Journal of Applied Sciences 15 (7): 1013-1019, 2015
ISSN 1812-5654

ansinet
Asian Network for Scientific Information

RESEARCH ARTICLE OPEN ACCESS

DOI: 10.3923/jas.2015.1013.1019

Perspective of Consumers Network Positions on Information Searching Behaviour of Experts and Novices

[1]Fakhraddin Maroofi and [2]Sahel Aazami
[1]Department of Management, University of Kurdistan, Sanandaj, Iran
[2]Department of Management, Kermanshah Branch, Islamic Azad University Kermanshah, Iran

ARTICLE INFO
Article History:
Received: December 13, 2014
Accepted: June 06, 2015

Corresponding Author:
Fakhraddin Maroofi
Department of Management,
University of Kurdistan, Sanandaj, Iran

ABSTRACT
Results from two studies depending on consumers' network positions (outer or central), experts and novices behave when searching information about their networks or commodity's related to those networks. Experts in central network positions (vs. outer) search for more network-related information, while novices in the same positions search for more commodity-related information. In comparison, experts in outer network positions (vs. central) search for more commodity-related information, while outer novices search for more network-related information. These findings are useful for companies to better access to their brand communities. Since, central experts and outer novices search for network-related information, marketers should facilitate ways to improve their receptivity to this type of information. Similarly, since outer experts and central novices search for commodity-related information. Marketers should devise methods to deliver commodity-specific information to these consumers. Therefore, marketers should consider both consumer's level of expertise and their network positions to better predict consumer's information searching behaviors. Regarding to the importance of social networks in consumer decision making, this research indicates the effect and importance of consumer's network position on information searching for behavior of experts and novices.

Key words: Expertise, social networks, network centrality, Iran

INTRODUCTION

Power refers to an individual's competency to affect others and makes them do things they would not do in other ways (Weber, 1978). As a relational variable, an individual's power effect's another person, representing an asymmetric relationship (Anderson and Galinsky, 2006). Such powers are referred to as social power (Lammers *et al*., 2009). Therefore, power can reflect individuals' competency to take control over their own outcomes and to be independent of others' effects. Such power is referred to as personal power (Lammers *et al*., 2009; Van Dijke and Poppe, 2006). Smith and Fink (2010) display an individual's network location which conveys information about that individual's power. They end structural positions with higher centrality (one who has many ties) generate greater perceived social power than people residing in the network's limited. Burt (1992) suggests individuals' network structure may provide individuals with only benefits because social benefit is created by an individual's location in a structure of relationships. Social power comes from employing network positions with a more optimal social structure (Smith and Fink, 2010) therefore, since social power relates with interdependence rather than independence (Lammers *et al*., 2009). For instance, French and Raven (1959) express expertise as another form of power. Moreover, expertise in the consumer region provides individuals with personal power since, they have higher cognitive capability and cognitive processing capability to carry out commodity independently (Alba and Hutchinson, 1987). These individuals tend to be less dependent on others and are less affect by others behavior. This research seeks to see how consumers' level of expertise and their network position interact to affect information searching for behavior and acts as the motivating force behind this process. Prior researchers focus on how

individual differences change consumers' information searching for behavior (Goldsmith and Clark, 2008). Consumer networks investigating the network position's role and primarily focuses on post-consumption processes (Kratzer and Lettl, 2009; Smith *et al*., 2007). Recent network research on pre-consumption processes largely ignores how people utilize their social network positions to gain commodity information (Katona *et al*., 2011). Clearly, this research investigating how network positions and expertise jointly affect the information searching for behavior of consumers and how power plays an important role in this process. Going forward, there are reasons to take a risk on experts and novices, in the way they search for information from other people. Furthermore, to desire for social or personal power likely mediates these relationships. This research explores this inquiry to set a framework for understanding novel insights into how the desire for power, expertise and network position affects the flow of information in consumer networks.

Expertise is "the competency to carry out commodity-related desire's successfully" (Alba and Hutchinson, 1987). Consumer expertise effects how individuals gather and organize information, affecting commodity purchases. Prior research suggests that experts and novices both employ active information searching for behavior. For instance, novices search for information because they lack commodity experience (Bettman and Park, 1980). Experts search for information about specific commodity because they are more exposed to the attribute's existence (Brucks, 1985). Despite on consumer knowledge and expertise (Alba and Hutchinson, 1987), how individual's social network positions differentially impact the information searching for behavior of experts and novices remains unexplored. Social network positions are important to consumers because pre-existing interaction within a group may provide better opportunities for individuals (Burt, 2000). Within a social network, certain network positions provide individuals with a more optimal social structure that offers privileged access to knowledge, information and resources (Burt, 2000; Kratzer and Lettl, 2009). Such position is to be central in a social network (Freeman, 1979). Network centrality is the interconnectedness between the individual and other members (Freeman, 1979). Individuals who are central (vs. outer) in their networks tend to be more active, have shorter paths of contact to others within their social network and have more ties with other central members (Faust, 1997). Centrally located individuals tend to have higher access to others and have a larger number of people, who are willing to share information (Mehra *et al*., 2006). Centrality also implies greater control over information gain because these individuals can choose from a greater number of alternative network members to satisfy their wants and needs (Lee *et al*., 2010).

People in outer positions may search for association-commodity information to gain social benefits and opportunities from their network. Since, outer individuals are limited with social opportunities (due to their dis benefitted structural position), they search for information to assist them in achieving greater network position. Therefore, the motivation to search out specific information helps individuals accumulate more power within their network. In general, central novices search for commodity-related information to increase their knowledge so, they can become a resourceful person in the network. Outer experts search for network-related information because they lack the social position. Outer novices need both types of information. Conversely, central experts have significant social benefits through their network position and commodity knowledge. Prior studies display that experts search for commodity-related information to continuously update their knowledge (Bettman and Park, 1980). Experts desire more information to improve their knowledge base, reducing their dependence on others. While, novices search for commodity-related information to increase their knowledge, experts want to understanding how centrality and expertise in online networks provide benefits and benefits for consumers remains relatively unknown (Goldenberg *et al*., 2009). Prior studies display that a relationship exists between centrality and network effect (Brass and Burkhardt, 1992; Lee *et al*., 2010). Central individuals are motivated to stay employed with the network through accumulating network-related information. While, outer individuals may search for network-related information to increase their social standing, central individuals also search for the same type of information to help continue their effect over their network.

MATERIALS AND METHODS

This study posits centrality and expertise interact to effect information searching for behavior of consumers (commodity-or network-related information). First, central experts, who are knowledgeable in both regions, have higher priority in searching for network-related information, because they want to build and continue credibility, which will effect within their social group. Hence, employing a central network position generates social power. These individuals need to protect and continue their social position to preserve social benefits (Burt, 2000). Network-related information facilitates and continues ongoing contacts with other members in the network. Even though, they may have accumulated high social and personal power, these individuals continue to search for more social power to help them utilize their expertise, greater effect over the network. Due to their desire for greater personal power, central novices choose to search for commodity-related information (vs. network-related information). Burt (2000) state that central individuals are motivated to protect their position as integral network members, also Burt suggests individuals must support a lowest interaction frequency to continue ties and preserve their structural position. However, without sufficient commodity of knowledge, central novices find difficulty engaging with others and providing commodity advice, thus reducing their capability to continue constant interaction with other network members. In addition, due to their lack, personal power forces them to become more dependent on others for a variety of decision-making desires. Thus, their motivation for independence pushes them to search for more commodity-related information. Moreover, continuing their structural position and social benefits the motivation to search for commodity-related information comes

from the dependent which are more resourceful. Next, outer experts may search for commodity-related information due to their wants to build more personal power for themselves. First, outer experts have less interest in information that builds social power but greater interest in accumulating information that builds personal power (Van Dijke and Poppe, 2006). Because personal power relates with gaining independence from others, people with personal power may spend less time and effort to be available to others (Galinsky *et al*., 2008). This motivation explains, why outer experts have little desire to interact with other members in the network. Since, personal power is the competency to do and get what you want, without being effected by others (Lammers *et al*., 2009), consumers must gain commodity-related information to continue their independence in the network. Without sufficient knowledge and expertise, they need to be dependent, stripping them of their personal power. Alternatively, outer experts may lack the social capability to generate social relationships, thus reducing their capability to generate social power. In this case, the personal power gained from being an expert becomes the main focus. Therefore, outer experts place greater priority on gaining commodity-related information since, it is important to them. Finally, due to lack of knowledge in the commodity- and network-related regions, outer novices may value the type of information with the social benefits, as well as may search for commodity-related information because they have an interest in the commodity itself. However, in order to do, first they try to gain network position by fiting out themselves with network-related knowledge, in order to gain better access to others who provide high quality information. Increasing network-related knowledge increases social connections which in turn increases commodity knowledge. By accumulating more network-related information, outer novices collect social power which can be used to affect others. Moreover in this theory two network studies tested: (a) To investigate the interaction between centrality and expertise on information searching for behavior and (b) Replicates study 1 and investigates the mediating role of desire for power.

Study 1: Network data was collected from a group of undergraduate students registered with a student association in the university. The association provides students with an opportunity to connect with other students, as well as educational workshops curriculum. Prior to data collection, the author met with the Chief Operating Officer (COO) to identify the active members of the association. This step ensured that the data included only the members, who were actively involved with the association. The COO, then contacted these members to participate in this study. In total, 41 of 54 (response rate: 83%) members agreed to participate in the study. Network data was collected using the roster method, a technique widely used in social network research (Wasserman and Faust, 1994). Each person rated their relationship strength: (1) Do not know, (2) Colleague, (3) Friend and (4) Close friend with every other member in the association (Lee *et al*., 2010). Providing a roster of participants to respondents overcomes potential recall bias. This method is more reliable than desiring respondents to come up with names on their own (Wasserman and Faust, 1994). Additionally, this method helps identifying the network structure and calculates network centrality (Lee *et al*., 2010).

Network centrality: Network data was arranged in an N×N binary matrix (Wasserman and Faust, 1994). Each cell X_{ij} in this matrix corresponds to i's relation to j as reported by i. Thus, a 41×41 network matrix was created based on the network data to calculate each participant's network centrality score. Symmetric data for the matrix was created such that a friendship was coded as "1" when both of the individuals identified each other as a friend (rating of 3 or more); in other way, the relationship between the dyad was coded as "0". A cut-off point of 3 was chosen to achieve the analysis of strong-tie networks (Sirsi *et al*., 1996). Network centrality was calculated by totaling the number of links each member had with other members in the network, then data was examined only the friendship relationships that were shared between two individuals.

Commodity expertise: Each member completed a 5-item subjective knowledge (Flynn and Goldsmith, 1999). The 5-item scale was scored on a 5-point Likert-scale ranging from 1-5 with descriptive anchors "Strongly Disagree" and "Strongly Agree." Although the original scale items included reverse-coded items, research has displayed that reverse-coded items are subject to unexpected factor structures (Netemeyer *et al*., 2003). But in order to better achieve a unidimensional factor all negatively worded questions were converted into positively worded questions. Table 1 shows the confirmatory factor analysis showed that the five items all loaded 0.74 and higher with sufficient fit (CMIN/DF = 1.60, GFI = 0.91, CFI = 0.95, RMSEA = 0.11), (Steenkamp and Van Trijp, 1991).

Information searching for behavior: Participants rated every other member on the roster on a 5-point Likert scale (1-never, 5-always) (Lee *et al*., 2010), "to what extent would you search for information from that particular member about curriculum shares in addition, participants also rated "to what extent would you search for information from that particular member about the curriculum association (e.g., information about the organization, association's events and activities)." Even though these measures were single-item, the literature suggests one-item network measures are largely reliable when the roster method is used to aid individual's recall (Marsden, 1990). Finally, the average of individual's rating for every other member was calculated to create an index score to represent the information searching for score for each network member.

Control variables: Demographic variables (gender, race and age) were collected. Materialism were also measured (Richins and Dawson, 1992) and consumer need to uniqueness (Tian *et al*., 2001) were collected as covariates as these

Table 1: Scale items and loadings (study 1)

Scale items	EFA	CFA
Knowledge (study 1) (α = 0.90)		
I know a lot about investment shares	0.92	0.90
I feel very knowledgeable about investment shares	0.75	0.72
Among my circle of friends, I know more about investment shares	0.88	0.86
Compared to most other people, I know more about investment shares	0.86	0.80
Knowledge (study 2) (α = 0.89)		
I know a lot about workshops curriculum	0.92	0.89
I feel very knowledgeable about workshops curriculum	0.72	0.69
Among my circle of friends, I know more about workshops curriculum	0.87	0.87
Compared to most other people, I know more about workshops curriculum	0.88	0.83

CFA: Confirmatory fauor analysis, EFA: Exploratory factor analysis

constructs may have an effect on individual's motivation to search for information from others. However, post-analyses display that these variables did not have much effect.

Study 2: Data was collected from 43 members from a student of Kurdistan University association. Student of Kurdistan University was chosen because the association's mandate is to facilitate information sharing for the members by providing a forum for individuals to share innovative recipes for ingredients. Network data was collected in the same manner as study 1. In total, 43 of the 56 members responded to the survey for a response rate of 85.4%. Of the 43 participating members, 87% of the ties were reciprocated by other members. The remaining 13% of non-reciprocated ties were considered as non-active ties. Similar to the prior study, participants were desired to rate every member on the roster on a 5-point Likert scale (1-never, 5-always) "to what extent would you search for information from that particular member about sharing innovative recipes (e.g., information about ingredients, brands)." In addition, participants rated "to what extent would you search for information from that particular member about the student of Kurdistan University association (e.g., information about the organization, association's events and activities). The average of individual's rating for every other member was calculated to create an index score to represent the information- searching for score for each network member.

The remaining design aspects of study 2 were similar to the procedures carried out in study 1 with one notable exception. In this study, desire for social power and personal power (Lammers *et al*., 2009), were collected and was measured with two single items. Both, social power and personal power were measured by desiring the members to indicate on a 5-point scale.

RESULTS

Results of study 1: Of the 41 members, there were 29 males and 12 females. The participants' ages range from 18-25, with a mean age of 20.23 years. The average number of network ties for each participant is 3.62 (SD = 3.07). Table 2 reports means, standard deviations and regression analyzed the data. Commodity expertise score and individual's centrality scores are centered and the respective interaction terms were entered into a regression as predictors of information searching for behavior. The data show a significant interaction between centrality and expertise on network information searching for behavior, $\beta = 0.40$, $t = 2.97$, $p<0.05$, $f^2 = 0.18$. Simple test confirm a significant and positive effect of centrality on network information searching for behavior for experts (one SD above the mean of expertise), $\beta = 0.04$, $t = 4.60$, $p<0.001$ and negatively significant for novices (one SD below the mean of expertise), $\beta = -0.04$, $t = -2.21$, $p<0.05$. In addition, there are a significant interaction between centrality and expertise on commodity information, which is searching for behavior, $\beta = -0.34$, $t = -2.52$, $p<05$, $f^2 = 0.14$. But test shows that the negative effect of centrality on commodity information searching for behavior is significant for experts, $\beta = -0.04$, $t = -2.42$, $p<0.05$ and positively significant for novices, $\beta = 0.06$, $t = 2.43$, $p<0.05$ (Fig. 1a-b). Results from study 1 show that experts and novices display varying information searching for behaviors depending on the social network positions they employ. Novices in the central network positions search for more commodity-related information while, experts in central network positions (vs. outer) search for more network-related information. These results indicate that expertise and network centrality interact to affect information searching for behavior. In addition to increase the competency of the findings, study 2 explores the mediating role of desire for power (social or personal).

Table 2: Means, standard deviation and correlations (study 1)

Parameters	M	SD	1	2	3	4
Network centrality	3.62	3.05	1			
Product expertise	4.36	1.70	-0.05	1		
Information-searching (network)	2.43	0.33	-0.03	0.03	1	
Information-searching (product)	2.42	0.32	0.16	-0.07	-0.22	1

M: Means, SD: Standard deviation

Results of study 2: The 43 network participants (13 males and 30 females) ranged in ages from 18-25, with an average age of 20.6 years (SD = 3.45). The average number of ties for each participant was 5.75 (SD = 3.44) (Table 3). Regression was used to analyze the data. Commodity expertise score and individual's centrality scores were centered and the respective interaction terms were entered into a regression as predictors of information searching for behavior. Finding show a significant interaction between centrality and expertise on network information searching for behavior, $\beta = 0.34$, $t = 2.44$, $p<0.05$, $f^2 = 0.13$. Furthermore, a significant interaction exists between centrality and expertise on commodity

Table 3: Means, standard deviation and correlations (study 2)

Parameters	M	SD	1	2	3	4	5	6
Network centrality	5.75	3.42	1					
Product expertise	4.41		0.38	1				
Information-searching (network)	4.40	1.76	0.6	-0.15	1			
Information-searching (product)	3.87	1.73	-0.9	0.06	-0.16	1		
Social power	3.93	1.85	0.07	-0.14	0.42**	-0.18	1	
Personal power	4.26	1.88	-0.12	-0.08	-0.27	0.46**	0.04	1

**Correlation is significant at the 0.01 level (2-tailed), *Correlation is significant at the 0.05 level (2-tailed), M: Means, SD: Standard deviation

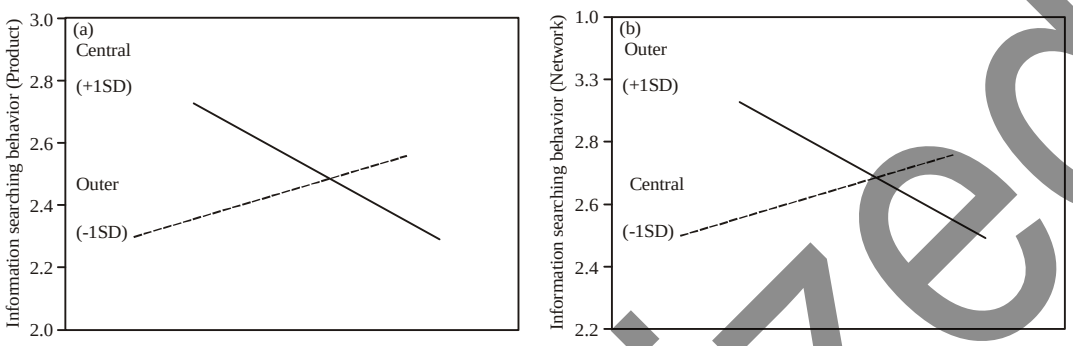

Fig. 1(a-b): Information searching behavior, (a) Product and (b) Network results (Study 1), Novices (-1SD) Experts (+1SD)

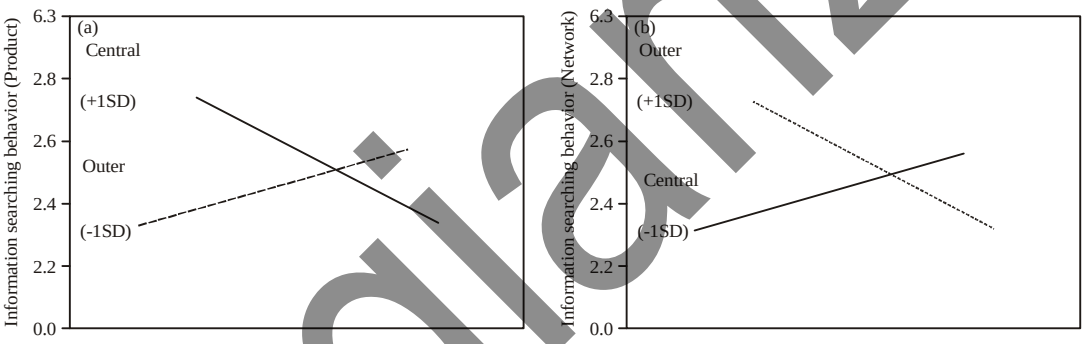

Fig. 2(a-b): Information searching behavior, (a) Product and (b) Network results (Study 2), 3 Novices (-1SD) Experts (+1SD)

information searching for behavior, $\beta = -0.35$, $t = -2.42$, $p<0.05$, $f^2 = 0.13$ (Fig. 2a-b). The study follows Baron and Kenny (1986) procedure to analyze the mediating effect of power between the interaction of centrality and expertise and information-searching for behavior. The regression results display that the interaction between centrality and expertise on social power is significant, $\beta = 0.44$, $t = 3.47$, $p<0.01$. The interaction on personal power also is significant, $\beta = -0.32$, $t = -2.39$, $p<0.01$. The regression results also on the third step display social power on network-related information is significant, $\beta = 0.46$, $t = 3.66$, $p<0.01$. The results also display that personal power on commodity-related information is significant, $\beta = 0.41$, $t = 3.22$, $p<0.01$. The final step, mediation analysis shows that social power fully mediates the relationship between the interaction variable and network-related information (Fig. 3). When social power is show, the relationship between the independent variable and the dependent variable became non-significant (Sobel, 1982). Similarly, the mediation analysis shows that personal power fully mediates the relationship between the interaction variable

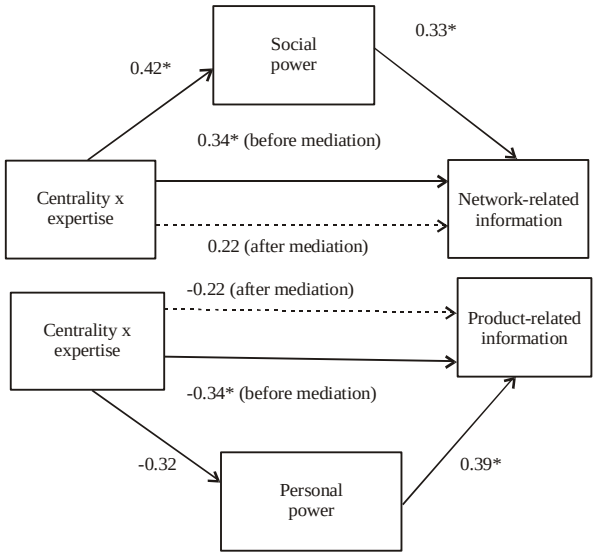

Fig. 3: Mediation results (study 2), *p<0.05

and commodity-related information (Fig. 3). Therefore, the relationship between the independent variable and the dependent variable became non-significant (Sobel, 1982). Overall, the results indicate that desire for power is an important variable that explains information- searching for behavior of consumers.

DISCUSSION

Perception of consumer's positions in social networks and the benefits (i.e., power) related with those positions is important to consumer behavior research (Kratzer and Lettl, 2009; Van Den Bulte and Wuyts, 2007). An individual's network position affects their attractiveness as network members, the amount of access they have with other members in the network and the power they have over others- influencing the level of interaction and information-sharing that occurs within a network (Lee *et al*., 2010). Regarding this research, the findings indicate the role of network positions on information searching for behavior of experts and novices. Surprisingly, outer experts search for commodity-related information and outer novices search for network-related information. According to outer experts, which are equipped with commodity knowledge, they bolster their social power and search for unfamiliar information (network-related knowledge). Moreover, outer experts are in a benefitted position to receive this type of information, they desire to build on their personal power and improve their commodity knowledge. However, the results indicate outer novices desire social power, fitting out themselves with network-related knowledge to gain better access to others in the network. Also, there is a difference between central experts and novices. Central experts search for network-related information via desire for social power. They use network-related information to connect with other people and use the knowledge to bolster their effect within the group. On the other hand, central novices, preferring to search for commodity-related information to improve their commodity knowledge and desire personal power. Therefore, their motivation to search for commodity related information is to be less dependent on others. Together, the findings from two network studies indicate, experts and novices respond differently to their network positions, searching for information that is specific to their need. According to the complexity in the field of information search and acquisition, researchers should investigate of why these network positions and expertise differentially affect the behaviors of consumers. But, if central novices are unsuccessful in using their power to improve their commodity knowledge, the result may be weaken their structural position at a later point in time. Thus, a longitudinal analysis is appropriate in identifying the changes in behavior and consumers' network positions over time. The network relationships searched are strong dichotomous network ties (0 for absence, 1 for presence). This analysis does not take the strength of these relationship ties (strong vs. weak ties) to settle differential impacts the information searching for consumer behavior. Today, therefore, how centrality and expertise in online networks provide benefits and benefits for consumers remains relatively unknown (Goldenberg *et al*., 2009; Van Den Bulte and Wuyts, 2007). In online settings, the lack of face-to-face interactions may increase one's personal power while reducing one's social power. Comparing results of off-line communities to online communities offers a research opportunity. Emerging internet and social media tools such as Facebook and Twitter compel marketers to examine how brands, culture and social communication interact to play a role in consumer's information-sharing behavior. Extending this research framework to investigate the information searching for and the information-sharing behaviors that attend those communities provides another compelling research direction. This research has several limitations. The field-based studies only investigate the role of consumers' positions in a social network setting. Results of network methodology and analysis are showing correlation and thus, causality cannot be inferred from the data. Thus, an experimental study could confirm the relationship's directionality. Next, the findings are limited within the social network since, the data contain only those friendships, that are developed between the association members. Although, these friendships represent an important part of an individual's social environment, the social relationships external to the network may confound the overall results. In research's current form (a single network analysis) does not address consumer's involvement in other networks and how these relationships may impact their information searching for behavior. Since, consumers often have multiple networks (e.g, family, social associations and religious organizations), it is beneficial to integrate inter-network along with intra-network analyses to further advance this field of research (Sirsi *et al*., 1996). In closing, this research has direct implications to marketers and to consumer behavior. With the findings, marketers can use this knowledge to selectively target and customize their message to these consumers. Particularly, these findings are useful for companies to better access to their brand communities. Since, central experts and outer novices search for network-related information, marketers should facilitate ways to improve their receptivity to this type of information. Similarly, since, outer experts and central novices search for commodity-related information.

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