

The Relationships Between Work Values Ethic, Design Leadership And Workplace Innovation: A Study Of Retailers In Malaysia

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ABSTRACT

This study examines the effect of design leadership behavior on the relationship between work values ethic and workplace innovation in Malaysia. Data were collected from 317 Malaysian retailer respondents. The instruments used to measure the three constructs were the Work Values Ethic (WVE) instrument, the Design Leadership Questionnaire (DLQ), and the Workplace Innovation Scale (WIS). Statistical Packages for Social Sciences (SPSS) and AMOS were used to analyze the data. We constructed the measurement models and structural models and found that both the design leadership (DL) and workplace innovation (WI) constructs were formative in nature. The results indicated that design leadership is a strong and significant mediator on the relationship between work values ethic and workplace innovation.

Keywords: Work values ethic, design leadership, workplace innovation, mediating effect.

INTRODUCTION

National culture influences organizational transformation, cultural distance and survival [1] and impacts on the way managers lead their subordinates thereby requiring managers to adjust their leadership style. For example, Australians and Thais have different cultural backgrounds which influence their leadership styles where Australian leaders tend to be participative, direct and willing to take more risk than their Thai counterparts [2] [3]. Yet, few studies explore the relationship between culture (values) at the individual level and link to leadership behavior and style, in particular, using leadership as a mediating factor on the relationship between work values ethic (WVE) and workplace innovation.

Apart from national culture, organizational culture also tends to influence employee creativity and workplace innovation [4]. However, Cameron's (2008) dimensions of organizational culture (Clan, Adhocracy, Market and Hierarchy) tend to have both positive and negative influence on employee creativity and innovation [5] [6].

Understanding people's work values ethic is believed to assist improving employee relationships and in turn increase commitment and productivity. However, the effect of WVE on leadership practices and workplace innovation are still unexplored, especially within the cross-national global study setting.

Design leadership is a new emerging concept of leadership. Design leadership can be defined simply as the " ... means both to design and to lead – to lead design and to lead business by design" (p. 2) [7] and is also described as a form of leadership that creates and sustains innovation design solutions [8]. While the quality of design leadership is believed to contribute to the success or failure of designed and innovative outcomes, the notion of design leadership is still highly ambiguous and leads to key questions such as: What is design leadership? Who are the design leaders? How can a leader lead with design? How can organizations help to develop more effective design leaders?

This study examines the effect of work values ethic on design leadership behavior and workplace innovation in Malaysia. To achieve this aim, two key research questions are proposed:

RQ1: To what extent does work values ethic influence design leadership and workplace innovation?

RQ2: What are the mediating and indirect effects of design leadership on the relationship between work values ethics and workplace innovation?

LITERATURE REVIEW

Work Values Ethic and Workplace Innovation

Understanding how people respond to organizational change is critical to the success of the change process, especially when managing innovation initiatives which are affected by employee age and diversity [9]. Much of these responses are related to work ethic. The meaning of work has changed over time and across cultures. The primary reasons why people work hard are: to have things, to not be left behind, to confirm self-worth and to provide for children [10].

The study of work ethic embraces Weber's (1930) Protestant Work Ethic (PWE) and contains elements of '...hard work, long hours with little or no time for leisure, pride in work and a job well done' [11]. Over the years, the meaning of work and work ethic has changed with some authors contending that there is no such thing as PWE and that work is a norm which has no moral significance attached to it [12]. To overcome the weaknesses of PWE, McMurray and Scott (2013) developed the Work Values Ethic (WVE) instrument that "can be used in areas of many different religions, atheism or agnosticism" (p. 656) [13]. Hence, WVE is considered a better measure of work ethic when dealing with a culturally diverse work force. The working population in Malaysia is known to be multi-racial and multi-religious in nature, comprising primarily of Malays, Chinese and Indians. Therefore, the WVE is a more appropriate measure to use to investigate work ethic in

Malaysia. The WVE measure comprises of five items anchored to a 5-point Likert-type scale. The five items are:

1. Most people who don't succeed in life are just plain lazy.
2. People who fail at a job have usually not tried hard enough.
3. A distaste for hard work usually reflects a weakness of character.
4. Any person who is able and willing to work hard has a good chance of succeeding.
5. If one works hard enough, one is likely to make a good life for oneself.

Kumar and Rose (2010) studied the relationship between Islamic work ethic (IWE) and innovation capabilities among the Malaysian civil servants [14]. The IWE measure comprises seventeen items with items quite similar to the WVE. For example, item no. 1 - "laziness is a vice" corresponds to item no. 1 of the WVE and item no. 13 - "Any person who works is more likely to get ahead in life" relates quite well with item no. 4 of the WVE. In addition, they found that work ethic related positively to innovation capabilities ($r=0.382$, $p<0.01$, $n=472$). They concluded that work ethic influences innovation capability in the public sector but the correlation coefficient was moderate and suggests that other factors such as human capital, internal and external structures might equally contribute to innovation capability [14].

Employee creativity tends to lead to creative ideas and eventually lead to workplace innovation [15] [16]. And employee creativity and workplace innovation are not distinctly separated concepts. Thus, positive work ethics would engender employee creativity and workplace innovation. Ogbeibu, et al. (2018a:334) define employee creativity as "an individual level phenomenon that mirrors the production of creative ideas, builds uniquely upon existing ideologies, and suggests novel approaches to create new solutions" [6]. In order to engender employee creativity and workplace innovation, support and commitment from top management is essential. That is where design leadership comes in to instill employee creativity and workplace innovation as design leadership is a form of leadership that creates and sustain solutions [8].

In line with Kumar and Rose (2010), we assert that work values ethic should be related to workplace innovation and the effect could be positive. To investigate this, our study examines work values ethic among retailers and private business enterprises in Malaysia.

Design Leadership and Workplace Innovation

Being innovative and creative is a source of competitive advantage [17]. The literature suggests that innovative organizations are successful organizations [18] [19] [20] [21] [22]. However, the most important factor to becoming an innovative and progressive organization is to have a favorable environment whereby the innovative culture can thrive [23].

McMurray and Dorai (2003) developed the Workplace Innovation Scale (WIS) and argued that a supportive environment and organizational climate, especially an informative rich environment is essential for embedding innovation. Similarly, other authors also noted that a major factor for inducing creativity and workplace innovation is the availability of information to the organizational members [18] [24] [25].

The climate for innovation in organizations supports a direct link between creativity climate and innovation performance [26] [27] [28]. However, there may be other variables, such as organizational support, commitment, job involvement and motivation, to the relationship [28].

Design leadership is a form of leadership that creates and sustains innovation [8] and influences organizational design processes [29]. The concept of design leadership is exhibited through the design leaders' core responsibilities, such as envisioning the future, manifesting strategic intent, directing design investment, and creating and nurturing an environment of innovation [8]. The most significant element of design leadership is the creating and nurturing of an innovation environment which ultimately leads to success in innovativeness [30]. Exploring the concept of design leadership further, we propose that there is a link between design leadership and workplace innovation. Therefore we hypothesize that:

H1: Design Leadership has a significant effect on Workplace Innovation.

Mediating Role of Design Leadership

Earlier we proposed that work values ethic has a significant effect on workplace innovation. However, Kumar and Rose (2010) found that the relationship is only of low strength ($r = 0.382$, $p < 0.01$, $n = 472$) [14]. This suggests that there are other variables which may have significant effects on workplace innovation. Our second hypothesis proposes that there is a significant link between design leadership and workplace innovation. Based on the relevant literature, this link appears to be significant.

H2: Design Leadership has significant effect on the four dimensions of Workplace Innovation.

Creative workplace behaviors are fostered by a combination of personal characteristics and workplace factors [31]. Design leadership, in fostering an innovative organizational environment tends to influence the relationship between work ethic at the personal level and workplace innovation. Therefore, we argue that design leadership has a mediating role on the direct relationship between work values ethic and workplace innovation. We propose to identify and test the significance of this mediating effect of design leadership on this direct relationship. However, before we can test the mediating effect of design leadership, we have to establish and prove that the relationship between work values ethic and design leadership is statistically significant. Thus, our third hypothesis is:

H3: Work Values Ethic has a significant effect on Design Leadership.

The Four Dimensions of Workplace Innovation

McMurray and Dorai (2003) tested and re-tested the original Workplace Innovation Scale (WIS) and identified the four factors that characterize workplace innovation [23]. The twenty-four items of the WIS were factored into four dimensions, each with 6 items. They were further labeled as Organizational Innovation (OI), Innovation Climate (IC), Individual Innovation (II), and Team Innovation (TI). Thus, workplace innovation is defined as a psychological construct and "is a process of idea generation created by an individual or a team within the workplace and is fostered through an innovation climate" (p. 8) [23]. With this understanding, we further proposed to identify and test the mediating effect of design leadership on the relationship between work

values ethic and the four dimensions of workplace innovation which are Organizational Innovation (OI), Innovation Climate (IC), Individual Innovation (II), and Team Innovation (TI). Therefore, we proposed our fourth hypothesis below:

H4: Design Leadership mediates the relationship between Work Values Ethics and the four dimensions of Workplace Innovation [namely, Organizational Innovation (OI), Innovation Climate (IC), Individual Innovation (II), and Team Innovation (TI)].

RESEARCH METHODOLOGY

Measuring Instrument

After gaining ethics approval, a hard copy survey was implemented in order to address the study's four hypotheses. The questionnaire was comprised of three instruments plus demographic items. The instruments were comprised of the eighteen item Design Leadership Questionnaire (DLQ) developed by Muenjohn et al. (2012) [29]; the five item Work Values Ethic (WVE) instrument developed by McMurray and Scott (2003) [13]; and to measure the innovation process, the twenty-four items Workplace Innovation Scale (WIS) developed by McMurray and Dorai (2003) was utilized [23]. All instruments were implemented in previous studies which were conducted in various cultural and industry contexts and demonstrated Cronbach Alpha reliability scores over $\alpha=0.7$.

Population Sample

Data was collected from business owners or managers in the retail industry in order to reflect the respondent's perceptions of the three key concepts. They were collected using the questionnaire (measuring instrument) purposely designed for the survey.

Three teams of four interviewers went to the main shopping malls and complexes in three main cities of Malaysia: Kuala Lumpur, Penang, and Ipoh concurrently. Each team was given charged of one city. The printed questionnaires were distributed to all retail outlets of the shopping malls visited using the "drop-and-pick" technique. The survey of the three cities took two weeks to complete. A total of 317 valid responses were received.

Data Analysis

The analysis proceeded through multiple steps in order to adequately address the four hypotheses. We used two analytical software packages to analyze the collected data; SPSS version 20 and AMOS (a covariance-based SEM analytical tool).

Hypotheses

H1: Design Leadership has a significant effect on Workplace Innovation.

H2: Design Leadership has significant effect on the four dimensions of Workplace Innovation.

H3: Work Values Ethic has a significant effect on Design Leadership.

H4: Design Leadership mediates the relationship between Work Values Ethics and the four dimensions of Workplace Innovation [Organizational Innovation (OI), Innovation Climate (IC), Individual Innovation (II), and Team Innovation (TI)].

RESULTS

Respondents

Descriptive statistics identified the highest percentage (40%) of the respondents were supervisors. This was followed by staff members at 36.3% and middle managers at 12.9%. In terms of age, the majority of respondents were young being aged less than 25 years old and constituted almost 40% of the total sample. The remaining respondents were evenly spread between 26 - 30 years and 31 - 40 years which constituted 25.2% each of total population. Female respondents (58.7%) outnumbered the males (41.3%). At 73.8%, the majority of the respondents were singles, with 22.7% respondents being married. The highest education level of the respondents indicated that almost 83% of total population possessed a certificate or diploma and secondary education. Only 14.5% possessed a Bachelor degree and 1.3% held a Masters Degree.

Business Background

The majority of businesses (62.7%) employed less than 20 employees. Only 8.2% were classified as large organizations employing more than 200 employees. For sales turnover, approximately 56% of businesses earned between \$50,001 and \$1 million. Approximately 21.1% had earnings over \$1 million. Of these 56.2% were local companies with the rest being international companies. Finally, 34.7% of the companies were a subsidiary of an international company and 31.9% were from the headquarters of an international company.

Reliability and Validity

A series of reliability checks were conducted to provide evidence that the three constructs; Design Leadership, Workplace Innovation and Work Values Ethic and all of their dimensions, produced the data for which they were designed. The results are presented in Table 1 below. All Alpha values were greater than 0.70 which indicated that the scales were highly reliable [32].

Table 1. Reliability

Measures	α	No. of items
Design Leadership	0.93	18
Envisioning the Future	0.76	5
Directing Design Investment	0.74	4
Manifesting Strategic Intent	0.72	4
Creating and Nurturing an Innovative Environment	0.77	5
	0.92	21
Workplace Innovation	0.83	5
Organisation Innovation	0.81	6
Individual Innovation	0.77	5
Team Innovation	0.83	5
Workplace Innovation Climate	0.75	5
Work Value Ethic		

CFA Results for Validity Testing

In addition to the scales reliability as indicated by Cronbach's alpha scores, a confirmatory factor analysis (CFA) was used to focus solely on how, and to what extent, the indicators were linked to their underlying variables. The CFA results confirm the measurement validity of the three scales with the results reported in Table 2 below.

Table 2. CFA results testing scale validity

Scales (number of items)	CFI	χ^2/df	GFI
	>.9**	<5**	>0.9**
Design Leadership (18)*	.931	2.549	.900
Workplace Innovation (21)*	.931	2.238	.908
* four-factors CFA; ** acceptable level (Holmes-Smith et al 2006) [33]			

CFA was utilized to examine the convergent validity of the constructs. The fit indices for Design Leadership and Workplace Innovation are presented in Table 2 indicated an acceptable fit and therefore demonstrate convergent validity. For discriminant validity, average variance extracted (AVE) for each dimension was observed. The results are displayed in the Table 3.

Table 3. Discriminant Validity

Dimensions of Design Leadership	AVE	Dimensions of Workplace Innovation	AVE
Envisioning the future	0.40	Organization Innovation	0.47
Directing design investment	0.42	Individual Innovation	0.42
Manifesting strategic intent	0.42	Team Innovation	0.50
Creating and Nurturing an innovative environment	0.41	Workplace innovation climate	0.50

To demonstrate discriminant validity, the ideal value for AVE for each dimension should be above 0.5 as suggested by Fornell and Larcker (1981) [33]. As indicated in Table 3 above, all values of AVE were above 0.4, and a few were above 0.5. Thus they are marginally accepted [34].

Hypothesis Testing

Design Leadership on Workplace Innovation

To test H1, a standard multiple regression was performed to analyze the significant effect of design leadership on workplace innovation as dependent variable.

H1: Design Leadership has a significant effect on Workplace Innovation.

Table 4. Regression Results of Design Leadership on Workplace Innovation

Variable	B	SEB	β
Design Leadership	0.755	0.036	0.76***

Notes: $R^2 = 0.577$; Adjusted $R^2 = 0.576$ (N=317, $p = 0.000$)

By using the enter method, a significant model emerged ($F_{1,315} = 430.37$, $p < .001$). Altogether, design leadership predicted about 57.6% (adjusted R^2) of the variability in workplace innovation. Thus it can be concluded that H1 is fully supported which indicated that design leadership has a significant effect on workplace innovation.

Design Leadership on the Four Dimensions of Workplace Innovation

To test H2, a standard multiple regression was performed to test the effect of leadership on workplace innovation.

H2: Design Leadership has significant effect on the four dimensions of Workplace Innovation

Table 5. Regression Results of Design Leadership on the Four Dimensions of Workplace Innovation

	H2a		H2b		H2c		H2d	
	Organization Innovation		Individual Innovation		Team Innovation		Workplace Innovation Climate	
	B	β	B	β	B	β	B	β
Design Leadership	0.824	0.696***	0.312	0.746***	0.557	0.46***	0.815	0.616***
R^2	0.484		0.557		0.212		0.380	
Adjusted R^2	0.482		0.555		0.209		0.378	
$F_{1, 315}$	295.32		395.492		84.636		192.975	
Model Significant	0.000		0.000		0.000		0.000	

Note: * $p < .05$, ** $p < .01$, * $p < .001$**

By using the enter method, significant models emerged for all four models which provided support for H2. The results indicated that design leadership has a significant effect on organization innovation. The dimensions of design leadership predicted 48.2% (adjusted R^2) of the variability in organization innovation.

In addition the results indicated that design leadership has a significant effect on individual innovation. The dimensions of design leadership predicted 56% (adjusted R^2) of the variability in individual innovation.

Design leadership also had a significant effect on team innovation. The dimensions of design leadership predicted 21% (adjusted R^2) of the variability in team innovation.

Finally, the results indicated that design leadership has a significant effect on workplace innovation climate. The dimensions of design leadership predicted 38% (adjusted R^2) of the variability in workplace innovation climate.

Work Values Ethic on Design Leadership

To test H3, a standard multiple regression was performed to test the effect of work values ethic on design leadership.

H3: *Work Values Ethic has a significant effect on Design leadership.*

Table 6. Regression Results of Work Values Ethic on Design Leadership

Variable	B	SEB	β
Work Values Ethic	0.298	0.045	0.347***

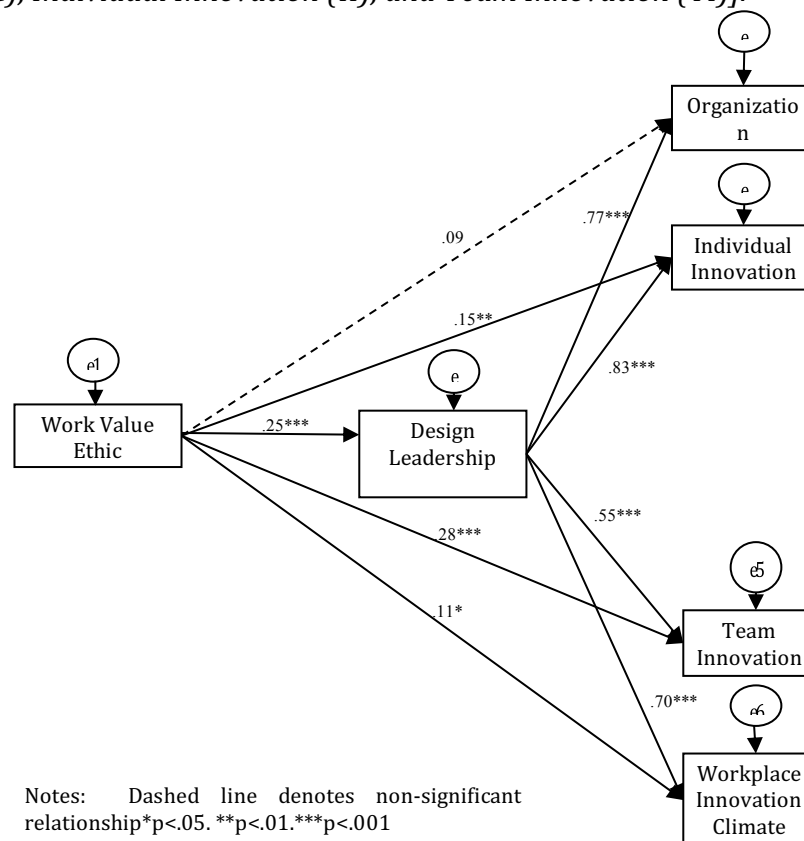
Notes: $R^2 = 0.121$; Adjusted $R^2 = 0.118$ (N=317, $p = 0.000$)

By using the enter method, a significant model emerged ($F_{1,315} = 43.235$, $p < .001$). Altogether, work values ethic predicted only about 12% (adjusted R^2) of the variability in design leadership. Thus it can be concluded that H3 is fully supported which indicated that work values ethic has a significant effect on design leadership.

Work Values Ethic and Workplace Innovation

A path model was developed to illustrate the relationship between Work Values Ethic and the four Workplace Innovation dimensions as shown in Figure 2 below.

H4: *Design Leadership mediates the relationship between Work Values Ethics and the four dimensions of Workplace Innovation [namely, Organizational Innovation (OI), Innovation Climate (IC), Individual Innovation (II), and Team Innovation (TI)].*



The goodness-of-fit statistics of the model were as follows: $\chi^2/df = 1.898$, RMSEA = .053, GFI = .836 CFI = .901 and AGFI = .810. These statistics indicated that the model provided an acceptable fit with the study's data. The results demonstrated that design leadership only acts as a partial mediator in the relationship between work values ethic and the three dimensions of workplace innovation; in particular individual innovation, team innovation and workplace innovation climate.

As indicated, the paths between work values ethic to design leadership as the mediator is significant ($\beta = 0.25$, $p < 0.001$). The direct paths between work values ethic and the three dimensions of workplace innovation were significant with organization individual innovation ($\beta = 0.15$, $p < 0.01$), team innovation ($\beta = 0.28$, $p < 0.001$) and workplace innovation climate ($\beta = 0.11$, $p < 0.05$). On the other hand, the paths between design leadership and these three dimensions of workplace innovation were all significant with individual innovation ($\beta = 0.84$, $p < 0.001$), team innovation ($\beta = 0.85$, $p < 0.001$) and workplace innovation climate ($\beta = 0.82$, $p < 0.001$). The results conclude that design leadership only has a full mediation effect in the relationship between work values ethic and so the organization innovation dimension of the workplace innovation construct thus H4 is partially supported.

DISCUSSIONS

We used the structural equation modeling (SEM) analytical tool known as Analysis of Moment Structures (AMOS) to construct and evaluate our theoretical structural models. The results of the hypothesis testing are summarized in Table 7 below:

Table 7. Hypothesis Testing Results

	Hypothesis	Decision
H1	Design leadership has a significant effect on Workplace innovation	Supported
H2	Design leadership has significant effect on the four dimensions of Workplace innovation	Supported
H3	Work values ethic has a significant effect in Design leadership	Supported
H4	Design leadership mediates the relationship between Work values ethics and the four dimensions of Workplace innovation [Organizational Innovation (OI), Innovation Climate (IC), Individual Innovation (II), and Team Innovation (TI)]	Partially Supported

The definition of design leadership is based on the notion that design leadership supports and sustains innovation [8]. It is therefore imperative that design leadership with an eye for envisioning the future also support the creation of a creativity climate within the organization. It follows that design leadership will have a significant effect on workplace innovation. Our regression analysis results show that design leadership has a significant effect on workplace innovation ($R = 0.755$, $R^2 = 0.577$, $p = 0.000$). The effect is positive and indicates that the higher the design leadership intensity, the higher the level of workplace innovation. In addition, the correlation between design leadership and workplace innovation is strong and significant.

The four elements of design leadership are: design leaders setting the vision on how designs are to be used, instilling a sense of concern and pride for design standards, directing design funding and creating and nurturing an environment of innovation [29]. Therefore, the design leadership

concept will inevitably be related to the workplace innovation concept. Needless to say, the most important element of design leadership having a significant impact on workplace innovation would be the creating and nurturing of a creativity climate in order for innovation to flourish. When we performed regression analysis on the design leadership scores and the four dimensions of workplace innovation, namely, organizational innovation, individual innovation, team innovation, and innovation climate, all four models gave significant results confirming that design leadership has significant effect on the four dimensions of workplace innovation.

The regression analysis also yielded results relating to betas (β). The betas for the four dimensions of workplace innovation are: Organizational Innovation ($\beta=0.696$, $p=0.000$), Individual Innovation ($\beta=0.746$, $p=0.000$), Team Innovation ($\beta=0.46$, $p=0.000$), Innovation Climate ($\beta=0.616$, $p=0.000$). All the betas are significant and the highest beta is for Individual Innovation ($\beta=0.746$) indicating that of the four dimensions of workplace innovation, design leadership has the most effect on individual innovation. This is followed by organization innovation ($\beta=0.696$) and innovation culture ($\beta=0.616$). Design leadership has the least effect on team innovation ($\beta=0.46$). Our research design did not allow us to explain the level of effect intensity of design leadership on the four dimensions of workplace innovation. However, the workplace innovation phenomenon is defined as “a process of idea generation created by an individual, or a team, within the workplace and is fostered through an innovation climate” (p. 8) [23]. Therefore, when design leadership is found to have the most effect on individual innovation (the initial process of workplace innovation), it contributes an important insight into the leadership and innovation literature. That is, adopting a design leadership approach within the organizational context is a desired approach to initiate the process of creating, fostering, and improving innovations in the workplace where group norms are associated with team creativity [36] and lead to workplace innovation including efficiencies in resources exchange and potentially internationalization [35].

We introduce the work values ethic construct into our theoretical research model in order to understand the mediating effect of design leadership on the relationship between work ethic at the personal level and workplace innovation. Earlier, Kumar and Rose (2010) found the relationship between work ethic and innovation capability to be positive and significant but of moderate strength ($r=0.382$, $p=0.01$, $n=472$) [14]. Our regression analysis results show that work values ethic has a significant effect on design leadership ($R=0.298$, $R^2=0.121$, $p=0.000$). The effect is positive and indicates that higher level of work values ethic will indeed lead to high level of design leadership. However, the strength of the relationship between work values ethic and design leadership is weak but significant. This significant relationship allows us to examine the mediator role of design leadership on the relationship between work values ethic and workplace innovation.

We developed a path model to illustrate and examine the mediating effect of design leadership on the relationship between work values ethic and the four dimensions of workplace innovation. We hypothesized that design leadership acts as a mediator between work values ethic and the four dimensions of workplace innovation. But our results demonstrated that design leadership acts out its mediator role only to three of the four dimensions of workplace innovation, namely, individual innovation, team innovation, and innovation climate. These mediating effects are only partial effects. This means that design leadership does not have full mediation on the relationships between work values ethic and individual innovation, team innovation and innovation climate.

Collaborating with Kumar and Rose's (2010) findings, work values ethic appears to be quite a weak factor predicting workplace innovation. This tends to suggest that the direct effects of design leadership on workplace innovation overshadow the effects of work values ethics [14]. Future research on workplace innovation should give more emphasis to design leadership.

Supporting our proposition above is the finding that design leadership does not appear to be a mediator between work values ethic and organizational innovation. The path between work values ethic to design leadership is significant ($\beta=0.25$, $p<0.001$). The path between design leadership and organizational innovation is also significant ($\beta=0.77$, $p<0.001$). But the direct path between work values ethic and organizational innovation is not significant. Therefore, it can be concluded that design leadership is not a mediator on the relationship between work values ethic and organizational innovation. We have earlier defined workplace innovation as a process and organizational innovation is the final product. If the direct effect of work values ethic on organizational innovation is not significant, then work values ethic is not a significant factor of organizational innovation. Therefore, further investigative efforts examining the relationship between work values ethic and workplace innovation are futile and bear questionable rewards.

CONCLUSION

Our study examined the relationships between the three constructs of work values ethic, design leadership, and workplace innovation. Through the two research questions and five hypotheses we determined and established the mediating effect of design leadership on the relationship between work values ethic and workplace innovation. Furthermore, the mediating effect of design leadership on the relationship between work values ethic and workplace innovation was uncovered.

This study constructed the measurement and structural models involving the independent variable (work values ethic), the mediator (design leadership), and the dependent variable (workplace innovation). The models have construct validity thus suggesting that the theories underpinning the models are sound. As far as the mediator is concerned, analysis demonstrated that design leadership has a significant partial mediating effect on the relationship between work values ethic and workplace innovation. The mediating effect or indirect effect is strong ($f^2=0.7966$ which is more than 0.35). In addition, we determined that the indirect effect amounted to 0.127.

The limitations of this study are that it was conducted in Malaysia and may not be representative of all countries as it is acknowledged that culture may influence a manager's leadership. Also, the study was conducted to reflect the perception of one sample source. Future studies should consider replicating this study in different countries and with multiple sample sources.

References

- [1] Peng, G. Z., & Beamish, P. W. (2014). The effect of host country long term orientation on subsidiary ownership and survival. *Asia Pacific Journal of Management*, 31(2), 423-453.
- [2] Hofstede, G. (1984). *Culture's consequences: International differences in work-related values*, Abridged edition, Beverly Hill, Sage Publications.
- [3] Muenjohn, N., (2012). *Organizational Leadership: Concepts, Cases and Research*. Cengage Learning Australia, Australia ISBN:9780170188173.

- [4] Ogbeibu, S., Senadjki, A., & Tan, L. P. (2018b). An organizational culture and trustworthiness multidimensional model to engender employee creativity. *American Journal of Business*, Vol. 33 Issue 4, pp. 179-202.
<https://doi.org/10.1108/AJB-12-2017-0043>
- [5] Cameron, K. (2008). A process for changing organizational culture. In C. G. Thomas (Ed.). *Handbook of Organizational Development*, pp. 429-445. Thousand Oaks, CA: Sage Publishing.
- [6] Ogbeibu, S., Senadjki, A., & Gaskin, J. (2018a). The moderating effect of benevolence on the impact of organizational culture on employee creativity. *Journal of Business Research*, 90(2018), 334-346.
<http://doi.org/10.1016/j.jbusres.2018.05.032>.
- [7] Design Management Institute, (2006). The 10th European International Design Management Conference, 29-31 March, 2006, Amsterdam, The Netherlands.
- [8] Turner, R., & Topalian, A. (2002). Core responsibilities of design leaders in commercially demanding environments, 2002, Inaugural presentation at the Design Leadership Forum.
- [9] Park, J., & Kim, S. (2015). The differentiating effects of workforce aging on exploitative and exploratory innovation: The moderating role of workforce diversity. *Asia Pacific Journal of Management*, 32(2), 481-503.
- [10] Porter, G. (2004). Work, work ethic, work excess. *Journal of Organizational Change Management*, Vol. 17, Issue 5, pp. 424 – 439.
- [11] Cherrington, D.J. (1980). *The Work Ethic: Working Values and Values That Work*, AMACOM, New York, NY.
- [12] Kelvin, P., & Jarrett, J. (1984). *The social psychological effects of unemployment*. London: Academic Press.
- [13] McMurray, A., & Scott, D. (2013). Work values ethic, GNP per capita and country of birth relationships. *Journal of Business Ethics*, 116:655-666.
- [14] Kumar, N. & Rose, R. C. (2010). Examining the link between Islamic work ethic and innovation capability. *Journal of Management Development*, Vol. 29 Issue 1, pp. 79-93.
- [15] Bai, Y., Lin, L. & Li, P. P. (2016). How to enable employee creativity in a team context: A cross-level mediating process of transformational leadership. *Journal of Business Research*, 69(6), 3240-3250.
<http://dx.doi.org/10.1016/j.jbusres.2016.02.025>.
- [17] Lin, C. Y., & Liu, F., (2012). A cross-level analysis of organizational creativity climate and perceived innovation. *European Journal of Innovation Management*, Vol. 15 Iss1 pp. 55-76.
- [18] Amabile, T. M., Conti, R., Coon, H., Lazenby, J. & Herron, M. (1996). 27].Assessing the work environment for creativity. *Academy of Management Journal*, Vol. 39 No. 5, pp. 1154-84.
- [19] Lin, Y. Y., & Chen, Y. G. (2007). Does innovation leads to performance? An empirical study of SMEs in Taiwan. *Managing Research News*, Vol. 30 No. 2, pp. 115-32.
- [20] Martin, E. C. & Terblanche, F. (2003). Building organizational culture that stimulated creativity and innovation, *European Journal of Innovation Management*, Vol. 6 No. 1, pp. 64-74.
- [21] Shalley, C. E. (1995). Effects of coactions, expected evaluation, and goal setting on creativity and productivity. *Academy of Management Journal*, Vol. 38 No. 2, pp. 483-503.
- [22] Zhou, J. & Shalley, C. E. (2008). *Handbook of Organizational Creativity*, Taylor & Francis Group, New York, NY.

- [23] McMurray, A., & Dorai, R. (2003). Workplace Innovation Scale: A new method for measuring innovation in the workplace. 5th International Conference Organizational Learning and Knowledge, 30 May – 2nd June 2003, Lancaster University.
- [24] Van de Ven, A. H. (1986). Central problems in the management of innovation. *Management Science*, Vol. 32, pp. 509-607.
- [25] Huber, G. P. (1991). Organizational learning: The contributing processes and literatures. *Organizational Science*, 2, 81-115.
- [26] Abbey, A. & Dickson, J. W. (1983). R&D work climate and innovation in semiconductors. *Academy of Management Journal*, Vol. 26 No. 2, pp. 362-8.
- [27] Baer, M. & Frese, M. (2003). Innovation is not enough: Climate for initiative and psychological safety, process innovations, and firm performance. *Journal of Organizational Behavior*, Vol. 24 No. 3, pp. 45-66.
- [28] Patterson, M. G., Warr, P. & West, M. A. (2004). Organizational climate and company productivity: The role of employee affect and employee level. *Journal of Occupational & Organizational Psychology*, Vol. 77 No. 2, pp. 193-216.
- [29] Muenjohn, N., Chhetri, P., Hoare, L., As-Saber, S., Suzumura, Y., & Ishikawa, J. (2012). Design leadership: A conceptual framework of leadership, design and team performance. In N. Muenjohn (ed.), *Organizational leadership: Concepts, cases and research*, Cengage Learning Australia, Melbourne, pp. 1-5.
- [30] Hult, G. T. M., Ketchen, D. J. & Salter, S. F. (2004). Information processing, knowledge development, and strategic supply chain performance. *Academy of Management Journal*, Vol. 47 No. 2, pp. 241-253.
- [31] West, M. A. & Richards, T. (1999). *Innovation Academic*: San Diego, CA.
- [32] Nunnally, J. C. (1978). *Psychometric Theory*, 2nd Edition. McGraw-Hill: New York.
- [33] Holmes-Smith, P., Coote, L., & Cunningham, E. (2006). Structural equation modeling: From the fundamentals to advanced topics. *SREAMS, Melbourne*.
- [34] Fornell, C. & Larcker, D.F., (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research* 18 (1), 39-50.
- [35] Fraering, M. & Minor, M.S. (2006). Sense of community: An exploratory study of US consumers of financial services. *International Journal of Bank Marketing* 24(5):284-306
- [36] Kim, M., & Shin, Y. (2015). Collective efficacy as a mediator between cooperative group norms and group positive affect and team creativity. *Asia Pacific Journal of Management*, 1-24.
- [37] Chen, Y. Y., & Jaw, Y. L. (2014). How do business groups' small world networks effect diversification, innovation, and internationalization? *Asia Pacific Journal of Management*, 31(4), 1019-1044.