

Not a Needy Person Among Them: A Network Analysis of Prosocial and Religious Behaviors

Karl G. D. Bailey^{1,2}, Zoe Shiu¹, Shannon Trecartin^{2,3}, & Duane C. McBride^{1,2}

¹School of Social and Behavioral Sciences, ²Institute for the Prevention of Addictions, & ³School of Social Work

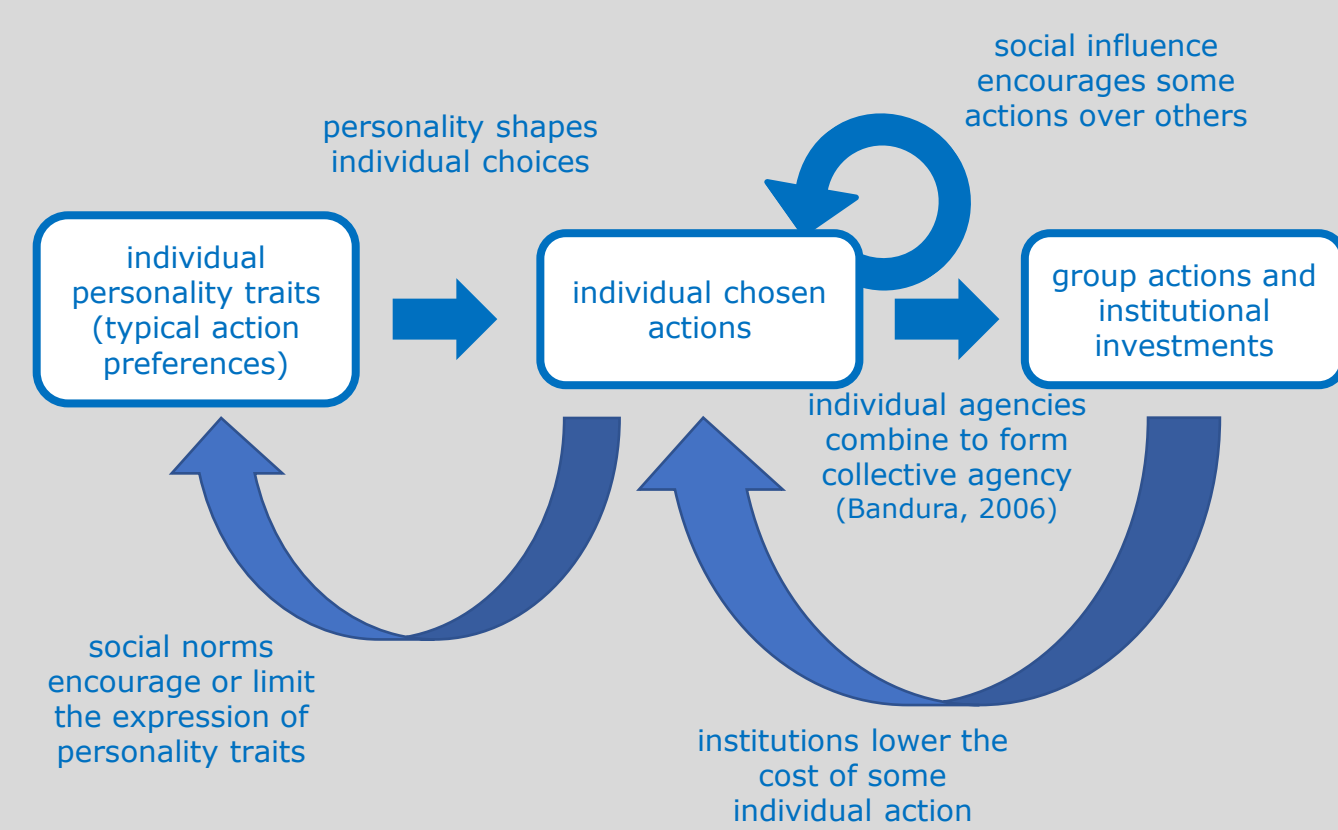


kgbailey@andrews.edu

What religious behaviors facilitate broader prosocial behaviors?

Individuals and groups show consistent patterns of behavior because of dynamic stability.

The geographic clustering of personality traits is a good example of dynamic stability: consistency of behavior is driven not by fixed traits, but by the constant interactions of individuals, groups, and institutions (Rentfrow et al., 2008).



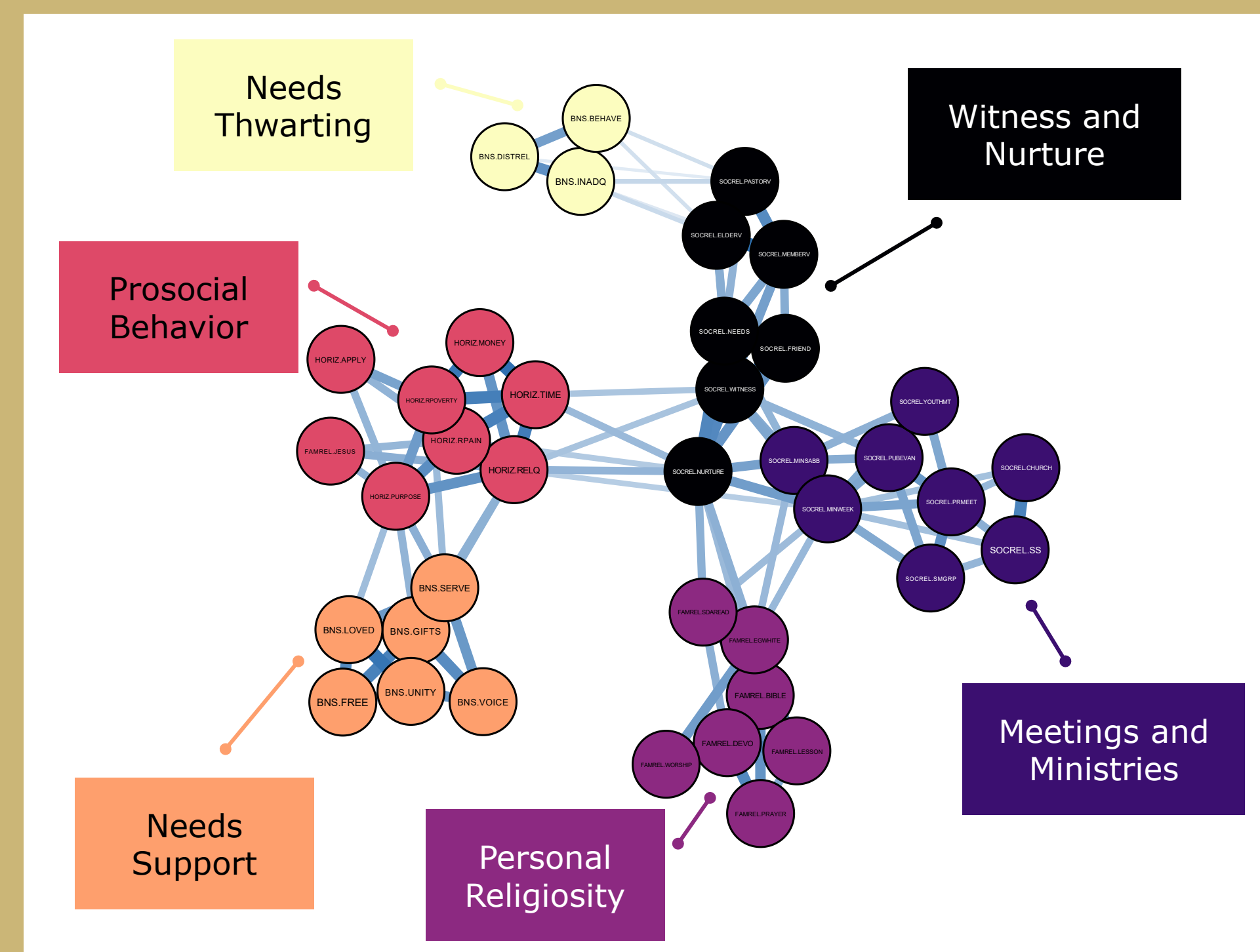
based on figure 1 in Rentfrow et al., 2008

Religious practices are related to broader prosocial behaviors.

Religious attendance can be positively related to prosocial behavior through the social aspects of religious attendance (Van Cappellen et al., 2016), while the amount of time spent volunteering may be related to the perceived importance of religion (Petrovich et al., 2021). In addition, activities that meet the needs of the community around the church also can drive further prosocial behaviors by church members (McClure, 2017).

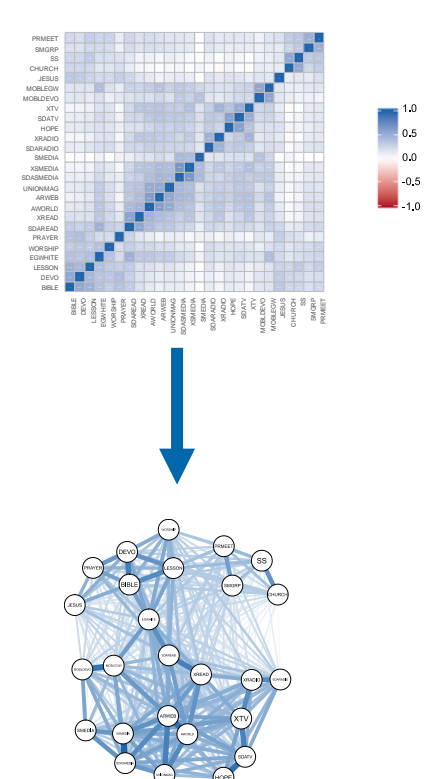
³² All the believers were one in heart and mind. No one claimed that any of their possessions was their own, but they shared everything they had. ³³ With great power the apostles continued to testify to the resurrection of the Lord Jesus. And God's grace was so powerfully at work in them all ³⁴ that there were no needy persons among them.

Acts 4:32-34 (NIV)



This model suggests that prosocial behavior is more strongly related to the on-going construction of the church community than attendance or devotional practices. Prosocial behavior is linked in our network to the experience of having psychological needs supported at church and to witnessing and nurture. The ability to support other church members and witness to non-Adventists are the core of this model.

(information on specific items is available from the authors)



The correlations between beliefs, practices, and experiences can be represented as a **dynamically stable network** of relationships.

Network analysis allows researchers to identify communities of nodes, nodes that are centrally located, and nodes that bridge the activation of neighboring communities.

Network models have been used to describe the structures of memory*, personality†, and psychopathology‡.

* Kenett, Kenett, Ben-Jacob, & Faust (2011)
† Christensen, Cotter, & Silvia (2019)
‡ Borsboom & Cramer, 2013; Boschloo et al., 2015; Cramer et al., 2010; Levinson, et al., 2022

Centrality:

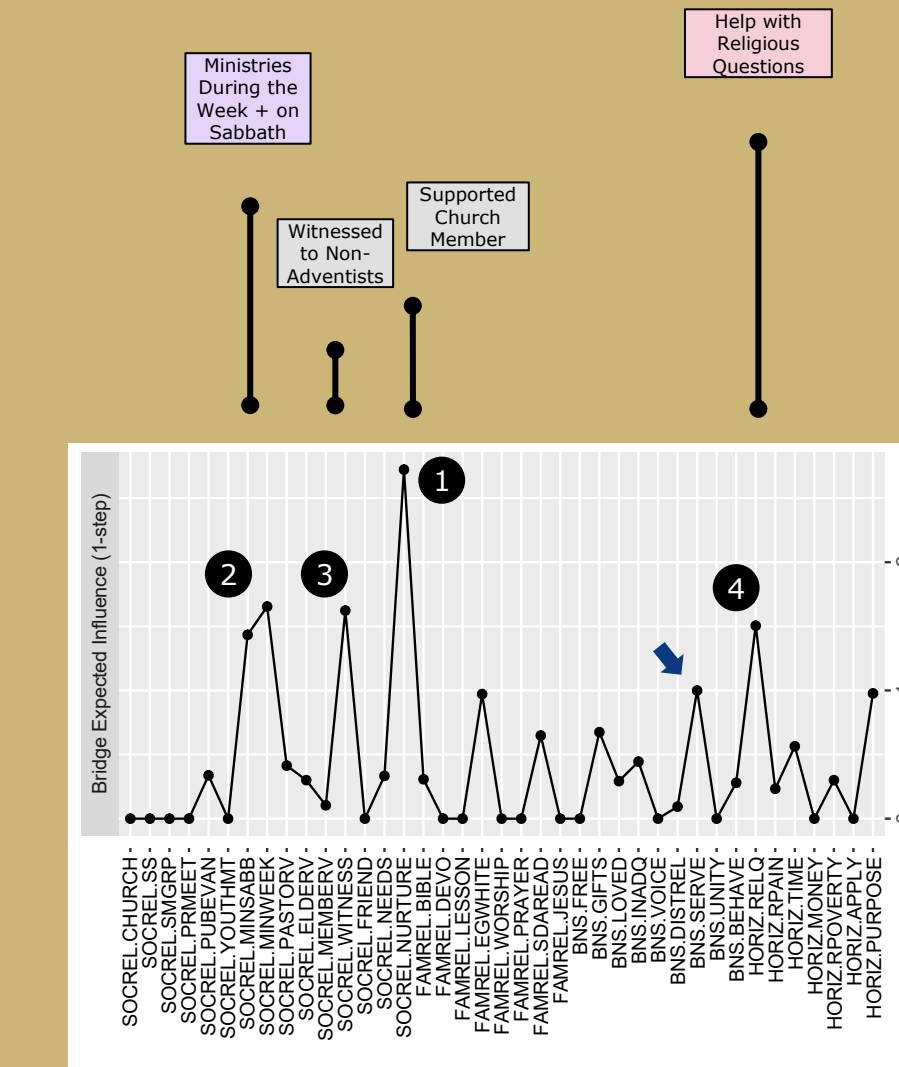
Centrality measures are used to determine which of the nodes are most important or well-connected in a network.

Measures include number of connections (degree), sum of edge weights (strength), inverse distance from other nodes (closeness), paths from other nodes through each node (betweenness), quality of connections (eigenvector).

Impact is a centrality measure of how much more diffuse a network becomes when a node is removed, and is a good measure of the which nodes are facilitating hubs for the spread of activation.

The three nodes that link social religiosity communities and prosocial behavior are focused on involvement.

Ministries during the week is a central node connecting Witness and Nurture nodes, Meeting and Ministries nodes, and Personal Religiosity nodes.



Bridge Centrality:

Bridge centrality measures the degree to which nodes represent important paths for activation to flow from one community of nodes to others.

Imagine activation or energy flowing through the network—bridging nodes that those that activation flows through more often (bridge betweenness) and more directly (bridge closeness).

Bridge centrality can also be defined as total absolute connectivity (bridge strength) or the amount of activation that flows from a node in *n* steps (expected influence).

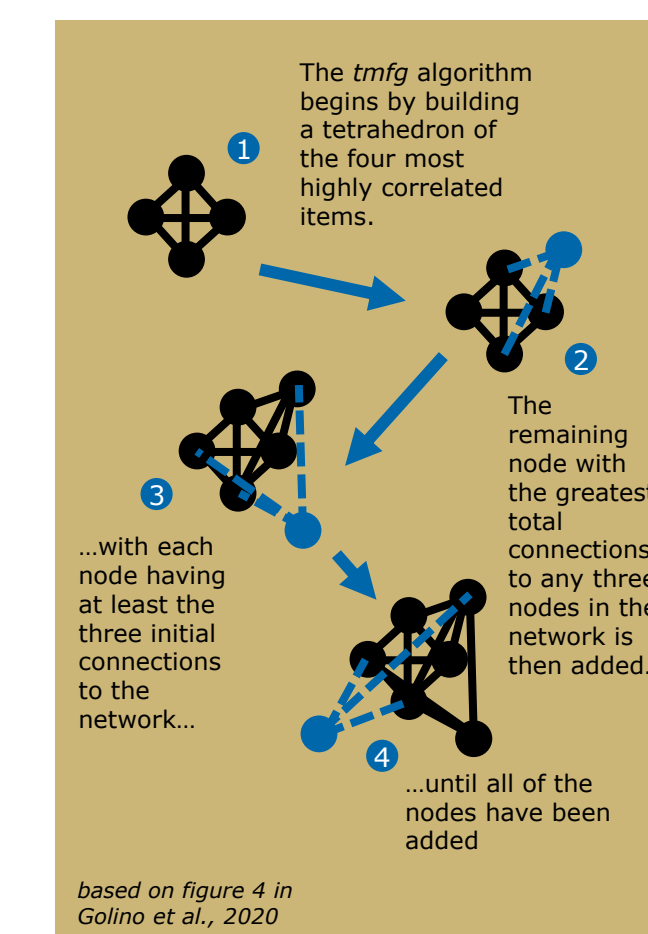
The five bridge centrality nodes are all related to having a place for ministry within the church and being able to help other church members with spiritual support and understanding.

This suggests that prosocial behavior is:
• directly connected to receiving support for wholeheartedness, belonging, and competence needs
• only connected to devotional practices and attendance through having a place for meaningful ministry in the church

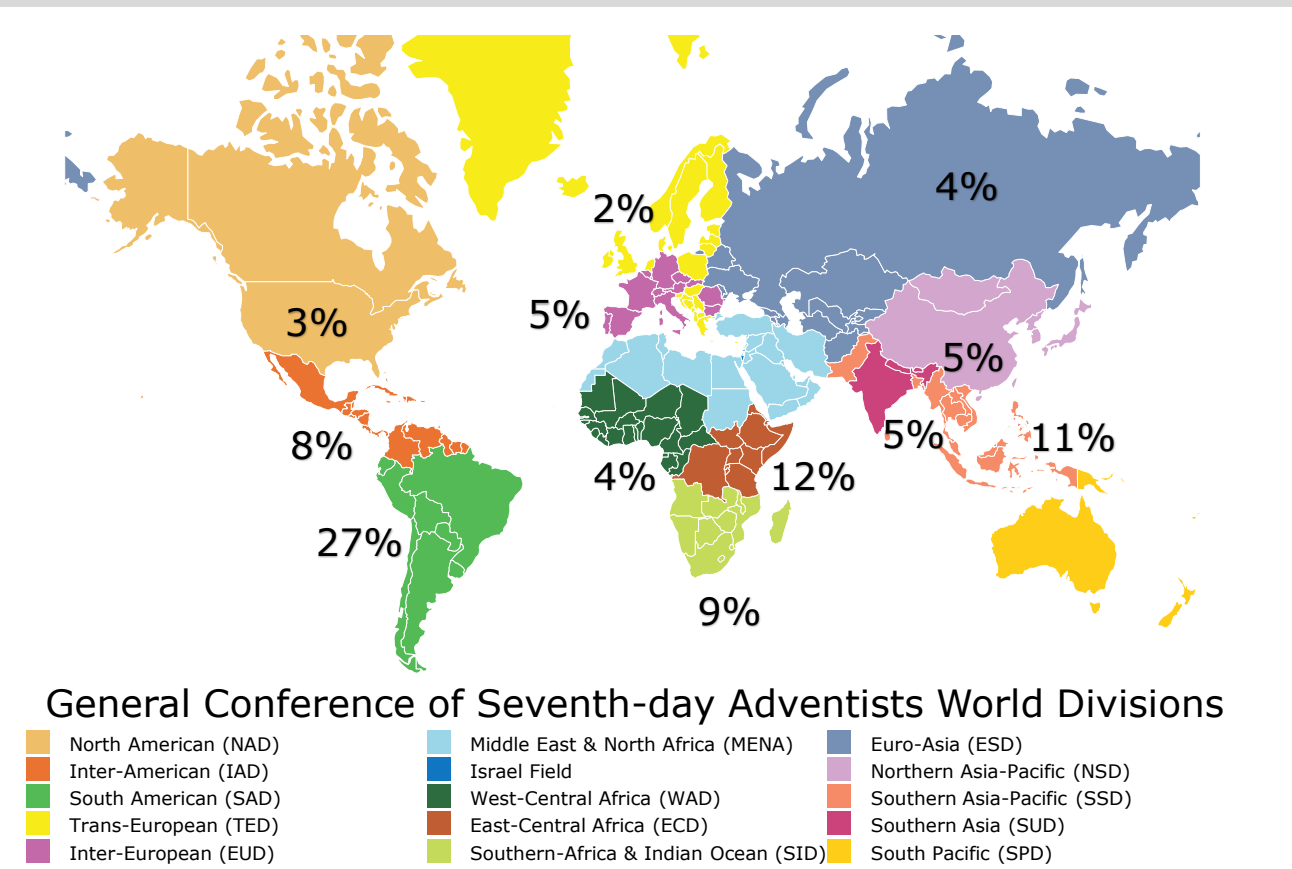
We used tmfg algorithm in the EGA function in the EGAnet package in R 4.2 to build our network model.

We calculated centrality measures using the NetworkToolbox package and bridge centrality measures using the networktools package.

The tmfg algorithm (Golino et al., 2020) does not assume that variables follow a normal distribution, and is the most effective algorithm when the correlation matrix has many correlations < .50 and when subscales are not highly correlated. It limits the total number of edges as a filter on spurious correlations.



based on figure 4 in Golino et al., 2020



GCMS II Dataset Composition by World Division

Methods

Global Church Member Survey, Wave II

- Data collected 2017–2018; Total cases 63,756
- Data come from a global survey of Seventh-day Adventist church members (distribution above)
- Members are 'core' Adventists—most data was collected at Adventist churches from those present at or willing to commit time following worship services.
- At least 55,000 valid responses on most questions examined.
- Research teams from around the world familiar with each World Division of the Adventist Church were responsible for collecting the data.
- Our meta-analysis team was responsible for analyzing the integrated global data.
- The project was approved by the Andrews University IRB.

Included items:

- Prosocial behaviors: 7 items
- Social religious practices (meeting together): 8 items
- Social religious practices (ministry and nurture): 4 items
- Social religious items (visits from church members and leaders): 3 items
- Frequency of personal and religious practices: 8 items
- Psychological needs support at church: 4 items
- Psychological needs thwarting at church: 3 items

Broad prosociality can be enhanced within the Adventist Church by intentionally connecting church members to meaningful service both inside and outside the local church—within a community of belonging.

Acknowledgements

Archives, Statistics, and Research (General Conference of Seventh-day Adventists); Research and Creative Scholarship Grant (Andrews University); GCMS Division Teams; GCMS Meta-Analysis Team (Petr Činčala, Alina Baltazar, René Drumm); AU Undergraduate Research Scholar (Crystal Collins)

as presented at the Adventist Human Subjects Research Association 2022 meeting