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Instrumentation of Leadership Style, Knowledge Sharing Behaviour, Intrapreneurial Orientation and Academic Leader's Performance

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ABSTRACT

The major purpose of this study is to re-test the instruments for leadership style, knowledge sharing behaviour, intrapreneurial orientation and academic leader's performance due to the differences in research settings and variables structures where these instruments were initially used. As a result, a construct validity test through the factor analysis and reliability test were conducted on 36 respondents who are believed to possess the same characteristics with the main population. The result validates all the instruments for leadership style, knowledge sharing behaviour, intrapreneurship orientation and academic leaders' performance. The results also indicate that all the instruments for the variables under investigation are reliable.

Keywords: Instrumentation, leadership style, knowledge sharing behaviour, intrapreneurial orientation and academic leaders' performance.

1.0 INTRODUCTION

Empirical studies on the factors such as leadership style, knowledge sharing behaviour, intrapreneurial orientation and academic leader's performance have provided different dimensions, structures, instruments including differences in validity and reliability results. For instance, the studies by Bass (1985) and Avolio & Bass (2004) presented three dimensional variables of leadership style which includes transformational, transactional and laissez-faire. Many other authors in this area have also structured leadership style using only two dimensional structures consisting of transformational and transactional leadership styles excluding laissez-faire or passive-avoidant because it is judged as a 'do nothing' style of leadership (Gartner & Stough, 2002), while Avolio & Bass (2004) consider this style as 'no leadership' at all. As for the intrapreneurial orientation, some authors have provided three dimensional structures which

consist of risk taking, proactiveness and innovativeness (Covin & Slevin, 1989, 1991; Davis, 2007; Kreiser & Davis, 2010), while others such as Lumpkin & Dess (1996) and Rauch, Wiklund, Lumpkin & Frese (2009) provided five-dimensional structures which also include competitive aggressiveness and autonomy. Since the dimensions of competitive aggressiveness and autonomy are found to be closely interrelated with proactiveness and innovativeness respectively, majority of studies in this field adopted a three dimensional of intrapreneurial orientation (Davis, 2007; Covin, Green & Slevin, 2006). Meanwhile, from the perspective of knowledge sharing literature, the two dimensions of tacit and explicit knowledge are often discussed by scholars such as Nonaka & Takeuchi (1995); Alevi & Leidner (2001) and Hislop (2005). Then author such as Tucker (1993) and Fox, Burns & Adams (2005) have discussed five dimensional structure of academic leader's performance. These scenarios above provided a fertile ground for this study to be conducted.

Hence, two major reasons for re-testing these instruments for leadership style, knowledge sharing behaviour, intrapreneurial orientation and academic leader's performance in this study are: Firstly, differences in environment and research-setting where the instruments were used and tested (King et al., 2012; Okpara & Wynn, 2007). Secondly, differences in the structure of the variables. We are concerned that this could affect the validity and reliability of these instruments due to the fact that we adapted them from the previous studies (Avolio & Bass, 2004; Yang, 2006; Bass et al., 2003; Zhang et al., 2008; Lee, 2001; Bulut, 2008 and Fox et al., 2005). Although, these instruments were adapted from the previous studies (Avolio & Bass, 2004), Yang (2006), Bass et al., (2003), Zhang et al., (2008), Lee (2001), Bulut (2008) and Fox et al., (2005), and may not need to be re-tested as a rule of thumb in the social science research would suggest, however, some changes were made to accommodate and suit the present study and these changes could affect the validity and reliability of the instruments due to the reason highlighted above. Besides, Fox et al., (2005) only developed and proposed the instruments for academic programme chairperson (also closely related to academic leader's performance construct of our main study) and they specifically suggested that further study in this area should empirically test these instruments in order to determine the validity and the reliability. Owing to these reasons, there is a crucial need for this study to re-test these instruments in order to ensure that they provide the desired result for the validity and reliability in the main study that would be conducted after this pilot study. Hence, the major purpose of this study is to re-test the instrumentations due to the differences in research settings and variables structures where these instruments were initially used.

2.0 RESEARCH DESIGN

The study is a pilot study and purely cross-sectional with a quantitative survey approach. The population of the study covers all the academic lecturers in Universiti Utara Malaysia (UUM) with administrative post such as deans, programme chairpersons, heads of departments, directors of academic centres etc. Therefore, the unit of the analysis for this study is academician with administrative post. A total of 42 participants were selected using the simple random sampling technique in order to test the instruments under investigation. After being screened, only 36 samples were deemed usable. The variables were measured through the following means:

The variable Leadership style was measured using the first assessment tool of two dimensions (transformational and transactional leadership styles) from the Multifactor Leadership Questionnaire (MLQ) by Bass & Avolio (1995). Later, instruments for transformational and transactional leadership styles were further used to validate the instruments by Yang (2006), Avolio & Bass (2004) and Bass et al. (2003) which they claimed to be reliable. This study opts for a 2 dimensional variables of leadership styles consisting of transformational and transactional leadership styles with 20 items for transformational leadership style while 12 instruments for transactional leadership style giving a total of 32 instruments.

The instruments for Knowledge sharing behaviour were developed based on the studies by Zhang et al. (2008) and Lee (2001) on the knowledge sharing behaviour among part-time MBA students in China and knowledge sharing behaviour of the public sector employees in South Korea respectively. The study by Zhang et al. (2008) reported a reliability coefficient Cronbach's alpha of 0.93 while Lee (2001) reported a Cronbach's alpha coefficient score of 0.901 and 0.758 for the instruments of the two dimensions of knowledge sharing consisting of explicit and tacit knowledge respectively.

Subsequently, the instruments for Intrapreneurial orientation were developed using the instruments initially used by Stull (2005) and Bulut (2008). The model for intrapreneurial orientation indicates three dimensions (risk taking, proactiveness and innovativeness) with 15 instruments, five items for each dimension. These instruments were originally developed by Stull (2005) and the study reported a Cronbach's alpha of 0.76. A further study by Bulut (2008) on these same set of instruments reported a reliability Cronbach's alpha of 0.89 for all the 15 items. A clear examination of the Cronbach's alpha coefficient for the two studies showed some differences in the Cronbach's alpha coefficient scores. However, towing this line, this study measures intrapreneurial orientation using

15 instruments of 3 dimensional variables as suggested by Stull (2005) and Bulut (2008).

For the Academic leader's performance, the instruments intend to evaluate the performance of Malaysian public universities academic leaders. The instruments were adapted from the original work by Fox et al. (2005) who developed and pilot-tested the instruments using 38 items of five dimensional sub-variables consisting of managerial, interpersonal, communication, academic, and political factors to evaluate academic programme chairpersons' performance. They reported an overall internal consistency Cronbach's coefficient alpha of 0.99 with respectively 0.98 for managerial, 0.95 for interpersonal, 0.88 for communication, 0.77 for academic, and 0.85 for political factor. However, these instruments will be used in the context of our study to measure academic leader's performance which is closely in line with the original measurement by Fox et al. (2005).

3.0 DATA ANALYSIS

3.1 Descriptive Analysis Result

A descriptive statistical analysis was conducted to examine the characteristics of the respondents. The result of the descriptive analysis in Table 1 shows that for the age factor, 10 of the respondents (27.8%) are under 40 years, 21 (58.3%) are between 40 to less than 50 years, and 5 (13.9%) are between 50 to 60 years bracket. For the gender, the result indicates 23 (63.9%) for the male and 13 (36.1%) for the female. In addition, for the nationality, the result shows that all (100%) of the respondents are Malaysians. Accordingly, the result shows that 35 (97.2%) of the respondents have doctorate degrees while only one (2.8%) is a masters degree holder. It further shows that 1 (2.8%) of the respondents is currently holding a position of Assistant Vice Chancellor, 5 (13.9%) are Deans, 7 (19.4%) are Department Heads, 5 (13.9%) are Directors of Academic Centres, 12 (33.3%) are Programme Chairpersons, 1 (2.8%) are Deputy Deans, 4 (11.1%) are Deputy Directors, and 1 (2.8%) of the respondents are holding other administrative posts. The result equally shows that majority of the respondents 25 (69.42%) is currently holding these various positions for less than 2 years, 7 (19.4%), 2 (5.6%), 1 (2.8%) and 1 (2.8%) are holding these position for more than 2 years but less than 3 years, more than 3 years but less than 4 years, 4 to 5 years while most of them are holding the positions for 6 years and above respectively. The result also shows that 26 (72.2%) of the respondents come from the faculty of business, management and accountancy, while 1 (2.8%) from economic, finance and actuary, another 1 (2.8%) from arts, social science and

humanity, 3 (8.3%) from computer science and ICT, 3 (8.3%) governance, law and public administration, 1 (2.8%) politics, security and international affairs, while 1 (2.8%) operate in faculty of education and human capital development.

Table 1: Descriptive Analysis of the Demographic

	N	**Percentage**
Age		
Less than 40	10	27.8
40 < 50	21	58.3
50>60	5	13.9
Total	36	100.0
Gender		
Male	23	63.9
Female	13	36.1
Total	36	100.0
Nationality		
Malaysian	36	100.0
Total	36	100.0
Qualification		
Doctorate	35	97.2
Masters	1	2.8
Total	36	100.0
Current Admin Post		
Assistant VC	1	2.8
Dean	5	13.9
Head of Department	7	19.4
Director of Centre	5	13.9
Programme Chairperson	12	33.3
Deputy Dean	1	2.8
Deputy Director	4	11.1
Deputy Programme Chairperson	1	2.8
Total	36	100
Year in Current Post		
1 < 2	25	69.4
2 < 3	7	19.4
3 < 4	2	5.6
4 < 5	1	2.8
6 years and above	1	2.8
Total	36	100.0
Faculty/Department		
Business, Management, Accountancy	26	72.2

Economics, Finance, Actuary	1	2.8
Arts, Social Science, Humanity	1	2.8
Computer, Science, ICT	3	8.3
Government, Law, Public Administration	3	8.3
Politics, Security, International Affair	1	2.8
Education, Human Capital Development	1	2.8
Total	36	100.0

3.2 Factor Analysis Result

To conduct a factor analysis for the instruments under investigation; leadership style, knowledge sharing behaviour, intrapreneurial orientation and academic performance of the academic leaders, a component factor analysis with a varimax rotation was employed using SPSS version 19. The screening process found that data did not violate the assumptions of linearity and normality (Tabachnick & Fidell, 2007). A guideline by Hair et al. (2010) indicates that a minimum of five observations per variable are needed (5:1 ratio) and with 36 samples for the 5 variables mentioned above the minimum requirement for factor analysis was fulfilled. Several established criteria of factorability were used in this study in order for the analysis to be appropriate. Firstly, a factor loading of 0.4 suggested by Pallant (2007) was required for any item to be included in the factor. Hence, any item with less than 0.4 is considered not acceptable and excluded from the factor. Secondly, Kasier-Meyer-Olkin measure of sampling adequacy should be more than 0.6 while eigenvalue greater than 1 is applicable to all instruments in this study. Thirdly, Bartlett's test of sphericity should be significant at $p < 0.05$ or smaller (Pallant, 2007).

For Leadership style items, a total of 32 items with two dimensions of transformational and transactional each with 20 and 12 items respectively were subjected to factor analysis using SPSS version 19 in order to determine the validity of the instruments. The result displayed in Table 2, showed that all the items subjected to factor analysis indicate acceptable factor loadings more than 0.4 as required. After several steps however, 5 items coded TRF10, TRF12, TRF13, TSAC2 and TSAC8 were dropped as a result of the problem of cross loading while 3 items coded TRF3, TRF9 and TSAC5 failed to meet a minimum criteria of having a factor loading of 0.4 were also excluded from the factor. The loaded items showed a KMO of .668 with eigenvalue greater than 1 and accounted for 55.94% of the variance explained with transformational factor having 36.25% and transactional factor accounts for 19.69% of the total variance explained.

Concerning the Knowledge sharing behaviour, a total of 7 items of two dimensions were subjected to factor analysis. The result in Table 3 showed that all the 7 items subjected to factor analysis loaded with acceptable loading factors greater than 0.4 required. However, one item coded ksb7 was excluded from the factor as a result of cross loading. The items indicated a KMO of 0.673 with eigenvalue greater than 1 and accounted for 64.57% of the variance explained with tacit factor scoring 50.07% explicit factor having 14.50% of the total variance explained.

Next, the factor analysis result for the intrapreneurial orientation variable with three dimensions showed that the 15 items submitted for factor analysis loaded into the factors with factor loadings greater than 0.4 required. However, after several steps, items IOpro6, IOpro10, IOrt3, IOrt5, IOinno14 and IOinno15 were discarded due to the problem of cross loading. The loaded items in Table 4 indicated a KMO of 0.739 with eigenvalue greater than 1 and account for 77.06% of the variance explained. Proactiveness, risk-taking and innovativeness respectively accounted for 45.52%, 20.93% and 10.61% of the total variance explained.

Accordingly, Table 5 showed the factor analysis for the performance of the academic leaders. In all, a total of 38 items with five dimensions variables were subjected to factor analysis. The result indicates that all the 38 items subjected for factor analysis showed factor loadings greater than 0.4 as required. However, 18 items were excluded due to cross loading problems. The loaded items displayed a KMO of .682 with eigenvalue greater than 1 and account for 71.68% of the variance explained. Respectively, managerial, political, interpersonal, academic and communication performances accounted for 39.17%, 10.69%, 9.05%, 7.17% and 5.60% of the total variance explained.

Table 2: Factor Analysis Result for Leadership Style

Variables	Factor 1		Factor 2	
Transformational	TRF20	.906		
	TRF7	.858		
	TRF14	.817		
	TRF8	.813		
	TRF19	.786		
	TRF4	.738		
	TRF18	.735		
	TRF15	.591		
	TRF6	.570		
	TRF2	.543		
	TRF11	.511		
	TRF1	.477		
	TRF17	.460		
	TRF16	.441		
	TRF5	.440		
Transactional			TSAC3	.907
			TSAC6	.901
			TSAC11	.874
			TSAC4	.871
			TSAC10	.831
			TSAC9	.785
			TSAC1	.778
			TSAC7	.590
			TSAC12	.584
Eigenvalue			55.94	
Variance explained for each factor (%)			36.25	19.69
Kasier-Meyer-Olkin MSA			.668	
Bartlett's Test of Sphericity App. Chi-Square			711.203	
Df.			276	
Sig.			.000	

Table 3: Factor Analysis Result for Knowledge Sharing Behavior

Variables	Factor 1		Factor 2	
Tacit	KSB6	.879		
	KSB5	.830		
	KSB4	.566		
Explicit			KSB1	.900
			KSB2	.718
			KSB3	.481
Eigenvalue			64.57	
Variance explained for each factor (%)			50.07	50.07
Kasier-Meyer-Olkin MSA			.673	
Bartlett's Test of Sphericity App. Chi-Square			67.319	
Df.			15	
Sig.			.000	

Table 4: Factor Analysis Result for Intrapreneurial Orientation

Variables	Factor 1		Factor 2		Factor 3		
Proactiveness	IOPRO 9	.886					
	IOPRO 8	.796					
	IOPRO 7	.621					
Risk-taking			IORT2	.914			
			IORT4	.837			
			IORT1	.707			
Innovativeness					IOINNO12	.895	
					IOINNO13	.789	
					IOINNO11	.676	
Eigenvalue					77.06		
Variance explained for each factor (%)					45.52	20.93	10.61
Kasier-Meyer-Olkin MSA					.739		
Bartlett's Test of Sphericity App. Chi-Square					161.787		
Df.					36		
Sig.					.000		

Table 5: Factor Analysis Result for Academic Leaders' Performance

Variables	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
Managerial Performance	MGR4 .841 MGR7 .735 MGR1 .657 1 .631 MGR8 .605 MGR2 .591 MGR1 .555 MGR5				
Political Performance		POL3 .825 POL4 .816 POL2 .728			
Interpersonal Performance			ITP5 .775 ITP6 .740 ITP11 .648		
Academic Performance				AC3 .840 AC4 .812 AC2 .806	
Communication Performance					COM4 .772 COM1 .599 COM2 .591 COM6 .590
Eigenvalue					71.68
Variance explained for each factor (%)		39.17	10.69	9.05	7.17 5.60
Kasier-Meyer-Olkin MSA					.682
Bartlett's Test of Sphericity App. Chi-Square					439.335
Df.					190
Sig.					.000

3.3 The Reliability Result

As suggested by Zikmund et al. (2013) and Pallant (2007), a Cronbach's Alpha coefficient of 0.6 and above is required for any instrument to be accepted as reliable. Hence, instruments with less than 0.6 Cronbach's Alpha coefficient score is considered unreliable. Table 6 indicates that all instruments for the variables under investigation are reliable as they all showed a Cronbach's Alpha coefficient scores of above 0.6 ranging from leadership style (0.785), knowledge sharing behaviour (0.753), intrapreneurial orientation (0.811) and academic leaders' performance (0.909)

Table 6: Validity and Reliability Test Result

Variables	No of Items	Cronbach's Alpha
Leadership style	24	.785
Knowledge sharing behaviour	6	.753
Intrapreneurial Orientation	9	.811
Academic Leaders' Performance	20	.909

4.0 DISCUSSIONS

The major purpose of the study was to determine the validity and the reliability of the instruments for leadership style, knowledge sharing behaviour, intrapreneurial orientation and performance of the academic leaders. Therefore, both construct validity and Cronbach alpha technique were employed to determine the extent these instruments were able to measure what they intend to measure. Overall the findings indicate that majority of the items for the all four variables under investigation are valid and reliable while a few of them are not valid and reliable and hence dropped.

The construct validity via KMO which is the indicator for the validity for the leadership style in this factor analysis showed a respectable 0.668 validity score which is better than acceptable KMO of 0.6 as suggested by Pallant (2007) and Zikmund et al. (2013). This indicates that the final 24-item instruments passed the validity test. In addition, the reliability test for the instruments showed an acceptable Cronbach's Alpha score of 0.785, indicating that the items are very reliable. Hence, the instruments also passed the reliability test.

The validity and reliability test results for the knowledge sharing behaviour instruments showed significant results. They both indicate that the instruments are valid and reliable. The validity (KMO) and reliability (Cronbach's Alpha) scores indicate 0.673 and 0.753 respectively which are well above acceptable scores of 0.6 as suggested by Pallant (2007) and Zikmund et al. (2013). This result suggests that the remaining 6-item instruments can be further used in our main study.

For the intrapreneurial orientation, the results showed that the instruments containing the final 9 items are significant to be used in our main study. The validity (KMO) and reliability (Cronbach's Alpha) scores revealed .739 and .811 respectively which are above acceptable scores of above 0.6 as suggested by Pallant (2007) and Zikmund et al. (2013).

Finally, the result for the validity for academic leader's performance indicated that the instruments scored a commendable validity score of KMO 0.682. This suggests that the instruments were valid and suitable to be further used in the main study. The reliability result also showed that the final 20-item instruments were reliable with a Cronbach's Alpha coefficient scores of 0.909 and this is consistent with the result obtained by Fox et al., (2005) who reported a high Cronbach's Alpha coefficient scores of above 0.9 for the instruments.

5.0 CONCLUSION

The validity and reliability analyses conducted on the original 92-item have resulted in the final 59-item instrumentations for leadership styles, knowledge sharing behaviour, intrapreneurial orientation and performance of the academic leaders. The results revealed that all of them were valid and reliable. Hence, the validation and reliability of the instruments were here affirmed. Based on the factor analysis and reliability results via KMO and Cronbach alpha, this study concludes that the instruments for all the variables really reflect what they intend to measure.

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