

## **INTERACTIVE EFFECTS OF GENDER AND LEADERSHIP STYLES ON OPEN SERVICE INNOVATION: A STUDY OF MALAYSIAN DOCTORS**

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***Abstract:** This study examined the positive association of leadership styles (paternalistic, authentic and democratic) with open service innovation and the moderating role of gender in these relationships. Furthermore, gender differences in these leadership styles and open service innovation score of males and females were also investigated. A cross-sectional survey was conducted to collect the data of 344 doctors working in Hospitals of Malaysia. Hierarchical linear regression results revealed the positive association of leadership styles (paternalistic, authentic and democratic) with open service innovation, and moderated regression analysis showed a significant moderating role of gender between paternalistic and democratic leadership styles on open service innovation. While no moderation effect of gender was observed between authentic leadership style and open service innovation. Independent groups t-test results further confirmed that women are more paternalistic and democratic in their leadership styles as compared to men while significant difference were found for authentic leadership style score for male and female doctors. This research provides key insight that women have more potential for paternalistic and democratic leadership positions and are motivated for open service innovation practices.*

***Keywords:** Open Service Innovation, Paternalistic Leadership Style, Democratic Leadership Style, Authentic Leadership Style, Gender*

### **INTRODUCTION**

Leadership is considered to be an important concept in contemporary research. This construct has been investigated for its importance, impact, and association with organizational outcomes to signify the key role played by this phenomenon in

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organizational success. Theories of leadership have also argued about the significance and vitality of leadership in equally effective ways in different cultures (Dorfman, Javidan, Hanges, Dastmalchian, & House, 2012). Sustainable competitive advantage is one of the major challenges faced by these days' organizations. Leaders of the organizations are using multiple strategies such as open service innovation to gain a competitive advantage in the market (Chesbrough, 2011).

Open service innovation is the construct lately emerged in innovation stream of research with the explanation of Chesbrough (2006) about firm's capability to incorporate internal and external ideas to create a sustainable competitive advantage. Chesbrough (2011) defined open service innovation as "*the use of purposive inflows and outflows of knowledge to accelerate internal innovation, and expand the markets for external use of innovation*" (p. 69). It is evident from prior research that leaders play most important role in the formation of innovation (Fleming & Waguespack, 2007; Laursen & Salter, 2006). They stimulate the followers' psychological processes for innovative behavior (Gong, Huang, & Farh, 2009; Lee, 2008), knowledge creation and sharing procedures (Goh, 2002; Von Krogh, Nonaka, & Rechsteiner, 2012) and intellectual capital (Putri, 2015). These elements are considered as essential attributes of open service innovation (Chesbrough, 2011).

Numerous researchers largely focused on the influential role of leadership styles such as transformational leadership style, transactional leadership style etc. in innovation process (Engelen, Schmidt, Strenger, & Brettel, 2014; Kang, Solomon, & Choi, 2015; Sarros, Cooper, & Santora, 2008). West *et al.* (2003) investigated the role of leadership in promoting innovation and found that leadership clarity predicts team innovation of health care workers. In light of previous studies, it has become imperative to investigate the influence of different emerging leadership styles on open service innovation. In the last four decades of advancement in theory and research in the leadership domain resulted in the emergence of new leadership styles such as paternalistic, democratic and authentic leadership styles (Aycan, 2006). The research on new emerging leadership styles such as paternalistic, authentic and democratic is scarce and more specifically investigations on the association of these styles with open service innovation are very rare in leadership and open innovation literature (Chesbrough, 2011; Lerner & Tirole, 2001; Perrone, Zaheer, & McEvily, 2003). Thus, this study aims to bridge the gap by studying the effectiveness of these leadership styles (paternalistic, authentic and democratic) on successful deployment of open service innovation in the organization.

In recent years, increasing role of women in societies has suggested the organizations to re-analyze the managerial and leadership positions and directed the researcher intention towards exploring the effective roles and leadership styles that may be different between males and females. In the USA, women have occupied almost 46% of the different managerial and administrative positions (U.S. Bureau of Labor Statistics, 2002). In 2012, 9% of the females were at CEO positions (Grant Thornton, 2012). According to Eagly and Johnson (1990) males and females differ in their

leadership approaches, males are more task-oriented leaders while females are relationship-oriented leaders. Some other meta-analysis also showed that males are more competent and motivated to work in competitive environment (Eagly, Johannesen-Schmidt, & Van Engen, 2003; Eagly, Karau, & Makhijani, 1995; Van Engen, 2002). As a result, it is suggested that different orientation and tactics may create different obstacles and bring different unexpected organizational outcomes. Researchers in past have looked at gender differences in different leadership styles such as transformational leadership style (Reuvers, Van Engen, Vinkenbug, & Wilson Evered, 2008). However, research on gender differences in innovation field is scarce and limited. This research extended the investigation by empirically testing the interaction of gender with leadership styles (paternalistic, authentic and democratic) for predicting the open service innovation and gender differences in open service innovation and leadership styles of male and female managers.

This study is conducted in Eastern cultural settings of Malaysia especially health care sector. It is recommended by researchers to test the leadership and open service innovation theories in Eastern culture as well as they are mainly developed in Western cultures (Pellegrini, Scandura, & Jayaraman, 2010). Developing countries like Malaysia are investing a significant portion of their developmental budget in establishing an innovative environment in health care sector to achieve the regional and global competitive advantage in this industry (Hooker, 2010). So there is a need to explore the dynamics of healthcare sector for better understanding (Bodin, Ozhikenov, Ozhikenova & Sergeenkov, 2015). Malone (2004) also argued that leaders can stimulate health care workers towards innovative working behavior. Keeping in view the focus of the Malaysian government on this sector and the ambitious plans for health care sector to support the national vision of 2020, it is important to study the existing leadership styles and innovative trends in this sector to bring policy insights for the Malaysian policy institutions.

## **THEORY AND HYPOTHESES**

Farh and Cheng (2000) defined that paternalistic leadership style is based on the values of fatherly care and strong discipline with major three dimensions such as authority, morality and benevolence. Authoritarianism aspect of paternalistic leader describes the authoritative behavior, power and control over followers where benevolence refers to leader's concern for the well-being of followers. While the third dimension moral character described that leaders act like a role model for their followers (Aycan, 2006; Farh, Cheng, Chou & Chu, 2006). Thus, these attributes of paternalistic leadership style make it effective in collectivistic culture especially in Eastern culture (Pellegrini & Scandura, 2006). The mechanism of this leadership style is in accordance with the expectancy theory (Vroom, 1982). A two-way give and take relationship is the basis of leader-member relationship in this style. These major three components of the paternalistic leadership style also have a significant influence on the attitude and behaviors of the followers (Aycan, 2006; Niu, Wang, & Cheng, 2009; Wu, Huang, Li, &

Liu, 2012). On the basis of these characteristics and effective role of paternalistic leaders in non-Western culture, it is argued that moral character and benevolent attitude of paternalistic leaders provide a free environment that encourages the employees for their participation in the decision-making process and further contributes to open service innovation (Wang, He, & Mahoney, 2009). Authoritarianism aspect of paternalistic leader requires employees to follow the instructions while caring and fatherly attitude of paternalistic leader increases the motivation and enthusiasm (Aycan, Kanungo, & Sinha, 1999) and they follow their leader. On the basis of previous literature support, a positive association is expected between paternalistic leadership style and open service innovation. Thus, following hypothesis is suggested.

**H1:** *Paternalistic leadership style is positively related to open service innovation.*

Myers (1996, p.329) stated that “a democratic style—one that delegates authority, and welcomes input from team members . . . is good for morale”. Lewin and Lippitt (1938) distinguished democratic leadership style from other leadership styles as it involves followers in the decision-making process, and encourages followers for their positive feedback. This study further used path-goal theory (House, 1996) to explain the effective relationship between leadership styles and open service innovation. According to this theory, consulting and taking the ideas from followers is the best way of achieving the desired goal. The leadership styles that best fit with the working environment and employees’ attitude increase the performance and motivation. The positive attitude of democratic leaders and involvement of followers in decision-making process increase the satisfaction and commitment among followers and their productivity (Anderson, 1959; Foels, Driskell, Mullen, & Salas, 2000). Effective communication and participation of followers in decision-making process describe the basic attributes of democratic leaders (Bass, 1991; Luthar, 1996) which make it effective in collectivistic cultures such as Malaysia. Thus there is a match between characteristics of democratic leadership style and culture according to Hofstede (1986). Malaysia is considered collectivistic culture in nature which makes it an interesting field of study. According to Chesbrough (2011), organizations rely on both internal and external sources of innovative ideas and knowledge to implement open service innovation. So, in the light of Kuczmarski and Kuczmarski (1995) findings, it is argued that democratic leaders promote and encourage the free-flow of ideas and information across organizational boundaries that further foster the open service innovation process. Thus, on the basis of ample support from literature following hypothesis is suggested.

**H2:** *Democratic leadership style is positively related to open service innovation.*

Authentic leadership is defined as “a pattern of leader’s behavior that draws upon and promotes both positive psychological capacities and a positive ethical climate, to foster greater self-awareness, an internalized moral perspective, balanced processing of information, and relational transparency on the part of leaders working with followers, fostering positive self-development” (Walumbwa, Avolio, Gardner,

Wernsing, & Peterson, 2008, p. 94). The elements which differentiate authentic leadership from other leadership styles include fairness in processes, benevolence, behavioral stability and shared goal concept (Avolio, Gardner, Walumbwa, Luthans, & May, 2004; Michie & Gooty, 2005). These characteristics of authentic leaders encourage followers for feedback and their participation in the decision-making process (Wong & Cummings, 2009) that further helps in open service innovation activities. Authentic leaders also motivate individuals for better performance. As the result individuals put efforts and use their abilities and knowledge for organizational success (Gardner & Schermerhorn, 2004). Previous researchers also highlighted that authentic leader's characteristics to inspire employees for knowledge sharing and innovation (Avolio *et al.*, 2004; Èerne, Jakliè, & Škerlavaj, 2013). Avolio and Gardner (2005) also suggested that authentic leadership style plays an effective role in stimulating the innovation in the organization. Furthermore, due to resemblance of characteristics of authentic leadership style with attributes of open service innovation. Cooper, Scandura, and Schriesheim (2005) also recommended to investigate how authentic leadership style stimulates the open innovation processes in the organization. Thus, based on prior research, following hypothesis is suggested.

**H3:** *Authentic leadership style is positively related to open service innovation.*

This research extended the management literature by studying whether women's leadership styles differ from men's leadership style and how gender moderates the relationship between leadership styles (paternalistic, authentic and democratic) and open service innovation. This study framed the study hypotheses about gender differences in leadership style on basis of social role theory (Eagly & Johannesen Schmidt, 2001; Eagly & Johnson, 1990). They argued that leadership styles and roles are constrained by their gender roles in society and exert their influence on male and female leaders of same leadership style. Consistent with arguments from this theory, Ridgeway (2001, p. 644) stated that gender provides an "implicit, background identity" at the workplace. Prior research is also consistent in showing the gender differences in leadership styles and their effectiveness (Andersen & Hansson, 2011). According to Eagly *et al.* (2003), women leaders are more supportive of their role as compared to their men counterparts while men are more task-oriented, risk taking than women (Apestequia, Azmat, & Iriberry, 2012; Arano, Parker, & Terry, 2010; Katungi, Edmeades, & Smale, 2008). Eagly and Johnson (1990) conducted a meta-analysis to determine the role of gender differences in leadership styles and concluded that women are more democratic and allow their followers in the decision-making process and they are less autocratic in style than men. In hospitals, pharmacy and nursing are female dominant professions in many developed countries (Evans, 1997; Hassell, 2003). According to Varma and Stroh (2001) Varma and Stroh (2001), individuals are more comfortable to work with others who have same demographic characteristics and dissimilarity can decrease the leader's effectiveness (Tsui & O' Reilly, 1989). This increase or decrease in leader effectiveness is pointing towards moderated influence of gender between leadership styles and open service innovation.

Thus, on the basis of rigorous literature support, it is expected that interactive effect of gender and leadership styles is more likely to influence the deployment of open service innovation in the organization. So, following hypotheses are suggested.

**H4a:** *Gender differences moderate the relationship between paternalistic leadership style and open service innovation.*

**H4b:** *Gender differences moderate the relationship between democratic leadership style and open service innovation.*

**H4c:** *Gender differences moderate the relationship between authentic leadership style and open service innovation.*

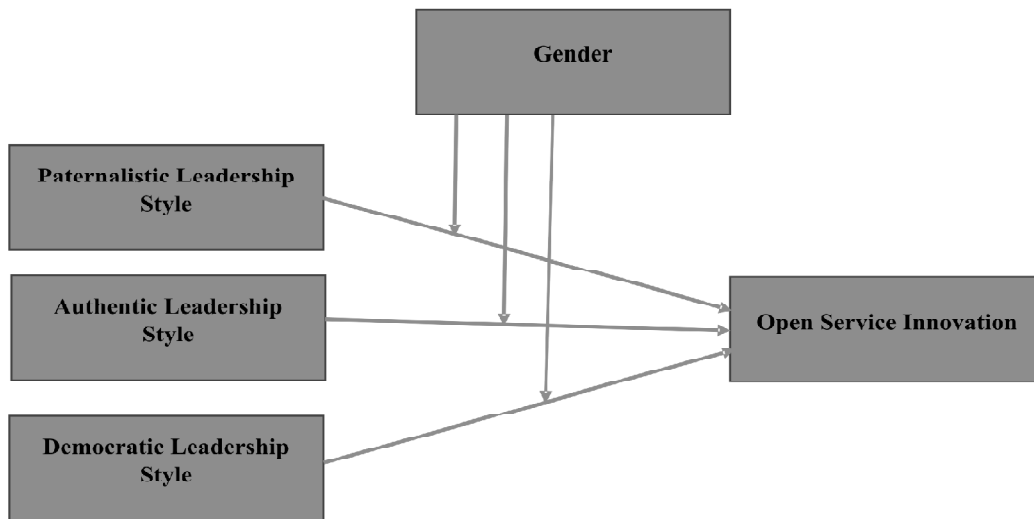


Figure 1: Theoretical Framework

## METHODOLOGY

### Sample and Descriptive Statistics

For data collection, a survey was conducted using the questionnaire in Malaysian Healthcare Sector. A cover letter was attached to each questionnaire that ensured the confidentiality of the information and purpose of the survey. For this survey research, personal contacts and references were used to make sure of the maximum participation of doctors working in this sector.

Data was collected from 8 working hospitals in Malaysia (active response rate 82%). Out of 344 responses, 252 respondents were from the public sector and 19 respondents were from the private sector, while the remaining 73 respondents were from semi-government organizations of Malaysian healthcare sector. Among 344 respondents, 194 (56.4%) were males and 150 (43.6%) were females. The average age of the respondents was 30 years with an average tenure of 3 years in current

organizations and average total experience of the respondents was 5 years. These respondents were representing various departments and various positions in the Malaysian healthcare sector.

## **Measures**

### ***Paternalistic Leadership Style***

Paternalistic leadership style was measured by using a 5-item scale developed by Aycan *et al.* (2000). The responses were taken on a 5-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree. The sample item for measurement of paternalistic leadership style included "The ideal boss is like a parent" and "Managers should provide fatherly advice and directions to their subordinates". The reliability (Cronbach alpha = 0.75) was found from the study data.

### ***Authentic Leadership Style***

Authentic leadership style was measured by using 16-item scale of Neider and Schriesheim (2011). The responses were taken on a 5-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree. The sample item for measurement of authentic leadership style included "My leader describes accurately the way that others view his/her abilities", and "My leader shows consistency between his/her beliefs and actions". The reliability (Cronbach alpha = 0.74) was found from the data.

### ***Democratic Leadership Style***

The 6-item scale of Neider and Schriesheim (2011) was used to measure democratic leadership style. The responses were taken on a 5-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree. The sample item for measurement of democratic leadership style included "Leaders need to help subordinates accept responsibility for completing their work" and "It is the leader's job to help subordinates find their passion". The reliability of the scale was reported 0.76 from the data.

### ***Open Service Innovation***

The 25-item measure for open service innovation was adopted from Rangus, Drnovsek, and Di Minin (2013). Most of the responses were taken on a 7-point Likert scale ranging from 1 = strongly disagree to 7 = strongly agree and 1 = never to 7 = always. In total, 6 dimensions (inward intellectual property, venturing, and outward IP licensing, outsourcing R&D and external networking, licensing and external participation, customer involvement, employee involvement,) were tapped in 25-item measure covering different aspects of open service innovation. The sample items of these dimensions include "We acquire new know-how / technology through informal ties with researchers from various laboratories" and "In our hospital, we actively encourage communication among unrelated groups of employees in the hospital" etc. The reliability for open service innovation scale was found 0.83.

### Control variables

One way analysis of variance (ANOVA) was used to test whether demographic variables have a significant influence on the mediator and dependent variables of this study. The results revealed that gender, hospital type (i.e. government, private, semi-govt.), no. of specialists, income of employees, the number of employees, total experience etc. are significantly associated with open service innovation while job nature was not significantly associated with the dependent variable of this study i.e. open service innovation. So all significant demographic variables were controlled for analysis.

### RESULTS

Table 1 shows mean, SD, Cronbach alpha values and bivariate correlation values of all study variables.

**Table 1**  
Mean, Standard Deviation, Correlation and Reliabilities

S #	Variables	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13
1	Org age	2.76	1.32	-												
2	Hospital type	1.49	0.840	0.006	-											
3	No Specialist	3.89	1.272	.361**	.218**	-										
4	Gender	1.44	0.497	-0.03	-.160**	-0.051	-									
5	Length Tenure	3.12	4.161	0.054	0.043	0.1	-.160**	-								
6	T experience	5.05	4.855	0.037	.380**	.132*	-.267**	.467**	-							
7	Income	2.32	0.770	-0.055	.267**	-0.01	-.240**	.310**	.689**	-						
8	Employees	4.06	1.211	.421**	0.058	.578**	0.016	.128*	.130*	0.017	-					
9	P- leadership	3.62	0.741	-0.018	-.309**	-.291**	.148**	-.121*	-.316**	-.254**	-.169**	(0.75)	-			
10	ATH Leadership	3.46	0.62	-0.079	-.292**	-.359**	0.091	-0.092	-.331**	-.221**	-.252**	.641**	(0.74)	-		
11	Dem Leadership	3.76	0.595	-0.027	-.263**	-.284**	.152**	-.197**	-.319**	-.201**	-.112*	.637**	.649**	(0.76)	-	
12	OSI	4.74	0.91	-.135*	-.253**	-.359**	.134*	-0.102	-.288**	-.156**	-.284**	.447**	.507**	.464**	.370**	(0.83)

Note: N= 344; Alpha reliabilities are represented in parenthesis. P- Leadership = paternalistic leadership; ATH leadership = Authentic Leadership; Dem leadership= democratic leadership; OSI= open service innovation; \* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$

The mean of paternalistic leadership score for all participants was 3.62, with a standard deviation of  $\pm 0.74$ . The mean of democratic leadership was 3.76, with a standard deviation of  $\pm 0.59$ . The authentic leadership mean was 3.76 with standard deviation value  $\pm 0.59$ . The mean value of open service innovation for all participants was 4.74 (SD=  $\pm 0.91$ ). The mean paternalistic leadership style score of females was slightly higher than mean score for males (3.74 and 3.52 respectively). Similarly, the mean of authentic and democratic leadership styles of females was slightly higher than males as reported in table 2.



**Table 2**  
Descriptive Statistics for Leadership Styles and Open Service Innovation Scores of Male and Female Employees

Variables	Males			Females		
	M	SD	N	M	SD	N
Paternalistic Leadership Styles	3.52	0.82	194	3.74	0.59	150
Authentic Leadership Style	3.41	0.66	194	3.52	0.55	150
Democratic Leadership Styles	3.67	0.64	194	3.86	0.51	150
OpenService Innovation	4.62	0.92	194	4.86	0.89	150

A hierarchical linear regression analysis was performed to test the relationship between leadership styles (i.e. paternalistic, authentic and democratic) and open service innovation. The regression results revealed a significant positive relationship of paternalistic leadership style ( $\beta = 0.32$ ,  $\Delta R^2 = 0.08$ ,  $p < 0.001$ ) authentic style has ( $\beta = 0.38$ ,  $\Delta R^2 = 0.11$ ,  $p < 0.001$ ) and democratic style ( $\beta = 0.34$ ,  $\Delta R^2 = 0.10$ ,  $p < 0.001$ ) with open service innovation. The results presented in table 3, further showed that these leadership styles cause 8%, 11% and 10% variance in open service innovation respectively.

**Table 3**  
Regression Results for Leadership Styles and Open Service Innovation

Predictors	Open Service Innovation		
	$\beta$	$R^2$	$\Delta R^2$
Step 1			
Control Variables		0.21***	
Step 2			
Paternalistic Leadership	0.32***	0.29	0.08***
Authentic Leadership	0.38***	0.32	0.11***
Democratic Leadership	0.34***	0.31	0.10***

Note. N= 344, \* $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\* $p < 0.001$

To further test the moderating role of gender in relationships of leadership styles and open service innovation, moderated regression analysis was performed.

**Table 4**  
Moderation Analysis of Gender between Paternalistic Leadership style and Open Service Innovation

Predictors	Open Service Innovation		
	$\beta$	$R^2$	$\Delta R^2$
Step 1			
Control Variables		0.206***	
Step 2			
Paternalistic Leadership style	0.029		
Gender	-0.506*	0.291	0.086***
Step 3			
PLx Gender	0.660*	0.301	0.010**

Note: N= 344, \* $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\* $p < 0.001$

Results reported in table 4 show that interaction term of gender with paternalistic leadership style was significant for open service innovation ( $\beta = -0.660$ ,  $\Delta R^2 = .010$ ,  $p < .01$ ) and explaining 1% variance in open service innovation. The difference in the  $R^2$  values between step 2 and step 3 was 0.01. The results suggested only 1% difference in the relationship of the paternalistic leadership style of males and females with open service innovation. However, the interaction term of gender and authentic leadership style was not proved significant in this research as reported in table 5. So hypothesis 4b is rejected in this research. Lastly, the interaction term of gender with democratic leadership style was also significant for open service innovation ( $\beta = 1.061$ ,  $R^2 = .301$ ,  $p < .01$ ). The difference in the  $R^2$  values between step 2 and step 3 was 0.017. These results explained only 1% difference in the relationship of the paternalistic leadership style of males and females with open service innovation as presented in table 6.

**Table 5**  
Moderation Analysis of Gender between Authentic Leadership style and Open Service Innovation

Predictors	Open Service Innovation		
	$\beta$	$R^2$	$\Delta R^2$
Step 1			
Control Variables		0.207***	
Step 2			
Authentic Leadership style	0.174		
Gender	-0.359	0.320	0.113***
Step 3			
ALx Gender	0.480	0.325	0.005

Note: N= 422, \* $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\* $p < 0.001$

**Table 6**  
Moderation Analysis of Gender between Democratic Leadership style and Open Service Innovation

Predictors	Open Service Innovation		
	$\beta$	$R^2$	$\Delta R^2$
Step 1			
Control Variables		0.204***	
Step 2			
Democratic Leadership style	-0.052		
Gender	-0.887**	0.307	0.103***
Step 3			
PLx Gender	1.061**	0.324	0.017**

Note: N= 422, \* $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\* $p < 0.001$

Independent Groups *t*-tests were performed to compare the mean totals of leadership styles (i.e. paternalistic, authentic and democratic) and open service innovation. A significant difference was found in open service innovation, paternalistic and democratic leadership style scores of male and female doctors. While no significant ( $p > .05$ ) difference was found in authentic leadership scores of male and female doctors. The results are presented in Table 7.

**Table 7**  
**Independent Groups t-Ratios Comparing Mean Leadership Styles Scores and Open Service Innovation Scores for Males and Females**

Variables	M	N	Mean Diff	SE Diff	t	p
Paternalistic Leadership Styles						
Male	3.52	194	-0.22	0.08	-2.77	<.01
Female	3.74	150				
Authentic Leadership Style						
Male	3.41	194	-0.11	0.07	-1.69	>.05
Female	3.52	150				
Democratic Leadership Styles						
Male	3.67	194	-0.18	0.06	-2.84	<.01
Female	3.86	150				
Open Service Innovation						
Male	4.62	194	-0.24	0.09	-2.50	<.01
Female	4.86	150				

## DISCUSSION

This research uniquely contributed to the body of knowledge by examining the key role of leaders on effective deployment of open service innovation and the moderating role of gender differences in leadership effectiveness for open service innovation in the Health Care Sector of Malaysia. Several researchers have identified the main factors and drivers necessary for managing innovation in the organizations (Bernik, Azis, Kartini, & Harsanto, 2015; Marheni, & Hendrati, 2015). This study has extended the theories of leadership and open service innovation in five distinctive ways. Firstly, this study proved that paternalistic leadership style is positively related to the successful deployment of open service innovation in the organizations as Kang *et al.* (2015) Kang *et al.* (2015) also reported in a recent study that leadership styles influence the innovative behaviors of employees. This relationship is explained using Vroom's (1964) expectancy theory. Open service innovation is only expected to establish if leaders are successful in providing the supportive and caring attitude to their employees. As paternalistic leadership style is associated with "fatherly" and caring attributes of leaders (Farh & Cheng, 2000) so this leadership style is best suited to maintain the morale and motivation of employees to change traditional organizational system to open innovation organization system (Lichtenthaler, 2011; Niu *et al.*, 2009). Furthermore, this study also confirmed the effectiveness of paternalistic leadership style in non-Western culture settings as recommended by (Pellegrini *et al.*, 2010).

Secondly, the empirically proved positive influence of authentic leadership style on open service innovation is also consistent with the findings of previous researchers that authentic leaders support and motivate the workforce for innovative behavior (Den Hartog & De Hoogh, 2009). Positive attributes of benevolence, behavioral stability and shared goal concept (Michie & Gooty, 2005) and knowledge-sharing (Èerne *et al.*, 2013) makes the authentic leadership style as one of the popular constructs that could play a role in establishing the open service innovation in the organizations. The study

findings are also consistent with Wright (2015) who stated authentic leadership style as one of the important ingredients for innovation. Thirdly, the proved positive stimulating role of democratic leadership style on open service innovation is according to attributes of democratic leaders. Chesbrough (2011) argued that value creation through open service innovation requires involvement, motivation and empowerment of the employees and subordinates in innovative activities. Democratic leaders provide a sense of participation, support and enhance the organizational learning and knowledge sharing (Chemers, 1984). This behavior ultimately leads to innovation in the organization (Saleem, us Saqib, & Zahra, 2015).

Fourth, this research found a significant interaction of gender with paternalistic and democratic leadership style for establishing the open service innovation, while no significant result was found for authentic leadership style. Furthermore, t-statistics showed the significant mean difference ( $<.01$ ) in the paternalistic and democratic leadership scores for males and females and mean values are slightly higher for females for these leadership styles while not significant for authentic leadership style. On the basis of regression results and mean values for these leadership styles (paternalistic and democratic), it can be suggested that women are more paternalistic and democratic in their leadership styles as compared to men. These findings are also consistent and confirmed the results of multiple studies that women are more democratic, supportive, and friendly in their leadership role and have relationship-oriented behavior (Eagly *et al.*, 2003; Eagly, Karau, Miner, & Johnson, 1994; Riggio, 2008). Su, Rounds, and Armstrong (2009) also found that women have a participative role and they prefer to work with other people as well.

One rationale for understanding these discounting gender differences in authentic leadership style is that leadership style's effectiveness is also contingent on organizational environment and different leadership roles in which males and females are positioned. In previous studies, it is stated that people react more negatively towards women than men who adopted directive leadership style. Lastly, this study provided magnificent support to the theories of leadership and open service innovation that are mainly developed and tested in Western culture (Aycan, 2006; Hofstede, 1986) (Abbas, Raja, Darr, & Bouckenooghe, 2014; Aycan, 2006; Chesbrough, 2011; Hofstede, 1986; Tsui, Nifadkar, & Ou, 2007)

## MANAGERIAL IMPLICATIONS

This research can benefit health sector organizations in several ways. Organizations can capitalize the knowledge and innovative ideas of their employees through hiring and promoting the individuals who possess leadership qualities such as paternalistic, authentic and democratic in nature. Involving the employees in the decision-making process can also benefit the organization for effective implementation of open service innovation in the organization. Developing the human development programs will be helpful for training the workforce for innovative behaviors (Islam, Hossain & Verpoest, 2015). The findings of this research further suggest that organizations should consider

both men and women for their innovation practices and women are more motivated for innovative activities. This study suggests that women have more potential for leadership positions as their relationship-oriented behavior can be more beneficial for successful deployment of open service innovation. Due to more democratic and participative role, females should encourage and must provide opportunities at leadership position to create an inductive knowledge-sharing environment for successful implementation of open service innovation practices.

### **LIMITATIONS AND FUTURE RESEARCH DIRECTIONS**

Despite of major theoretical contribution in organizational research, this study also has some limitations to be mentioned. As this study was conducted only in health care sector of Malaysia, so there is a need to conduct future research in other sectors for better generalizability of this research. This study is cross-sectional in nature, longitudinal research design may help further in explaining these causal relationships of leadership styles and open service innovation. Future researchers should also consider some mediating mechanism such as between leadership styles and open service innovation to explore the idea that how leaders develop a support system other than the traditional setup of the organization for open service innovation.

### **CONCLUSION**

This paper made an important advance theory and practice by extending the limited research on leadership role (paternalistic, authentic and democratic) and open service innovation. This research examined and empirically proved that gender differences significantly moderate between the relationships of paternalistic and democratic leadership styles with open service innovation while no differences in authentic leadership scores for male and female doctors. This study further concluded that females are more paternalistic and democratic in their leadership role as compared to men. These findings in Malaysian cultural context are very useful for further theory development and policy making. Malaysian managers can also get insights from the findings of this research to actively encourage women leadership in health care sector. Future research directions are also valuable contribution of this research.

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