

Street Art as Visual Information: Mixed Methods Approach to Analyzing Community Spaces

Laura W. Dozal,

University of Arizona, School of Information
Tucson, Arizona

email: lwerthmann@email.arizona.edu



Keywords: Social Network Analysis; Visual Information; Mixed Methods; Street Art

Abstract

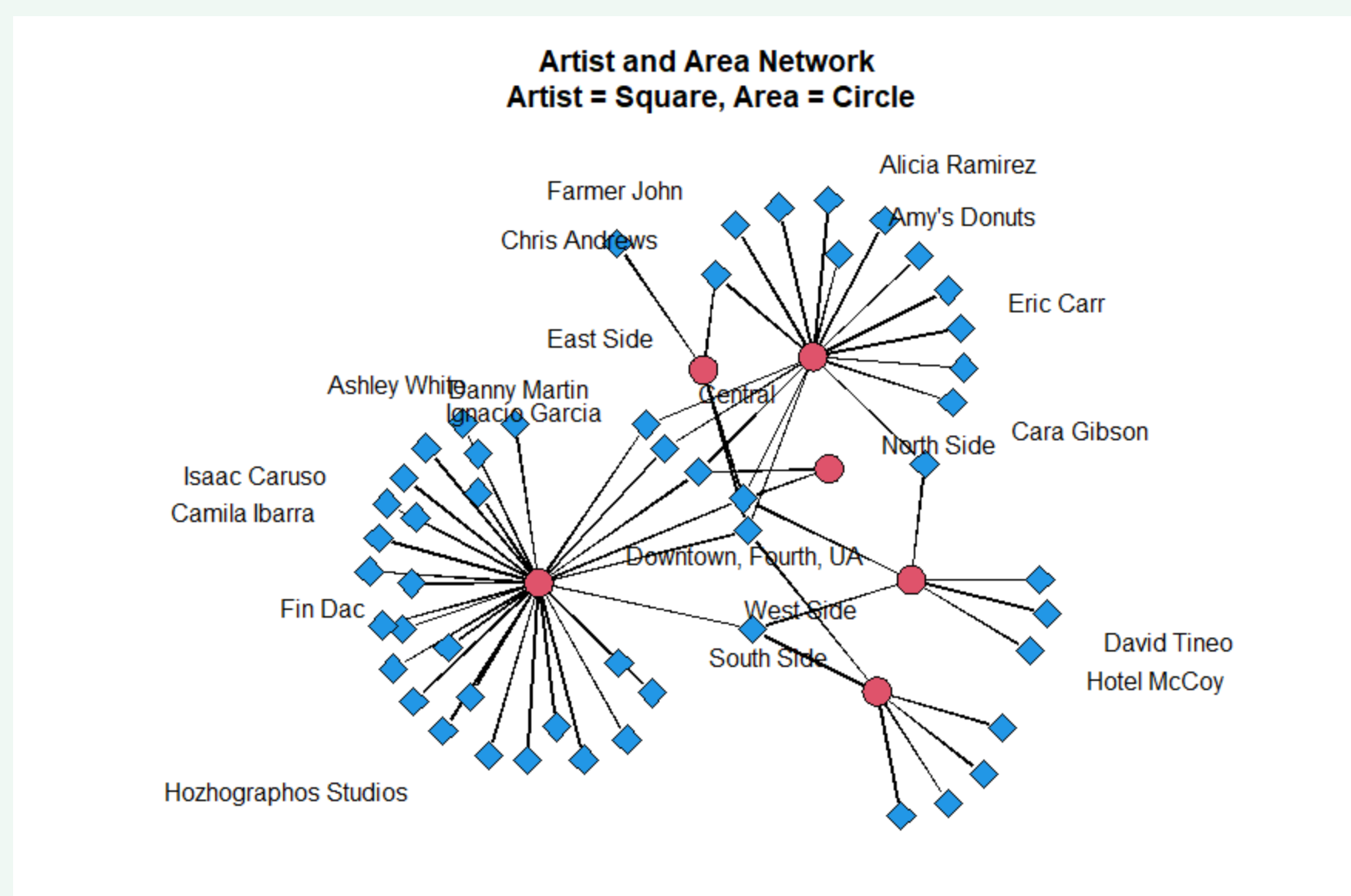
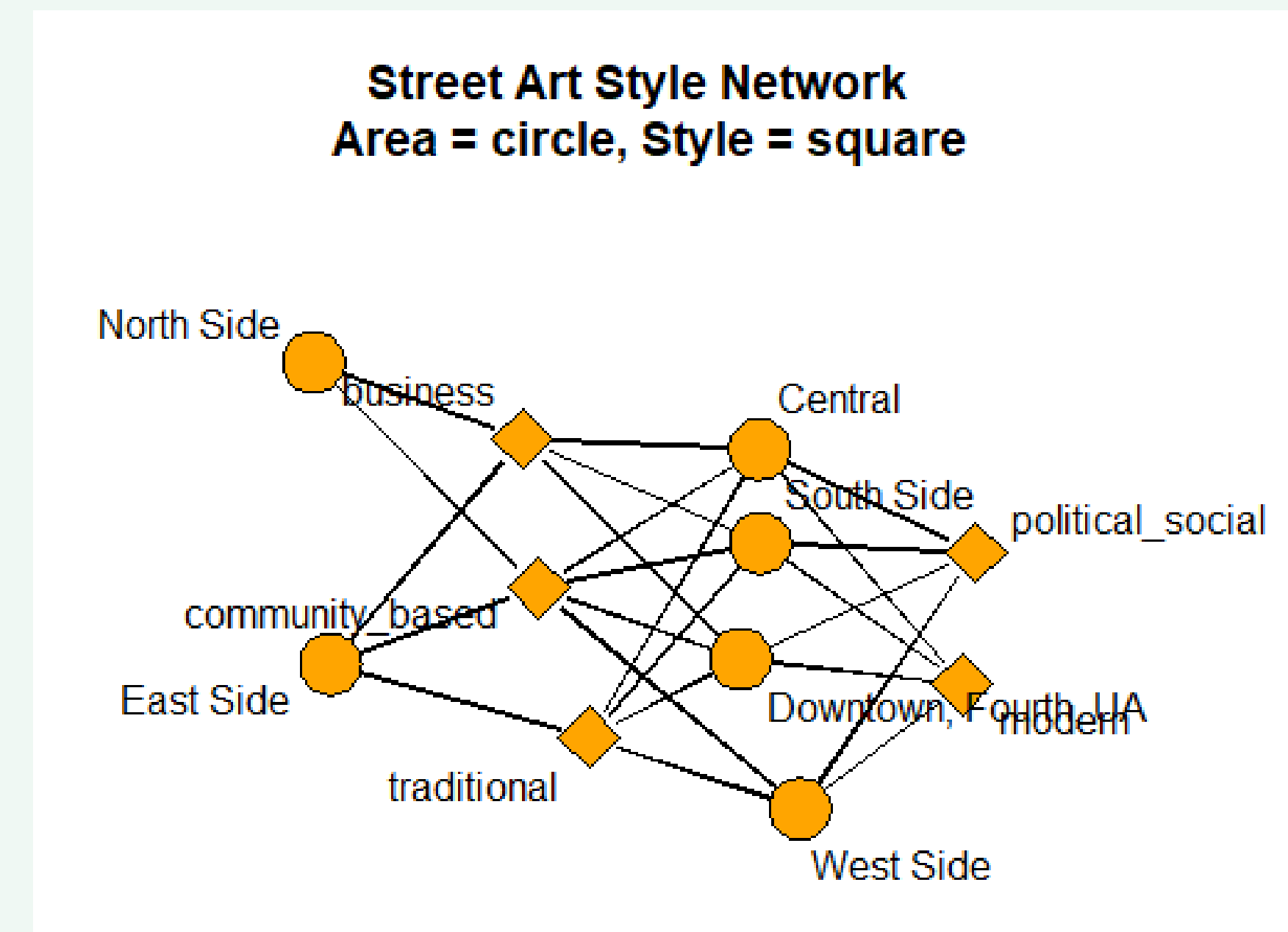
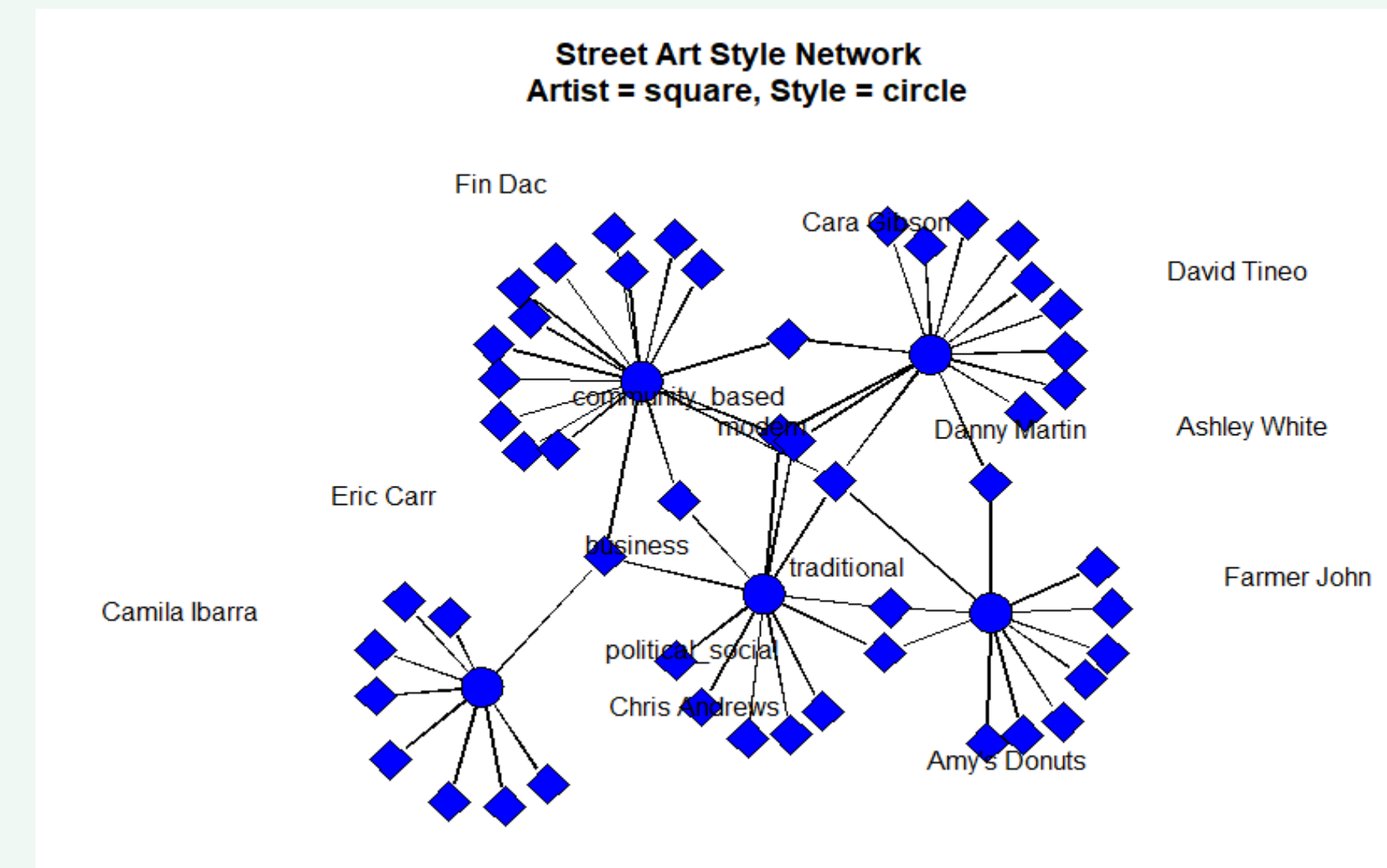
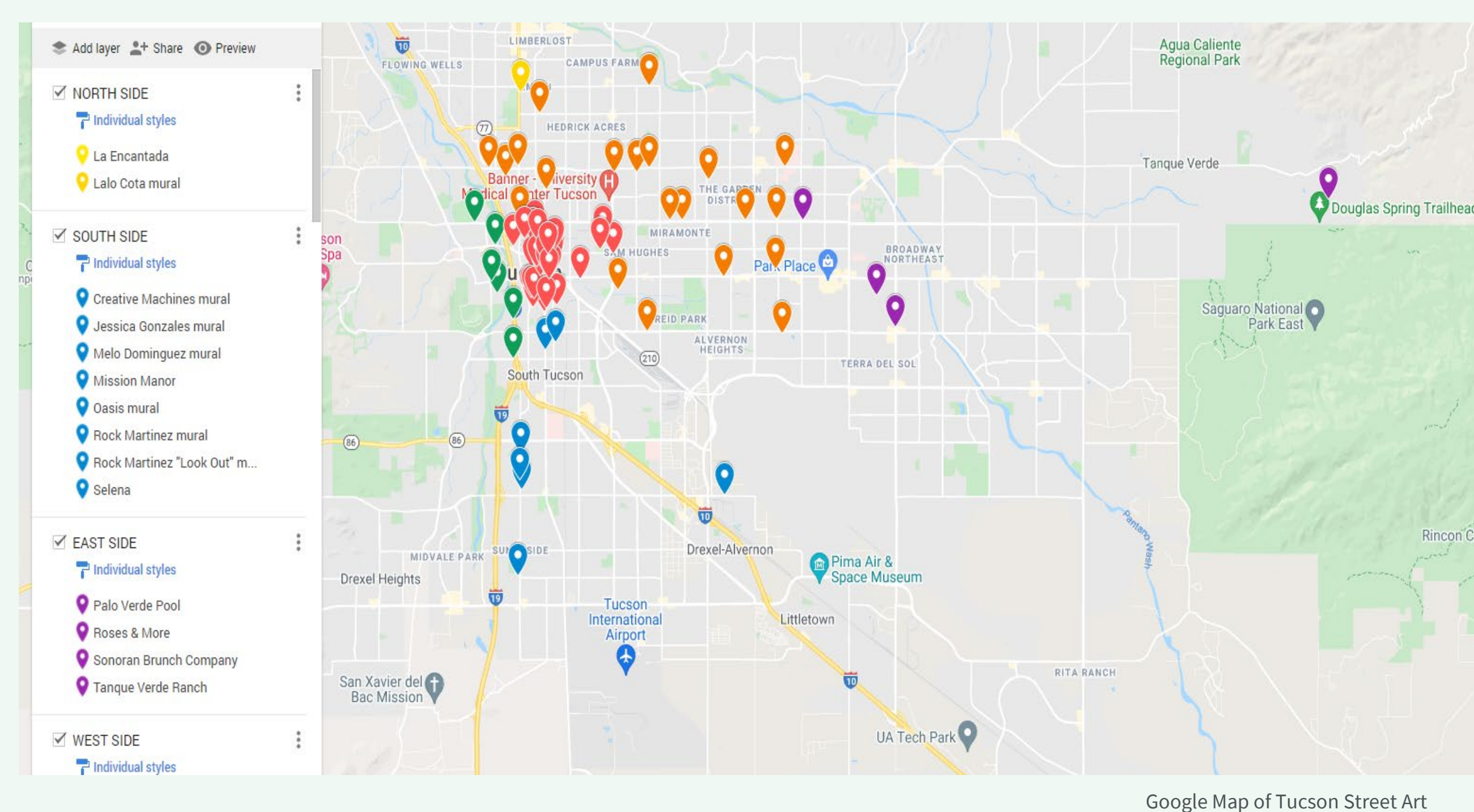
This paper uses a mixed method approach to analyze how a community area can be perceived by visual information via physical areas. In this analysis, Street Art is considered a type of visual information that can represent a specific perception of a community, as a member of the community area. While reviewing the image's attributes through perceptual tools we can use social network

analysis methods, including methods of duality and Bi-dynamic line graphs, to understand how different areas are connected and how they might differ. The results show that specific area traits, urban, population, culture, contribute to stronger ties within the Street Art community network.

Background

The importance of visual information in a community, for example street signs, store fronts, logos, legal information, community events, etc. is crucial to the structure and sustainability of that community. By focusing on one specific type of visual information a community can be perceived from its components. The question this poster tries to answer is how a community can be perceived by a visual image via physical spaces? Street Art will be seen as a type of visual information, including examples in the Tucson, Arizona metropolitan area spanning a 70-mile radius. Street Art will be considered as any non-institutional art created for the local community, legally or illegally. These art forms include graffiti and murals contracted by community leaders, groups, or independent artists.

Data



Measures of Centrality: Style to Artist Network

Style to Artist Nodes (top 10)	Degree Centrality	Closeness Centrality	Betweenness Centrality
Modern (Style)	36	.440	1261.93
Community Based (Style)	32	.426	1121.93
Business (Style)	24	.401	696.03
Traditional (Style)	22	.390	703.55
Political Social (Style)	20	.395	858.54
Danny Martin (Artist)	8	.447	535.45
Ignacio Garcia (Artist)	6	.390	482.84
Jessica Gonzales	6	.395	170.54
Joe Pagac	6	.395	170.54
Rock "Cyfi" Martinez	6	.369	192.22

Measures of Centrality: Style to Area Network

Style to Area Nodes	Degree Centrality	Closeness Centrality	Betweenness Centrality
community_based	12	0.7142857	17.2180375
business	10	0.625	10.8940837
Central	10	0.6666667	8.3448773
Downtown, Fourth, UA	10	0.6666667	8.3448773
South Side	10	0.6666667	8.3448773
traditional	10	0.625	7.6878788
West Side	8	0.5882353	4.4209235
modern	8	0.5555556	3.1
political_social	8	0.5555556	3.1
East Side	6	0.5263158	2.0111111
North Side	4	0.4761905	0.5333333

Measures of Centrality: Artist to Area Network

Artist to Area Nodes	Degree Centrality	Closeness Centrality	Betweenness Centrality
Downtown, Fourth, UA	62	0.5544554	2235.78333
Central	34	0.4341085	1172.91905
South Side	12	0.3660131	434.41667
West Side	12	0.3708609	360.44048
Joe Pagac	10	0.4827586	474.73095
East Side	8	0.3612903	141.50714
Jessica Gonzales	8	0.4827586	524.30238
Lalo Cota	6	0.4375	177.72381
Rock "Cyfi" Martinez	6	0.4117647	312.44524
Danny Martin	4	0.4307692	132.17381
Ignacio Garcia	4	0.4307692	132.17381
Wagon Burner Arts	4	0.3218391	56.51667
Volunteers	2	0.3589744	0

Methods

The network is composed of three sets but two are used for the Bipartite Line Graph analysis, Street Art and community area. To understand the relationship between the two, I use the style set of nodes to provide more information on area and street art characteristics by finding measures of centrality. Understanding the value of connections within and between Street Art and the areas in which it is located can help understand how a Street Art image might be perceived as belonging to a particular area.

As Street art is perceived within a community area, we can look further into the notion of duality by using a bipartite network to consider the intersection of these two sets. In their work on temporal dynamics of bipartite networks, Broccatelli, Everett, and Koskinen (2016) use bipartite networks with a temporal aspect of modes for covert networks that intersect actors and events across time (Broccatelli, et al., 2016). They implement three steps, 1) an affiliation matrix of the two sets, 2) a line graph projection where edges between individuals are transformed to nodes while excluding redundant ties, and 3) a reduction of the ties to contain only the edges that connect the individual nodes to the group nodes (Broccatelli, et al., 2016).

Bi-Dynamic Line Graphs

