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A Leader's Influence on Members' Commitment in Non-Work Related Virtual Communities

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Abstract

Many online retailers allow customers to interact with each other through virtual communities (VCs) to increase stickiness to their websites and eventually profitability. Therefore, there have been some studies on how to nurse VCs, and a leader's influence on VCs is viewed as one major factor. However, although leadership is a key determinant of group behavior, it has been virtually ignored in IS literature (Fjermestad and Hiltz, 1999). Fjermestad and Hiltz (1999) discover that although most organizational groups typically have some form of assigned leadership, 94% of IS studies have no group leader being mentioned.

This research, therefore, investigates a critical role of leaders in VCs. Influence of two leadership styles from the behavioral theory – consideration and initiating structure – is examined in a non-work related VC setting which is very common in E-Commerce (EC) but are not fully investigated yet, based on the contingency theory. In addition, the moderating effects of three sources of power are tested which can facilitate leaders' influence on members.

The results from 92 individuals in various non-work related VCs show that significant influence of both leadership styles on members' motivation and commitment. Furthermore, expert power exhibits a significant moderating effect while the effects of reward power and legitimate power are negative due to the unstructured and voluntaristic nature of non-work related VCs.

Keywords: Leadership styles, Virtual community, Behavioral theory, Contingency theory, Source of power

1. Introduction

Many online retailers allow customers to interact with each other through virtual communities (VCs) to increase stickiness to their websites because stickiness means time, time means exposure and involvement, involvement means interest, interest means repeat business, and repeat business means high profitability.

In early 1999, for example, a woman who provided information about dolls (e.g., where to find a missing shoe) disappeared from a doll community in eBay. Those in the community who had come to know and value this woman became quite worried. When they tracked her down, they learned that she had gone through a divorce with her husband who had the computer and she didn't have the money to buy a new one. A group of members in the community later pooled together a sum of money to purchase a computer for her because they missed her and wanted her back online (Bradly, 2001, p.10). This group of loyal

members is likely to visit eBay more frequently than others and consequently has a higher chance of shopping at eBay. This is why most online retailers are interested in activating VCs.

There have been some studies on how to nurse VCs, and a leader's influence on VCs is viewed as one major factor. Some of the current IS literature (Griffith, Fuller and Northcraft, 1998; Timothy, Leidner and Dorothy, 2001; Butler, Sproull, Kiesler and Kraut, 2002; Wasko, Teigland, 2002) attempt to identify the core characteristics of leaders on the Internet accordingly.

However, Fjermestad and Hiltz (1999) reviewed 230 GSS articles and reported that although leadership was a key determinant of group behavior, it had been virtually ignored in IS literature. Furthermore, they discovered that although most organizational groups typically had some form of assigned leadership, but 94% of the IS studies had no group leader being mentioned. From these critics on previous studies as well as extant literature review on current research, it can be seen that the online leadership has largely been ignored despite its importance, and new studies are being filled with many broad and scattered research initiatives, which extend the breadth rather than the depth of the research.

Therefore, this study examines the limitations of the existing online leadership studies in order to increase the depth in this field. New research constructs pertaining to leadership styles under a certain type of VCs, which are supported by theories drawn from the traditional leadership studies, in particular the behavioral and contingency theories, are proposed to overcome the limitations in previous research.

Based on this theoretical foundation, this research tries to find effective leadership styles in non-work related VCs, which are very common in E-Commerce (EC) but are not fully investigated yet, along with the sources of power, which can make leaders more influential. The research on traditional leadership as well as online leadership is reviewed in the next section.

2. Literature Review

2.1 Traditional Leadership Studies
The development of leadership research is highly focused on leadership styles. These studies as summarized by Bass and Stogdill (1990) and Yukl (1998), have covered a broad spectrum from trait models to behavioral perspectives as well as contingency theories. The latest studies are on charismatic (Conger and Kanungo, 1987), transformational (Avolio and Howell, 1993), transactional (Burns, 1978) and the most recent servant leadership styles (Nair, 1994; Turner, 2000). All these initiatives attempt to broaden the scope of the leadership influence by examining both the leaders and the followers at different perspectives.

For the scope of this study, two leadership theories – behavioral and contingency theories, are discussed both in traditional and online contexts. A "pure" trait approach is excluded because it is almost impossible to identify a common set of attributes found in effective online leaders whose non-verbal cues are constrained on the Internet. Furthermore, leaders' ability is excluded as well because abilities or other attributes of leaders can be known only if he has control over how the task gets done (Blades and Fielder, 1976) which is absence in VCs. Behavioral approach is adopted because it focuses on actual and observable leadership

behaviors as opposed to innate qualities while the contingency theory is chosen because effective leadership needs to find a best fit between the situational factors and the leadership styles (Yukl, 1998).

The behavioral theory is absolutely critical because it shifted the focus of leadership studies from what leaders are to what leaders do which is extremely relevant to the VC context since leaders in VCs cannot be seen. The series of programmatic studies conducted at Ohio State University (Fleishman, 1953) and at the University of Michigan (Bowers and Seashore, 1966; Likert, 1961) exemplify the behavioral approach in work organizations. Ohio State researchers found that subordinates perceived their supervisors' behavior primarily in terms of two broadly defined categories, which were subsequently labeled consideration and initiating structure. The research work at Michigan revealed that three types of leadership behaviors, namely task-oriented behaviors, relations-oriented behaviors and participative leader behaviors, differentiating between effective and ineffective managers (Yukl, 1998).

Shortly after that, the contingency theories of leadership emerged, which consider how situational factors can alter the effectiveness of particular leader's behaviors and styles. The assumption is that no leadership traits, behaviors or styles automatically constitute leadership. The key is a fit between leadership style and the situation a leader faces (Yukl, 1998). The path-goal theory and the situational leadership theory are two examples of contingency-based leadership perspectives. Early work by Fiedler and Garcia (1987) demonstrated how relationship and task-oriented leadership styles could both be effective depending on situational variables.

2.2 Online Leadership Studies
Recent studies on the leadership styles move on from the traditional organization to the online group context. Though limited in their scope, these studies provide some insights to observe the online leadership influence on VCs.

Avolio, Kahai and Dodge (2001) review a comprehensive list of literature on what constitutes e-leadership in organizations. They define e-leadership as a social influence process mediated by Advanced Information Technology (AIT) to produce a change in attitudes, feelings, thinking, behavior and/or performance with individuals, groups and/or organizations. They propose a framework based on Adaptive Structuration Theory (DeSanctic and Poole, 1994) to study how AIT can influence and is influenced by leadership.

Another study on the leadership effectiveness on global virtual teams adopts multiple theoretical perspectives - behavioral, contingency and behavioral complexity from the leadership literature (Timothy, Leidner and Dorothy, 2001). The results show that online leadership is highly effective when leaders exhibit both consideration as well as initiating structure behaviors in their job.

On the other hand, there is a research on the influence of a particular leadership role – facilitator in group support systems (Griffith et al, 1998). It addresses a serious paradox in facilitation: the influence required to facilitate a group changes the group's outcomes. They concluded that the facilitation process, which cannot be avoided, does have a strong impact on the group's outcomes.

In recent researches, Butler et al (2002) examined the roles of leaders in online communities according to their positions like owner, administrator or host. Their findings show that these formal leaders actually do more community-building work than their members. They also

values different community benefits from their members. Wasko et al (2002) further generalize these formal leaders and active participants as a critical mass of individuals who contribute and sustain the online communities. They find that these individuals are concerned with enhancing their reputation, that is, their online status in the communities.

Therefore, in order to increase the depth of this field of study, we try to demonstrate how two representative leadership styles from the studies at OSU – consideration and initiating structure – affect the members in VCs based on the behavioral theory as well as they vary depending on situational variables such as types of VCs based on contingency theories similar to early work done by Fiedler and Garcia (1987) in the traditional leadership study.

Since Timothy et al's research (2001) had adopted behavioral and contingency theories in online leadership studies, we try to develop it further in depth as well as in different subjects. While their work is based on work-related teams, we are focusing on non-work-related VCs because most VCs in EC are non-work-related and work-related VCs have been heavily investigated in virtual team research (Fjermestad and Hiltz, 1999; Avolio, Kahai and Dodge, 2001; Griffith et al, 1998; Timothy, Leidner and Dorothy, 2001). These studies place main emphasis on leaders' roles and behavioral styles on their job performance by ignoring an important role of members in the leadership equation. However this study balances both sides by investigating leaders' role on members' motivation and commitment. Lastly, their research does not attempt to examine any potential moderating variables which possibly affect the leadership influence while this study attempts to add comprehensiveness to the previous research by examining the sources of power as a moderating variable which enables leaders to be more influential on members as Griffith et al (1998) did in the traditional leadership study.

2.3 Characteristics of Non-work-related VCs
The contingency theories argue that there is no one best style of leadership and that effective leadership depend on the fit between the leaders' variables and situational variables. This approach considers how situational factors alter the effectiveness of particular behaviors and styles of leadership (Yukl, 1998). This study defines virtual communities as social aggregations, characterized by some common interest(s) that emerge from the Internet when there is a critical mass (Shapiro and Varian, 1998) of members to sustain the interaction and community building work (Butler et al, 2002) so that personal relationship can be established in the cyberspace. Based on definition, this study categorizes VCs into two purposes – work-related and non-work-related. Work-related VCs are those that people join because of their real world work requirements and needs (e.g. virtual team). Non-work-related VCs are those that satisfy social and leisure needs of people. They do not have any specific task or goal to meet. Participants can just come and go freely without any obligation (e.g. IRC). As we mentioned earlier, in order to investigate the fit between leadership styles and situation that a leader faces based on the contingency theory, this study examines non-work related VCs.

3. Research Model and Hypotheses
Based on extant literature review and ideas, the research model is proposed as shown in Figure 1. We shall now explain each hypothesis in detail.

Figure 1 Research model
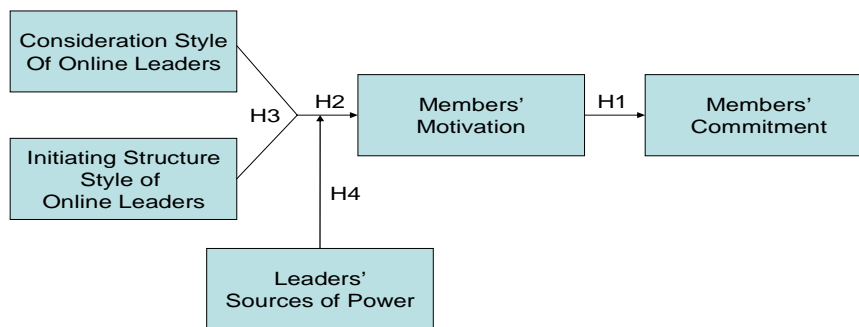
3.1 Members' Motivation and Commitment

Motivation is a function of the interaction among internal or dispositional factors (cognitive style, personality, self concept, attitudes and values) and external or situational factors (reward system, leadership style, job design, and culture). It is the behavioral force that energizes, directs, and sustains behavior (Beck, 2000). Hence, when members are motivated, they will be more committed to provide resources and perform the necessary community building work in order to sustain and enhance the benefits of the virtual communities.

Commitment, here, is defined as the act of binding oneself (intellectually or emotionally) to a course of action (WordNet, 1997). Butler et al (2002) proposed a resource-based model of the internal dynamics of sustainable social structures to explain this phenomenon. When current members continue to act as key providers of resources, the collective benefits of the community grow. These additional benefits will help to increase the membership size as well as to sustain the existing members in the community. Therefore, as long as members continue to value the benefits derived from their communities, they will be committed to be key providers of resources in virtual communities. Similarly, as long as members are kept motivated in their communities, they will be committed to perform the required tasks in the community.

> H1: High motivation of members will, in turn, lead to stronger commitment by the same members.

3.2 Leadership Styles

One of the major external or situational factors that motivate people is the leadership style as we mentioned above (Beck, 2000). The leadership behavioral theory argues that effective leadership can be characterized in terms of specific sets of observable activities that can then be used as a basis of comparison for leadership effectiveness. It presumes two effective leadership styles: initiating structure and consideration. Initiating structure is the degree to which a leader structures the task, provides direction and defines the leader and subordinate roles in the group and the group's goals. Consideration is the degree to which a leader is friendly and supportive in dealing with subordinates (House and Mitchell, 1974).

Both styles are critical for effective leaders and the series of research on leadership style in GSS contexts suggest that both styles do have significant effects on group process and/or

outcomes (Avolio et al, 2001). Therefore, we suggest that both leadership styles can be effective in VCs.

> *H2: Perceived high consideration of online leaders and high initiating structure will lead to stronger members' motivation.*

On the other hand, early findings indicated that consideration was related to employee job satisfaction while initiating structure was connected to group performance and productivity (Bryman 1996). House and Mitchell (1974) also found out that the correlation between relation-oriented behaviors and job satisfaction and productivity was higher in unstructured situations (non-work) than in structured situations (work) whereas the opposite was true of initiating structure. As a matter of fact, in a work-related VC, since people have to face many constraints like meeting deadlines, collaborating with one another in distant places, and interpreting non-verbal cues and messages, a more task-oriented leader will be effective to get the job done. Conversely, in a non-work-related VC, higher emphasis will be focused on social benefits. Thus, it is very crucial to have relations-oriented leaders to maintain the closeness of social relationship. Accordingly, the following hypothesis is proposed.

> *H3: The effect of perceived consideration of online leaders on members' motivation will be greater than that of perceived initiating structure in non-work-related VCs.*

3.3 Leader's Sources of Power

Besides investigating leaders' influence solely on itself, we also identify what makes leaders more influential. This study examines the sources of leader's power similar to Griffith et al's study in 1998. French and Raven (1995) defines power as the ability to exercise influence and thereby as the opportunity to bring about change. They propose five sources of power for a leader, namely the expert, referent, legitimate, reward and coercive power.

Some sources of power will increase the leader's influence on members' motivation in VCs. The expertise of leaders usually increases their influence and is even a mandatory requirement in non-work related virtual communities (e.g. hobby, game, interest, work) because members usually look up to experts who can attend to their requests. Reward power can also increase online leaders' influence because members are usually motivated to do something in exchange of certain desired benefits or resources (Ekeh, 1974). Leaders can further strengthen their online signification by using legitimate power assigned to them. This provides assurance for members to act according to what are required of them stated by the leaders.

> *H4a: High expert power of online leaders will moderate their influence to members' motivation.*
> *H4b: High reward power of online leaders will not moderate their influence to members' motivation.*
> *H4c: High legitimate power of online leaders will not moderate their influence to members' motivation.*

Other two sources of power, referent and coercive, are excluded from this study. Referent power is not appropriate in VCs, especially in non-work-related VCs because membership is dynamic and voluntary. Since members can join and leave as they like, the leaders cannot establish concrete relationship with their virtual members as compared to the offline world and accordingly referent power is hard to obtain in this dynamic context. Similarly, coercive

power will not result in higher members' motivation because online participation is assumed voluntary and without obligation.

4. Research Methodology

In order to test the proposed research model, we adopt the survey method as the main method for data collection and test the collected data with the Partial Least Squares (PLS) method. The unit of analysis is an individual.

4.1 Measurement and Data Collection

The items in the questionnaire are developed by adapting the existing measures that were already validated by other researchers. The items used to measure leader's behavior styles are based on the instrument used by Halpin and Winer (1957). In order to examine the intensity and direction of the 3 sources of power (expert, reward and legitimate), the instrument by Hinken and Schriesheim (1989) is incorporated into the questionnaire with some amendment to fit into virtual community context. The instrument for members' motivation is taken from the Multifactor Leadership Questionnaire (Bass and Avolio, 1995). Members' commitment can be indicated by the amount of community-building work they engaged in. It is measured using the instrument by Butler et al (2002) that lists out all the community building work (i.e. content provision, infrastructure maintenance, audience engagement, social encouragement, social control and external promotion).

Data were collected from an online forum at http://sgForums.com. This forum is selected because it has a large growing membership size of more than 18,000 people. A web-based questionnaire is selected as the mean of collecting data The members can access the questionnaire through an URL link placed on the forum's main page.

137 responses were collected over a period of 2 months in 2003. Out of 137 responses, responses that fail to answer the negative-worded question truthfully were eliminated. Those responses that had too many incomplete data were also discarded. All in total, we were able to obtain 92 valid responses for the final analysis.

The VCs described by the respondents spread across a wide range. They include sgForums, game forums, Hardwarezone forum, Yahoogroups, Communityzero, Circles99, Internet-relay chat and other minor website forums. All these VCs are non-work-related and share common functionalities such as posting and reading of messages. Online people join the appropriate VCs that best meet their needs on their own.

Among 92 responses, 68.5% are male and 31.5% are female. The respondents are mainly teenagers, having age group ranging from 13-25.

5. Data Analysis and Findings

5.1 Analysis Method

PLS is chosen for this research because the sample size collected was relatively small. According to Chin (1998), the sample size requirement is 10 times either (a) the largest number of formative indicators in a block or (b) the largest number of independent variables impacting a dependent variable, whichever is greater. For this study, the sample size of 92 respondents for the final analysis is not large, but still within the acceptable range based on the above requirement. In addition, PLS does not require strong theory and can be used as a

theory-building method (Chin, 1998b, Barclay et al., 1995). Thus, PLS is appropriate in this study because it was the first time to test leadership behavioral styles on members' motivation and commitment, moderated by three sources of power in non-work-related VCs. PLS-Graph version 3.0 was used to test the proposed model.

5.2 Measurement Model

Following the recommended two-stage analytical procedures (Anderson and Gerbing, 1988; Hair et al., 1998), a confirmatory factor analysis is first conducted to assess the measurement model and then, the structural relationship is examined.

In order to validate our measurement model, three types of validity of the instrument are assessed: content validity, convergent validity and discriminant validity. Content validity is established by ensuring the consistency between the measurement items and extant literature. The definitions of consideration and initiating structure were based on behavioral theories.

Motivation was extracted from the Multifactor Leadership Questionnaire by Bass and Avolio (1995). Power was defined and used as in the past research by Hinken and Schriesheim (1989). The definition of members' commitment was based on the work by Butler et al (2002) which they described community-building work as commitment and responsibility of both leaders and members. The content validity was further strengthened by a pretest conducted within university students who were participating in non-work-related VCs.

Convergent validity is assessed by looking at the composite reliability and the average variance extracted from the measures (Hair et al., 1998). Although many studies employing PLS have used 0.5 as the threshold reliability of the measures, 0.7 is a recommended value for a reliable construct (Chin, 1998). As shown in Table 2, our composite reliability values range from 0.71 to 0.93. For the average variance extracted by a measure, a score of 0.5 indicates its acceptable level (Fornell and Larcker, 1981). Table 2 shows that the average variances extracted by our measures range from 0.62 to 0.87 – above the acceptable value except for the members' commitment construct which has a value of 0.45. However, this is acceptable because that particular construct is a combination of three different constructs that are used to measure the various level of community building work. In total, these constructs will actually measure the degree of members' commitment in their virtual communities based on the level of community building work they engaged in.

Finally, we verify the discriminant validity of our instrument by looking at the square root of the average variance extracted as recommended by Fornell and Larcker (1981). As shown in Table 3, the result reveals that the square root of the average variance extracted for each contract is greater than the correlations between it and all other constructs. Also, the results of the inter-construct correlations show that each construct shares larger variance with its own measures than with other measures.

Table 2. The result of confirmatory factor analysis

Measures	Items	Composite Reliability	Variance Extracted
Consideration	4	0.87	0.62
Initiating Structure	4	0.88	0.64
Motivation	2	0.90	0.82
Commitment	3	0.71	0.45
Expert Power	2	0.93	0.87
Reward Power	2	0.92	0.86
Legitimate Power	2	0.90	0.81

Table 3. Correlation between constructs

	Con	IS	Mot	Com	EP	RP	LP
Con	0.787	0.335	0.533	0.292	0.588	0.127	0.169
IS	0.335	0.800	0.547	0.200	0.254	0.262	0.204
Mot	0.533	0.547	0.906	0.309	0.562	0.288	0.158
Com	0.292	0.200	0.309	0.671	0.233	0.222	0.320
EP	0.588	0.254	0.562	0.233	0.933	0.364	0.329
RP	0.127	0.262	0.288	0.222	0.364	0.927	0.615
LP	0.169	0.204	0.158	0.320	0.329	0.615	0.900

Note: Con: Consideration; IS: Initiating Structure; Mot:
Motivation; Com:Commitment; EP: Expert Power; RP: Reward
Power; LP: Legitimate Power;
* The shaded numbers in the diagonal row are square roots of the
average variance extracted

5.3 Structural Model

With the adequate measurement models, the proposed hypotheses were tested with PLS. The results of the analysis are summarized in Figure 2 and summarized in Table 4.

Based on the results from Figure 2, hypotheses – H1 (β=0.322, t=2.785, $p<0.01$) and H2 (β=0.172, t=3.274, $p<0.001$ for Consideration; β=0.320, t=3.647, $p<0.001$ for Initiating Structure) are supported while H4a (β=0.110, t=2.211, $p<0.05$), H4b (β=-0.210, t=-2.085, $p<0.05$) and H4c (β= -0.250, t=-4.153, $p<0.001$) are partially supported. Partial support means that only the expert, reward and legitimate powers moderate the leaders' consideration behavioral influence. Besides, only expert power gives a positive moderation effect whereas reward power and legitimate power give a negative moderation effect.
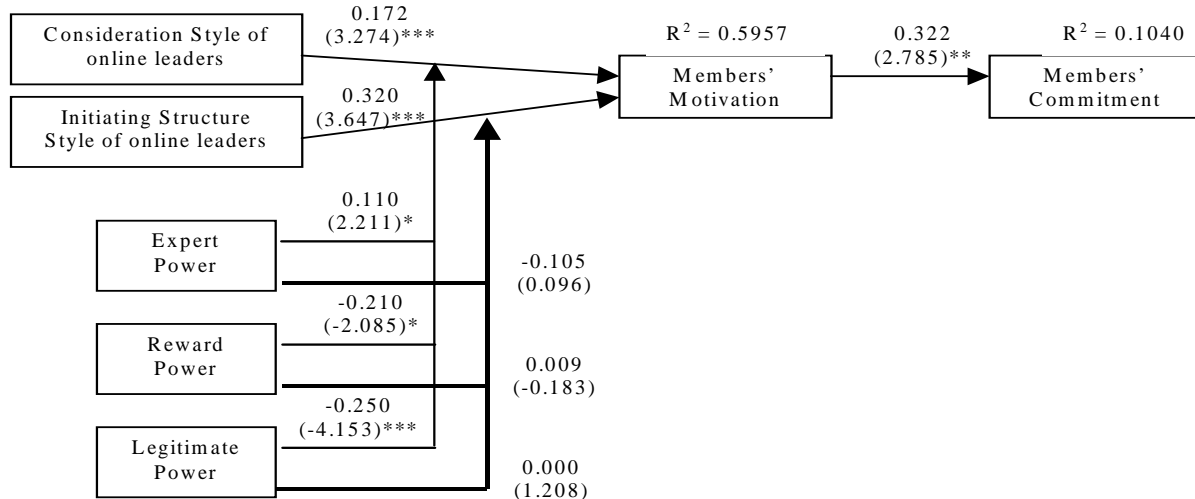
Figure 2. Results of PLS analysis

Table 4. Hypotheses test results

Hypotheses	Results
H1: High motivation of members will, in turn, lead to stronger commitment by the same members.	Supported
H2: Perceived high consideration of online leaders and high initiating structure will lead to stronger members' motivation.	Supported
H3: The effect of perceived consideration of online leaders on members' motivation will be greater than that of perceived initiating structure in non-work-related VCs.	Not supported
H4a: High expert power of online leaders will moderate their influence to members' motivation. H4b: High reward power of online leaders will not moderate their influence to members' motivation. H4c: High legitimate power of online leaders will not moderate their influence to members' motivation.	Partially supported

6. Discussion and Implications

6.1 General Discussion

The primary objective of this study is to enhance the understanding of the effective leadership styles that increase members' motivation and eventually commitment based on the behavioral theory within a context of non-work related VCs based on contingency theories. In addition, the moderating effects of the sources of leader's power are examined to understand how leaders are able to improve their influence on members under the same context.

The first finding on the influence of leadership styles on members' motivation is consistent with existing leadership literature. Both consideration and initiating structure behavioral styles are positively associated with group outcomes, in this case, members' motivation (Bass and Avolio, 2000). Furthermore, high members' motivation leads to stronger commitment in VCs. Therefore, in order to increase members' commitment which is the level of community building work they engaged in, they must first be motivated by effective leadership styles, both consideration and initiating structure.

However, although consideration style is expected to have a higher path coefficient to the members' motivation than initiating structure style owing to the nature of non-work-related VCs, the results prove otherwise. The path coefficient of initiating structure (β=0.320) is greater than that of consideration (β=0.172). This may be explained with the findings by Butler et al (2002) that leaders actually do more community work than their members. Since members in non-work related-VCs are likely to receive social benefits without much contribution by themselves, members are motivated when their leaders do most of the community works for them so that they can enjoy the maximum benefits without making any effort themselves. Such free riders do form the majority group in non-work-related VCs (Wasko and Teigland, 2002).

As shown in the results above, the sources of power have no significant moderating effect on initiating structure style but on consideration in non-work related VCs. This shows that leadership behavioral styles should be appropriated according to the type of virtual communities, which is consistent with the contingency theories. Hersey and Blanchard (1969) emphasized that leadership style should be appropriate for a given situation. Since members

in non-work-related VCs are not engaging in serious tasks, leaders may exhibit more of consideration style than initiating structure style. Therefore, any slight variants in leaders' power will definitely cause some effects on this consideration style.

Another interesting finding from the sources of power is that legitimate power and reward power actually decreases leaders' influence in non-work-related VCs while online leaders can exert their consideration style better if they have expertise and knowledge required by their members. This result differs from conventional power and motivation theories where legitimacy and incentives can be used as a form of motivational drive (Bass and Stogdill, 1990). This may be because membership in non-work-related VCs is voluntary and members do not often need to assume many responsibilities. Therefore, any attempt to assert formal authority may deem unpleasant to the members. They may choose to leave to disobey or even to leave if too much of this legitimate power is felt. As for reward power, Kohn (1993) argued that incentives do not alter the attitudes that underlie our behaviors. They do not create an enduring commitment to any value or action, but rather merely and temporarily change what we do. Further, they may have a punitive effect because they are manipulative like coercive punishments. Those members that do not receive a reward may feel that they are being punished or that their leaders are not being fair. They may also ignore leaders' influence and concentrate solely on expected rewards. Furthermore, leaders may often misuse incentives as a substitute to treat members better. If members themselves value social needs and affiliations, what leaders should do is to treat them better, give them support and listen to their needs.

6.2 Implications for Academics
Based on our findings, the research on online leadership is enhanced in four ways. First, we reconcile two quite opposite theories – the behavioral theory which presumes the best leadership style across various situations and the contingency theories which assert a fit between the leadership style and the situation which a leader faces – by demonstrating how two representative leadership styles in the behavioral theory affect the members in a certain type of VCs, namely non-work related-VCs. Secondly, the study is situated within non-work-related VCs which have rarely been tested in a real world setting so far and posits that leadership styles have differential influences on members' motivation in the non-work-related VC context. Third, we emphasize leaders' relationship with followers by testing the impact of leadership styles on members' motivation and commitment instead of on their job performance unlike previous studies, which completely ignored this relationship. In addition, the sources of power is added and measured to give comprehensive understanding of leaders' facilitation process.

6.3 Implications for Online Leaders and VC Providers (Including Online Retailers)
Many thousands of companies are providing VCs that are intended to generate brand loyalty, positive image, to collect information about the customer, and consequently, to generate profit. Therefore, knowing what kinds of leadership styles – initiating structure or consideration – are more desirable in different type of virtual communities, especially non-work-related VCs in this research can be a good start to make active VCs.

This empirical study shows maximizing both behavioral styles produces better leadership outcomes. However, successful leaders are those who can adapt their behaviors to meet the needs of their members and the particular situation they are in. Under different situations, choosing the correct combination of power can help to maximize leadership influences. Since expert power is positively associated with leadership influence in non-work-related VCs,

providers can appoint people with the relevant expertise to lead and leaders in these VCs leverage their expertise to enhance the stickiness of members. VC providers can also employ several experts so that they can complement one another and form a collective expert group to influence the members.

On the other hand, reward power actually reduces leadership influence. Therefore, VC providers can reduce the reward power of online leaders by automating their incentive system. That is, members can be rewarded by a computerized software system. In this way, online leaders can encourage their members to earn rewards or maybe even assist those who need help with their expertise. By doing so, it can actually increases the leadership influence to members' motivation.

Since the legitimate power causes negative effect as well, VC providers can actually let members select and appoint leaders by themselves to manage VCs. In this way, no formal leadership influence is felt. It is not difficult to predict that members who exhibit more consideration and/or initiating structure styles for VCs may be appointed as leaders.

7. Suggestions for Future Research

This study enhances the credibility of past online leadership research (Timothy et al, 2001) by adopting environmental factor (different type of VCs) based on contingency theories instead of human factor (different type of leadership roles) unlike other studies. This provides a strong indication that indeed, appropriate leadership styles are needed in the different VC context, namely non-work-related VCs which are very common in online retailing web sites. However, more work can be done to identify the various critical contingencies as well as the most appropriate leadership style(s) for each contingency in the future. The impact of cultural differences might be one of good candidates. Secondly, there has been no research known so far that examines behavioral, contingencies and power theories together as a single leadership equation. Thus, future research can be conducted on the collective leadership model in this study.

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