping study in this SLR [16].

a) The examination adds to metrics for Semantic

Social Networks or framework. Research question responses were "Yes (+1)", "part of the way (0.5)", and "No (0)".

b) The research provides vivid answers in the field of measurements for behavioral traits of the SSN member. The possible answers for this examination question were "Yes (+1)", "part of the way (0.5)", and "No (0)".

c) The cited published studies by other studies and potential responses for this research question were: "part of the way (0)" if the reference check is 1 to 5, "No (−1)" no citation, and "Yes (+1)" if the reference check is more than five.

d) Are recognized publication sources used and the response to this question has been assessed by JCR and CORE ranking conferences as shown in Table 2.

Table 2- Quality Criteria

Sources	Ranking	Score
Journal	Q1	2
	Q2	1.5
	Q3 or Q4	1
	Not in JCR	0.5
Conference	Core A	1.75
	Core B	1.5
	Core C	1
	Not in CORE ranking	0.5
Book		1

Study Selection Process

The determination process results are shown in Table 3. Initially, 1318 papers were extracted because of the search protocol application on selected databases. Keywords, process criteria, abstract, titles and complete article-based filtering process has been applied.
106 papers were checked for duplications and 63 were extracted after the removal of duplicates. Furthermore, in the screening process of abstract and complete articles, 22 were extracted.

Table 3- Articles Determination Process

Phase	Process	Selection Criteria	IEEE	Springer	Science Direct	Other	Total
1	Search	Keywords	983	201	98	36	1318
2	Screening	Title	59	23	13	11	106
3	Screening	Duplication Removal	31	17	8	7	63
4	Screening	Abstract	11	7	5	5	28
5	Inspection	Complete Article	9	5	3	5	22

3.7. Information Extraction Methodology

To give a bunch of potential responses to research questions, the information extraction methodology has been applied.

R.Q.1: Which significant research has been directed in calculating the member's traits of semantic social networks?
R.Q.2: Which tools or frameworks have been used for social network analysis?
R.Q.3 How are graphs used to represent social information?
R.Q.4: How metrics are applied on social information graphs to calculate behavioral traits?
R.Q.5: Which are currently available metrics for semantic social network (SSN)

4. Analysis

Outcomes regarding SLR research questions defined in section 3.4 are described in this section. Mapping of research questions with screened research studies to answer and to make contributions towards semantic social networks.

4.1. Results Selection

We have compiled 22 studies regarding research questions about metrics and frameworks in semantic social network analysis.
Table 4 shows the filtered articles with publication channels. Publishing channels were divided into two main categories, with 40 percent of research published in conference and 60 percent published in journals

4.1.1 Assessment of R.Q.1: Which significant research has been directed in calculating the member's traits of semantic social network?

Table 5 - Publication Channels

Publication Sources	*Ref*	*Channel*	*%*
Web Information Systems Engineering International Conference (**Springer**)	[1]	Conference	4.4%
Current Issues in IT-Management (**Citeseer**)	[2]	Journal	4.6%
The Learning Organization	[3]	Journal	4.6%
Semantic Web, vol. 5	[5]	Journal	4.6%
IEEE Access (Volume: 7)	[6]	Journal	4.6%
2008 **IEEE** 24th International Conference on Data Engineering	[17]	Conference	4.4%
Entropy 2020, 22(7), 753; (**MDPI**)	[18]	Journal	4.6%
British Journal of Educational Technology	[4]	Journal	4.6%
Tenth International Conference on Information Visualization (IV'06)	[7]	Conference	4.4%
European Semantic Web Conference (**Springer**)	[8]	Conference	4.4%
IEEE Internet of Things Journal (Volume: 6, Issue: 6, Dec. 2019)	[9]	Journal	4.6%
Journal of Computing, ISSN 2151-9617	[12]	Journal	4.6%
Journal of Interactive Marketing Volume 27, Issue 4 (Science Direct)	[19]	Journal	4.6%
PloS one	[20]	Journal	4.6%
2011 **IEEE** Third World Conference on Protection, Security, Risk and Trust and 2011 IEEE Third International Conference on Social Computing	[21]	Conference	4.4%
2010 International Conference on Advances in Social Networks Analysis and Mining	[22]	Conference	4.4%
International Journal of Computer Applications Technology and Research	[23]	Journal	4.6%
2010 3rd International Conference on Computer Science and Information Technology	[24]	Conference	4.4%
2011 **IEEE** Third International Conference on Privacy, Security, Risk and Trust and 2011 IEEE Third International Conference on Social Computing	[25]	Conference	4.4%
International Journal of Computers and Applications	[26]	Journal	4.6%
International journal of environmental research and public health (**MDPI**)	[27]	Journal	4.6%
2012 **IEEE** Sixth International Conference on Semantic Computing	[28]	Conference	4.4%

4.1.2. Assessment of R.Q.2: Which tools or frameworks have been used for social network analysis?

4.1.3. Assessment of R.Q.4: How metrics are applied on social information graphs to calculate behavioral traits?

Firstly, social information is represented in the form of ontologies and graphs. Then metrics are applied to the graphs to get useful information out of them. The following papers show how metrics are applied to the graphs in depth.

1. [2] Representation of social information graphically and applying graph metrics for analysis.
2. [12] Metrics to calculate SSN member attributes using graph metrics.
3. [1] SSN data analysis using graph metrics for anomalous relations.
4. [18] The analysis of SSN graphs using metrics

Table 4 - Classification and Quality Assessment Scores. SSN: Semantic Social Network

Reference	*Channel*	*Year*	*Domain*	*Major Focus*	*a*	*b*	*c*	*d*	*Scores*
[1]	Conference	2012	SSN Graph Metrics	SSN data analysis using graph metrics for anomalous relations.	1	0	1	1	3
[2]	Journal	2008	SSN Graph Metrics	Representation of social information graphically and applying graph metrics for analysis	1	1	1	1	4
[3]	Journal	2005	SSN Analysis	Importance of semantic metadata for SSN metadata	0	1	1	1	3
[5]	Journal	2014	Framework	Communication between SSNs using distributed architecture	0	0.5	1	1	2.5
[6]	Journal	2019	Model	Cross SSN events analysis using model	1	0	1	0.5	2.5
[17]	Conference	2008	SSN Graph Security	Attacks on SSN to send spam email	0	0.5	1	1	2.5
[18]	Journal	2020	SSN Graph Metrics	The analysis of SSN graph using metrics	1	1	1	2	5
[4]	Journal	2019	Semantic Web	Application of semantic web	0	0.5	1	0.5	2
[7]	Conference	2006	SSN Analysis / Framework	Proposed a new SNA software	0.5	1	1	1	3.5
[8]	Conference	2007	SSN Analysis / Model	Semantic social network analysis using three layered model	1	1	1	2	5
[9]	Journal	2019	Semantic Web WoT	Semantic web application in WoT	0	0.5	1	0.5	2
[12]	Journal	2011	SSN Graph Metrics	Metrics to calculate SSN member attributes	1	1	1	1.5	4.5
[19]	Journal	2013	SSN Metrics using Framework	Metrics for Social network to manage social media	1	1	1	1	4
[20]	Journal	2019	SSN Metrics using Framework	Metrics for social network analysis and classification of Twitter user traits	1	1	1	1.5	4.5
[21]	Conference	2011	SSN Analysis using Metrics	SSN member's behavior analysis	1	1	0.5	1	3.5
[22]	Conference	2010	SSN Metrics to Trust Networks	SSN member's trust and influence in trust network	1	0.5	1	1.5	4
[23]	Journal	2015	SSN Analysis	SSN analysis using metrics	0.5	0	1	1	2.5
[24]	Conference	2010	SSN Data Ontologies	Representation of SSN data using ontologies and application of semantic vocabularies	1	0.5	1	0.5	3
[25]	Conference	2011	SNA	SNA and it effects	0	0.5	1	1	2.5
[26]	Journal	2019	Semantic Web	Semantic web application in all domains	0	0.5	1	0.5	2.5
[27]	Journal	2018	SNA Framework / Tool	Information extraction tool for SNA	0	0.5	1	1.5	3
[28]	Conference	2012	SNA Metrics	SNA to identify trends	1	0.5	1	1	3.5

Table 6 shows studies regarding the frameworks available for semantic social network analysis.

Table 6 - SNA Frameworks & Tools

Reference	*Type*
[5]	Framework
[7]	Framework
[8]	Model
[19]	Framework
[20]	Framework
[27]	Tool

4.1.4. Assessment of R.Q.3: How social information is represented in the form of graphs?

Table 7 shows the research into how impact is displayed in graphs and ontologies

Table 7 - Social Information Representation

Reference	*Type*	*Method*
[1]	Graph	Metrics
[2]	Graph	Metrics
[18]	Graph	Metrics
[12]	Graph & Ontologies	Metrics
[24]	Ontologies	Metrics

4.1.5. Assessment of R.Q.5: Which are currently available metrics for semantic social network (SSN)?

We identified the following studies, regarding the metrics for semantic social networks.

Table 8 - Metrics for Semantic Social Network

Reference	*Description*
[1]	SSN data analysis using graph metrics for anomalous relations.
[2]	Representation of social information graphically and applying graph metrics for analysis
[18]	Analysis of SSN graph using metrics
[12]	Metrics to calculate SSN member attributes
[19]	Metrics for Social network to manage social media
[20]	Metrics for social network analysis and classification of Twitter user traits
[21]	SSN member's behavior analysis
[22]	SSN member's trust and influence in the trusted network
[28]	SNA to identify trends

4.2. Quality Assessment Score

In Table 4, assessment scores are presented. 63% of studies have above an average score, 45% of papers have an average score 9% percent have a below-average score as shown in Table 9. This table will help researchers in selecting relevant papers.

Table 9 - Quality Assessment Score

References	*Score*	*Total*
[4], [9]	2	2
[5], [6], [17], [23], [25], [26]	2.5	6
[1], [3], [24], [27]	3	4
[7], [21], [28]	3.5	3
[2], [19], [22]	4	3
[12], [20]	4.5	2
[8], [18]	5	2

5. Taxonomy

Taxonomy is critical to recognize the most recent limit of SNA study, planning the different on-going endeavors and examination interest in SNA points.

Our writing survey incorporate variation of the traditional SNA, distinguishes well known models involved by scientists for addressing what's more picturing informal communities, examine current and future SNA advancement. Our delineation of the SNA scientific categorization in view of diagram portrayal is displayed in Fig. They are Metric, Network Structure, Irregular Walks, Temporal Graph and Visualization.

6. Discussion

In this section, we have presented a detailed discussion about how social information is represented and how to make a graph Metrics are used to calculate cognitive and behavioral attributions. In recent research, attempts have been devoted to use metrics to calculate social network users' characteristics or behavioral characteristics

Developing administrative decisions while maintaining semantic social web applications includes creating metrics to be used by ontologies.

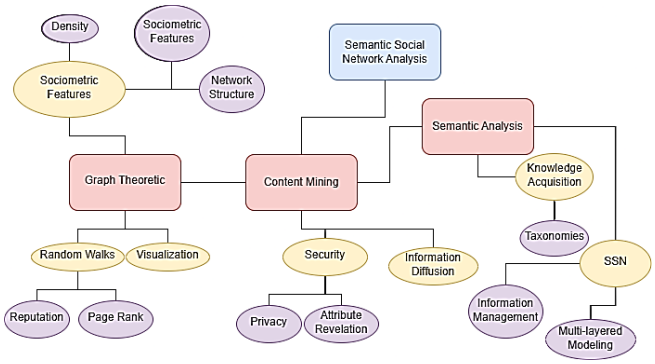

Figure 3 - Taxonomy

Semantic Social Network (SSN) web services contain important information about persons, their families, their likes and dislikes. The well-being of the hour is to process this social data so that users can get better results. The primary goal of SSN is to add semantic metadata to each data snapshot. These extra bits of information depict content itself, yet they additionally give importance to it and make a connection between assorted snippets of data, fully intent on improving the nature of the Internet. There are a lot of social networking platforms available, and their members need more control to deal with their information and correspondence across different stages. To fill this void, there is a pioneering work for social networks based on semantic norms.

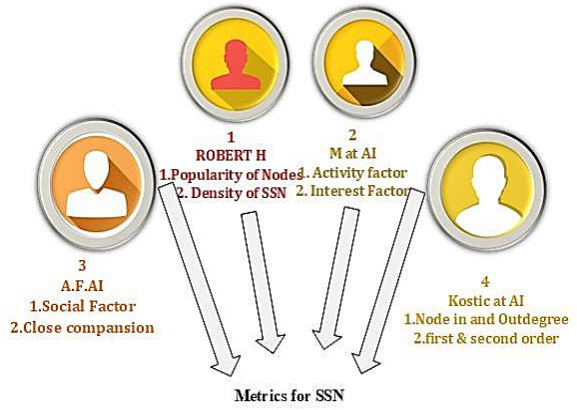

Figure 4 - Metrics for SSN

Robert's work is extensive and his cutting-edge portrayal of information in diagrams with hubs and edges made social data simple to relate and see outwardly. Robert H originally proposed not many measurements that become the center portrayal of interpersonal organization data as ontologies [2].

Robert's work turns into the establishment for applying diagram measurements to ascertain the SSN part's qualities. Utilizing graphical portrayal, certain outline properties can be determined. They can be seen as the impression of a given wonder in the outline model. Chart measurements can help in recognizing different parts of information numerically. Robert depicts informal community thickness as the proportion of edges to the number of potential edges. This verbalization communicates that thickness can be utilized to distinguish the part's association in the informal organization.

Also, to see an individual's acclaim in his area; we need to break down his immediate connections around there. Robert displayed in graphical portrayal the hub's prominence as the no. of edges per hub. Be that as it may, without different boundaries it is hard to introduce example are the hubs addressing practices, individuals or undertakings. I.M. at al. [12] likewise planned not many chart measurements to quantify social attributes. The plan Activity A factor metric used to determine how closely an individual is associated with his or her circle of friends.

Notwithstanding does not distinguish that the part was dynamic consistently or for only a few days in the entire month or year. There is a major vagueness in this movement factor metric, positions/tasks/exercises finished are not viewed as in the specific period. Time pertinence is absent in this movement factor metric.

Without time significance in this metric the arrangement of the high, medium, and low action factor computation may cause wrong impacts. Interest factor metric features SSN part's number one exercises by breaking down the occasional

Challenge and Issues

A three-layered architectural style for building semantic social networks consists of a socioeconomic layer, an ontology layer, and a concept layer. This space encourages the growth of relationships not only within a layer, as well as between layers. We proffered recommendations for trying to extract striking similarities among both concepts and assisting in the spread of that similarity across a range of ontologies, as well as an integration relationship between ontologies. In a social network, this range connection can be used to find oneness. In turn, audience members can take advantage of the newly solid relationships. to look for people who are closer to them based on the design of their experience and understanding. We only used traditional SNA measures for this purpose. The central premise of this task is that this discovery of a new human-to-human relationships will aid in smooth process, ontology linking, and sharing of resources. This needs to be assessed experimental measurements.

There are still critical problems to investigate: every one of these connections are not equal and attempting to exploit them with traditional SNA tools can be completely pointless same likewise that treating "claims to love" and "claims to hate" relations as the same would cause problems. As a result, it is critical to categories the connections and

relations that were presented in terms of the metrics that can be used on them. We also hope to expand on this work by finding specific purposeful clusters of people. We intend using this data to create a social and semantic mesh setting. Furthermore, the value of computing these systems may become noteworthy. We haven't raised this point because the majority of the given measures are examples, but it may become such an issue if the systems and metrics must be evaluated in real - time basis.

positions/undertakings performed by him/her and devoured his/her most extreme online time. In any case, the time - frame is not considered during the simulation of proposed results in the equity factor metric. There is a boundary named Seed that controls the number of errands finished in a day, to be essential for high factor class. To recognize the worth of seed there might be another measurement to compute the normal action pace of the multitude of individuals from the social semantic organization to figure out what ought to be the ideal incentive for it.

Kostić et al. [18] additionally examined the SSN diagram utilizing measurements to settle hub in and out-degree and first and second request impact. Notwithstanding, during the computation of undirected charts, the progression of social data and its reliant metadata cannot be overlooked. The estimations may deliver great outcomes yet for certain presumptions. S.M et al. [24] put forward another approach to address semantic social data utilizing ontologies. Semantic web vocabularies are utilized as a combination to beat concealed issues. Be that as it may, experimental assessment is needed in semantic profiling to approve and bring about a superior conceivable way.

Another scientist A.F et al. [29] suggested chart measurements to determine the Close Companion and Social Factor. In semantic organization metadata is remembered for a wide range of social data, so that machine calculations can control data too.

To make social in-development accessible, semantic metadata ought to be converged with social metadata [3]. The usage of movement and time variables can help in determining the best friend utilizing social data. More importantly, the above factors are more conspicuous in the chance of being picked as the closest companion. Notwithstanding, there is no thought of timeframe in the above numerical condition.

7. Conclusion

Qualities estimating measurements for the individuals from semantic social websites can assist us with distinguishing reputation, rehearses, and other behavioral attributes. Which can provide minimal state factors to be used in making proactive decisions for SSN progression.

These measurements not just assist us in distinguishing provincial and disdained exercises which can be killed from SNN to make it steadier and more usable. This undeniable level method for addressing the attributes of an SSN utilizing chart measurements opens a horizon for other energetic analysts to characterize further measurements. More ordinal realities from these measurements can assist specialists with improving SSN, useful, and significant.

8. References

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