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Research Article

The Effect Of Organization Design On Knowledge Management In Ethiopian Universities Being Mediated By Internal Process

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ABSTRACT

This very aim of this paper is to examine the impact of organization design on knowledge management in Ethiopian. It is quantitatively designed. 382 academicians and academic leaders were chosen from top Ten Ethiopian Universities as respondents. Confirmatory and path analysis were implemented for the data analysis purpose. For the betterment of the model fit, model modification indices were computed. The robustness of the model was tested by statistical instruments like RMR, GFI, AGFI, PGFI, NFI, RFI, IFI, TLI, CFI, and RMSEA. Empirical evidence indicated that there is strong association between organization structure, knowledge management and internal process. Moreover, statistical findings also revealed that organization structure is passive to directly and strongly affect knowledge management unless mediated by effective internal process. Hence, officials in Ethiopian universities should pay attention to align the very ideas of organization structure, internal process and knowledge management. Practical policies, strategies systems and programs should be articulated to facilitate the alignment

Key words: Ethiopian Universities, Organization Design; Internal Process; and Knowledge Management;

INTRODUCTION

The very aim of this paper was to investigate the effect of organization design on knowledge management by considering the mediation effects of internal process In the first place, universities are legally and morally mandated for knowledge creation, distribution and utilization (Alavi. & Leidner, 2001; Maryam, 2016, and Nwachukwan et al 2016). They are there to create distribute and apply knowledge to support the socio-economic and socio-political development of the particular nation. They are responsible to satisfy the knowledge need of their society (Geruade, 2002). All their philosophies, visions, missions,

goals and objectives are derived from satisfying the knowledge demand of the respective organization and or nation (Rowley, 2000). They are mandated to contribute to the human civilization through enhancing innovation, creativity, and technology of the particular society and accordingly mitigating ignorance (Thomas et al, 1998). They are expected to undertake knowledge building practices through initiating applied education, research activities, different experiments, knowledge application laboratory, and knowledge engineering (Yoshiteru, 2020).

The vey term knowledge is coined for the first time by Francis Bacon in the 15th century in his very book the 'Navom Organon' which is translated as the new way of thinking (Haradhan, 2017). This scholar is well known in his saying that knowledge is power (Jen, Khalid & Hasaan 2014). Drucker (2001) also further explains it from the viewpoint of organizational and national success in his article entitled with 'The Age of social Transformation'. Though there is more access to knowledge in 21st century than ever before, organizations/nations are not effective to manage knowledge as a vital wealth (Rifat, et al 2012).

Though the vitality of knowledge and its management is advocated by different scholars, its implementation in higher education institution it is not an easy thing (David, 2006; Geruade, 2002 & Huei-Tse (2012). One of the challenges arises from the wary the given organization is designed and its internal process.

Despite this very logic, universities in Ethiopia are not seen putting a due attention aligning organizational design, knowledge management and internal process. As I learned from my university experience, Ethiopian higher education institutions are not in a position to inculcate the very idea of knowledge management in their strategic vision (Teshome, 2019). Indigenous knowledge and wisdoms are not this much considered because of poor organizational design and internal process. Rather than indigenizing different global knowledge, they labor much to implement different western and eastern knowledge and wisdom as they are. Though Ethiopia is the land of more than 81 nations, universities are not seen Ethiopianizing different traditional knowledge and wisdom (Wuhibegezer, 2015).

Being motivated by these very gaps, I decided to undertake numerical survey under the very title 'The effect of organization design on Knowledge & knowledge management in Ethiopian Universities: Bing mediated by internal process'. The targeted population was higher education institutions in Ethiopia. 382 academicians and academic leaders' were chosen to be addressed. Data were gathered through 5-likert scale questionnaire. The investigation result indicated that organization structure by itself is not a guarantee for the success of knowledge management unless supplemented by efficient internal process.

1. LITERATURE REVIEW

1.1. The Issue of Knowledge Management

The first issue to be discussed is the very idea of knowledge management. According to Nonaka & Takeuchi (1995), knowledge management is the capability of a given institution to create, distribute and apply knowledge in a way it improves innovation, and creativity. Fore Dalkir (2005), knowledge management supports performance progress by enhancing the practicality of institutional visions, missions, goals, policies, strategies, and systems. Somchai & Yuen (2007) expressed knowledge management as an exclusive source of innovation, creativity, and technology. Young & Matthew (2014)

in their part described it as a collaborative and integrated approach to design practical paradigms, models, values, systems and practice for the betterment of performance.

Alberta & Wilberforce (2012) claims that knowledge management is all about policies, strategies, and initiatives practiced while knowledge creation, storage, protection, sharing, application and disposal. For Huei-Tse (2012), knowledge management serves as a means of improving performance by unlocking the innovative potential of academicians, knowledge workers, and academic leaders. Jin & Shiyang (2009) commented that knowledge management is there to enhance performance by stabilizing the tension of organizational politics. Somchai & Yuen (2007) in their part promoted knowledge management practices as a means of generating extraordinary performance from knowledge workers, academicians, academic leaders, teams, and stakeholders.

Paula Danskin et al (2014) in their part promoted that knowledge management is a strategic tool for strategic development. For Rony (2017), knowledge management is a means of policy formulation, implementation, and evaluation. Timothy & Glenn (2009) argued that it is there to facilitate the practicality of the universities' vision, mission and strategic goal/s by allying different institutional initiatives to act in the same direction for the same purpose. These all arguments show that knowledge management is the institutional quest of the 21st century to enhance institutional performance.

1.2. The Association Between Organizational Design And Knowledge Management

Organizational design is all about the way the given institution is build (Dale Karen, and Gibson Burrell, 2008). It is concerned with the philosophy, values, visions, missions, goals, and principles of the particular institution (Kesler, 2011). It is the alignment of structure, process, rewards, metrics, and talent with organizational strategy (Amaral & Uzzi, 2007). Organization design is the roadmap to the predetermined superordinate goals. A god organization design requires undertaking SWOT Analysis, articulations of organizational philosophies, fixing institutional values, setting visions & missions, establishing goals, articulating organization structure, formulating policies & strategies and aligning systems & sub-systems (Braha & Bar-Yam., 2007). While making organizational design, some basic principles should be attendee. These are Specialization, coordination, knowledge and competence, control & commitment, and innovation & adaptation principle (Butler, 1986). Its goodies can be tested by different approaches. Specialization principle is used to test the relevance of different professions, norms and cultures (ibid). Coordination principle is there to evaluate the alignment of organizational philosophies, visions, missions, policies, strategies, systems and programs toward attaining the predetermined goal/knowledge and competent test is all about integrating organizational structure and the existing knowledge workers (ibid). Lastly, innovation & adaptation principle is concerned with testing toward extent the organization design is reasonably flexible (Paul &Jay William, 1967). .

To be best implemented the given organization structure should be simple, practical, flexible, economical, valid, reliable and acceptable (Richard, Fremont and James, 19730.

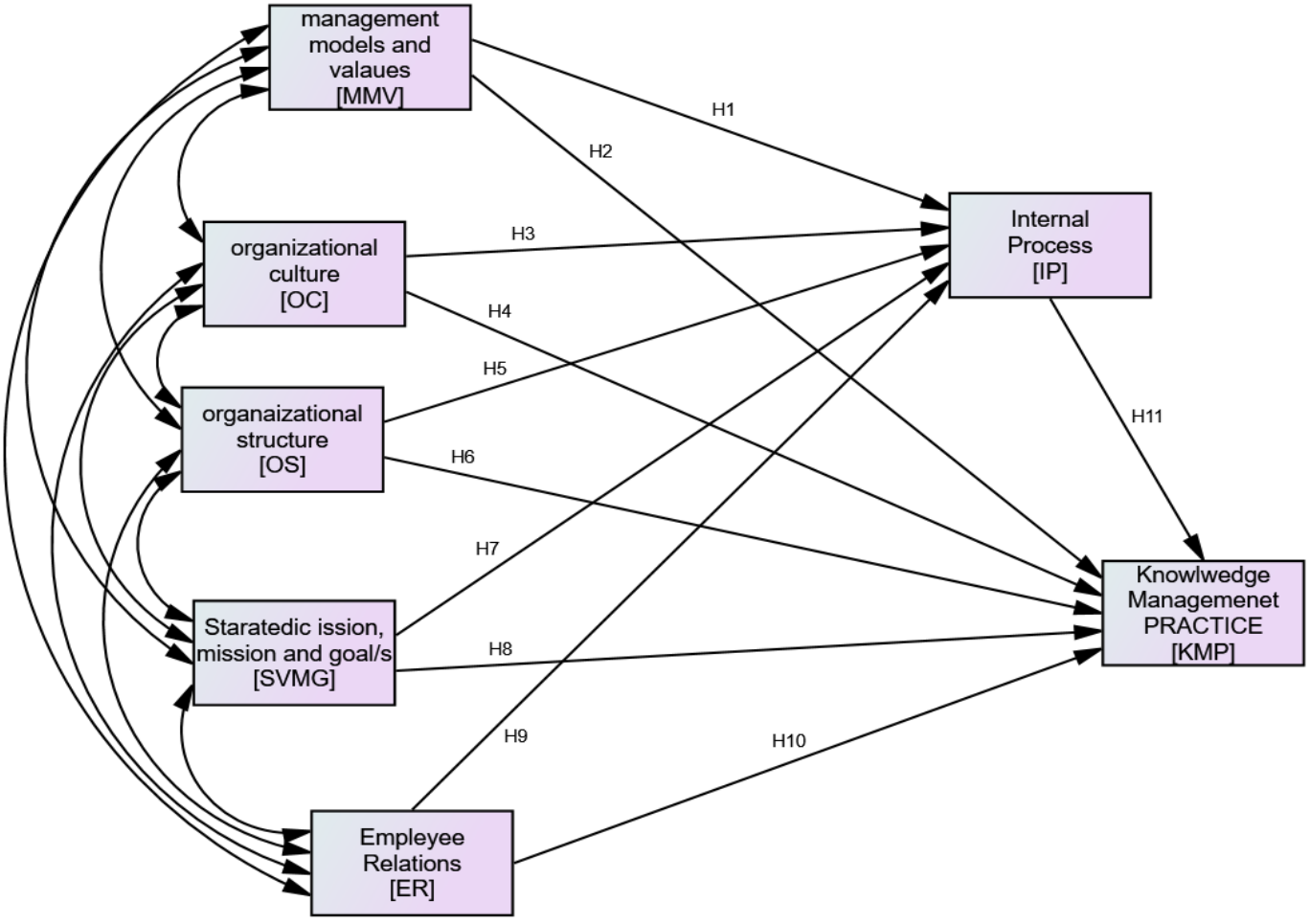
The way organization design made affects the overall activities of the organization (Goold, 2002). Institutional knowledge management practice also exposed to the nature of the organization design. Some institutions take into consideration the ideal of knowledge and knowledge management while setting foundations for organizational design. They inculcate the in to their strategic vision, mission and goal/s. such institutions have high chance to exploit the benefits of their knowledge wealth.

1.3. The Mediating Role In Internal Process

Internal process is concerned with all plans, rules, regulations, artificial intelligence, and organizational routines that aids /ease the implementation of knowledge management in the respective organization (Hesham, 2010). It plays a strong role in mediating organization design and knowledge management. It determines the degree of KM implementations (Michael, 2002 & Alireza, et al 2011). The very prominent proverb that 'The Devil is in the Detail' works here! The more the weak links in the organizational routine, the more knowledge is hoarded by the respective knowledge worker [the naturally authorized possessor of knowledge] and vice versa (Astrid Jaime, et al, 2006). Manoj et al (2016), Shafqat & Atta (2012) claimed that internal process is the effective & efficient utilization of information technologies. For Sangeeta (2015), internal process is the capacity to practice artificial intelligence to facilitate the realization of knowledge management implementation. Lin Chia-Cheng (2007) in his part suggested that internal process serves in supplementing the effect of organization design on knowledge management practices.

2.1. Theoretical Framework

From the empirical evidences and my teaching experiences in different Ethiopian universities, I learned that there are some gapes in Ethiopian higher education institutions. In the first place, there is no strong awareness about the very notions of knowledge and knowledge management. Secondly, no investigation was undertaken on the very ideas of organization structure, internal process and knowledge management. Thirdly, they are not in a position to inculcated these contemporary issues in their strategic vision,



mission and goal/s. to fill these gaps, I produced the under mentioned theoretical frame work. In the framework there are predictive, mediating and outcome variables. Diagrammatically,

Figure 1: Theoretical framework

3. DESIGN AND METHODOLOGY

As a philosophical roadmap, positivist's idea was taken in to consideration. The research paper was designed quantitatively. As respondents, 382 academician and academic leaders were chosen from top Ten Ethiopian Universities. A5-liker scale questionnaires were distributed being self-administered. The issue of multicollinearity, reliability, validity and hetroscedasticity were statistically tested. A path analysis was adopted to analyze the data gathered. To improve the robustness of the model, model modification indices were computed. The predetermined one-tail hypotheses were tested by the p-value approach. The fitness of the model was statistically tested by tools such as RMR, GFI, AGFI, PGFI, NFI, RFI, IFI, TLI, CFI, and RMSEA. To come to conclusion both deductive and inductive approaches were followed.

4. DATA ANALYSIS, RESULTS, DISCUSSION AND INTERPRETATION

This very section is all about data analysis, results, discussion and interpretation. Before moving to the detail analysis, the issues of multicollinearity, reliability, validity, linearity were statistically justified. Then different inferential statistics such as multiple regression, mediation and path analyses were adopted were adopted. Model fit modification indices were implemented for the purpose boosting the robustness of the model. Lastly, the fitness of the model was statistically justified.

4.1. The Issues of Multicollinearity

Dimensions	Condition Index	MMV	OC	OS	SVMG	ER	IP	KM	Tolerance	VIF
1.	23.603	.03	.01	.04	.02	.00	.00	.00	.283	3.531
2.	26.760	.00	.00	.00	.00	.02	.00	.00	.284	3.524
3.	27.719	.04	.02	.06	.01	.02	.01	.01	.293	3.414
4.	30.740	.02	.00	.00	.00	.08	.05	.00	.234	4.275
5.	31.185	.00	.00	.01	.00	.02	.02	.00	.319	3.138
6.	33.449	.02	.02	.04	.01	.05	.00	.01	.140	7.146
7.	34.153	.06	.08	.01	.04	.02	.00	.17	.142	7.019
8.	25.842	.06	.02	.13	.00	.00	.03	.10	.113	8.817

Table 1: Multicolliniariti Diagnose

Remarks

1) All the Tolerance values are < 0. 50
2) All the VIF values are ≤10

3) All the Condition Index values are ≥30.
4) All the Variance Proportion values are ≤0.30.

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Hence, there is no multicollinearity problem just like proved in the above correlation matrix.

4.2. The Issues Composite Reliability, Validity and Linearity testing

	CR	AVE	MMV	OC	OS	SVMG	ER	IP	KM
MMV	0.867	0.566	**0.752**						
OC	0.884	0.604	0.743	**0.777**					
OS	0.844	0.643	0.735	0.735	**0.802**				
SVMG	0.877	0.589	0.744	0.773	0.798	**0.767**			
ER	0.845	0.646	0.705	0.696	0.757	0.743	**0.803**		
IP	0.934	0.702	0.756	0.734	0.747	0.761	0.745	**0.838**	
KM	0.882	0.557	0.541	0.599	0.509	0.612	0.488	0.745	**0.746**

Table 2: Correlation Matrix

1) All the composite reliability values are ≥ 0.80
2) All the average variance extracted[AVE] Values for all latent variables are ≥ 0.50
3) The square roots of the AVE are greater than each respective inter-item correlations
4) All the inter-item correlation values are ≥ 0.50

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Hence, the assumptions of composite reliabilities, convergent validities, discriminant validities, and linearity' are validated.

4.3. Multiple Regression Analysis & Their P-Values

For the sake of this paper, multiple regression analysis was adopted to investigate the strength of variation caused by predictive variables on outcome variables. Mathematically,

	PER [Independent Variable]								
Dependent & mediating variables		R	R^2	Adjusted R^2	B	F	Sig.	t	Sig.
	MMV	.534	.286	.284	.591	151.843	.000	12.322	.000
	OC	.613	.375	.374	.698	228.425	.000	15.114	.000
	OS	.547	.300	.298	.625	162.587	.000	12.751	.000
	SVMG	.629	.396	.394	.722	248.753	.000	15.772	.000
	ER	.500	.250	.249	.536	126.990	.000	11.269	.000
	IP	.595	.354	.353	.696	208.526	.000	14.440	.000
	KM	.623	.389	.387	.715	241.424	.000	15.538	.000

Table 3: The Multiple Regression Analysis

As can be seen from the table,

- all the correlation coefficients are greater the 0.50 indicating the strong association between predictive and outcome variables
- all the Beta [B] values are positive and significant at 0.05 confidence interval

In the same token, the regression equation can be computed as follows:

PER=9.82+.591MMV+.698OC+625OS+.722SVMG+.536ER+.696IP

4.4. **Mediation Analysis**

Direct influences																							
path I[association between KMP & mediating variable]									**path 2 [association between mediating variable & performance]**								**Pathe3 [direct association between KMP & performance]**							
	Unstandardized Coefficient B	t	Sig.	F	Sig.	R	R Square	Adjusted R Square	Unstandardized B	t	Sig.	F	Sig.	R	R Square	Adjusted R Square	Unstandardized Coefficients B	t	Sig.	F	Sig.	R	R Square	Adjusted R Square
(Constant	1.47	8.93	.000	146.9	.000	.527	.278	.276	1.39	10.8	.000	175.2	.000	.561	.314	.313	.541	5.221	.000	611.08	.000	.78	.615	.61
KM	.649	12.1	.000						.483	13.2	.000						.833	24.72	.000					

Table 3: The Mediation Analysis

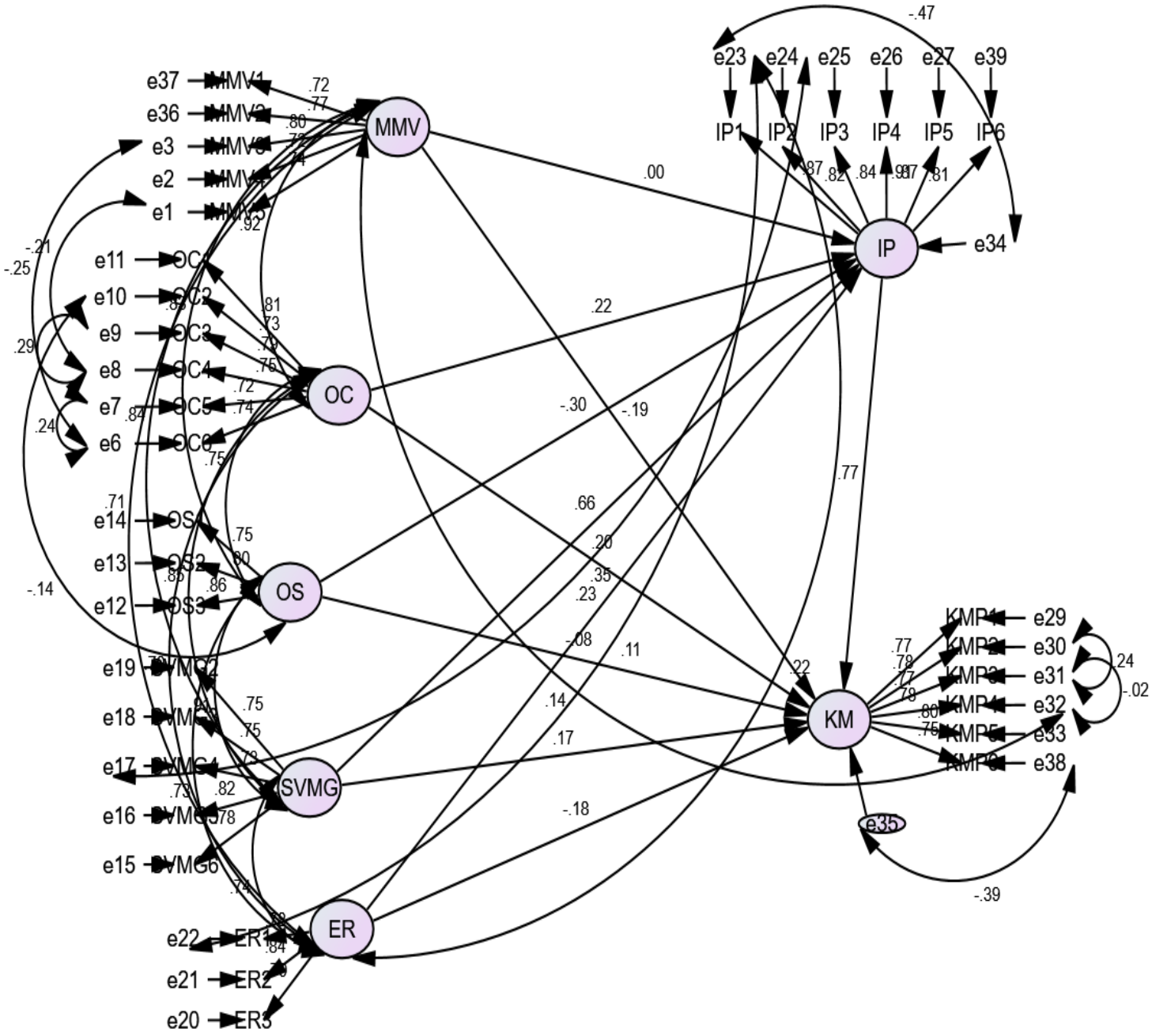
As clearly revealed in the table,

- All the regression and correlation coefficients are significant at 0.05 confidence interval
- The regression loadings & correlation coefficients on path 3[being mediated] is greater than that of path 1 & path 2 [unmediated]

==========hence, all the internal process in Ethiopian universities are there to mediate the impact of organizational design of knowledge management practices.

4.5. The Path Analysis

For the sake of this very paper, a path analysis was conducted to know the complex relationship among



predictive mediating and outcome variables. Accordingly,

Figure 2: The Path Analysis

The significance levels of the associational among the latent variables were computed as follows:

Associations			Estimate	S.E.	C.R.	P
IP	<---	MMV	0.001	0.149	0.007	0.035
IP	<---	OC	0.212	0.153	1.39	0.045
IP	<---	OS	-0.249	0.113	-2.205	0.027
IP	<---	SVMG	0.618	0.146	4.231	***
IP	<---	ER	0.296	0.055	5.363	***
KM	<---	IP	0.795	0.118	6.763	***
KM	<---	MMV	-0.201	0.219	-0.919	0.358
KM	<---	OC	0.205	0.22	0.931	0.352
KM	<---	OS	-0.067	0.157	-0.426	0.67
KM	<---	SVMG	0.164	0.209	0.784	0.433
KM	<---	ER	-0.153	0.071	-2.151	0.031

Table 4: The Mediation Analysis

As it can be inferred from the figure 2 and table 4, there are four paths. The first path is from predictive [MMV, OC, OS, SVMG, ER] to the outcome variable [KM]. The estimated loadings are negative and positive; but insignificant at 0.05 confidence interval. The 2nd path is from the predictive variables to the mediating variable. The regression loading of variables on this very path are positive and significant. The 3rd path is from the mediating variable to the outcome variables. The regression loading values are positive and significant. The 4th path is from the predictive variables [MMV, OC, OS, SMG, ER] to mediating variable [IP] to outcome variable [KM]. This indicates the median role of internal process between organization design and knowledge management in Ethiopian universities. As seen from table 7, the indirect effect [when mediated] is greater than the direct effect [when not mediated]. This in turn reaves the mediating power of internal process.

On the other hand, the correlation coefficients among the latent variables were computed as follows:

Correlations			Estimate
MMV	<-->	OC	.925
MMV	<-->	OS	.829
MMV	<-->	SVMG	.842
MMV	<-->	ER	.705
OC	<-->	OS	.754
OC	<-->	SVMG	.847
OC	<-->	ER	.699
OS	<-->	SVMG	.913
OS	<-->	ER	.735
SVMG	<-->	ER	.743

Table 6: The Mediation Analysis

From table 6, the correlation coefficients among the latent variable are greater than 0.50. This shows to what extent they are powerful to cause significant variations on the predetermined outcome variable.

Standardized Direct Effects							Standardized Indirect Effects					
	ER	SVMG	OS	OC	MMV	IP		ER	SVMG	OS	OC	MMV
IP	0.353	0.663	-0.30	0.216	0.001	0	IP	0	0	0	0	0
KM	-0.176	0.17	-0.09	0.202	-0.19	0.768	KM	0.271	0.509	-0.232	0.166	0.001

Table 7: The Mediation Analysis

From table 7, it is possible to infer that the indirect effect of organization design of knowledge management is greater than that of the direct effect. This justify that organizational design in itself is passive to directly and significantly influence knowledge management practices in Ethiopian universities unless supplemented by effective and efficient internal process.

4.6. Robustness Of The Model

Different scientists inculcate different statistical approaches to test the robustness of the path-analysis model. The following table depicts the calculated values and their respective thresholds:

Model Fit Testing Tools	Calculated values	Cut points	Implications	Reference
RMR	0.036	≤ 0.08	Good fit	Hu & Bentler (1999); Anderson & Gerbing (1984); Fan & Sivo (2007); Asparouhov T. & Muthén B. (2009), Asparouhov T. & Muthén, B. (2009, and Jöreskog, K. G. (1969)
GFI	0.931		Good fit	
AGFI	0.916		Good fit	
		≥ 0.95		
PGFI	0.720	≥ 0.50	Good fit	
The Baseline Comparison tools				
NFI	0.903		Good fit	
RFI	0.890	≥ 0.95	Good fit	
IFI	0.950		Good fit	
TLI	0.942		Good fit	
CFI	0.949	≥ 0.90	Good fit	
The parsimony adjusted measures				
PRATIO	.0.879		fit	
PNFI	0.794	≥0.50	fit	
PCFI	0.834		fit	
The RMSEA tools				
RMSEA	0.051	≤ 0.05	Good fit	
LO 90	0.046		Good fit	

HI 90	0.055		Good fit
PCLOSE	0.400	≥ 0.05	Tolerable
HOELTER	223	≥200	Good fit

Table 8: Values of Fit Indices

From table 8, it can be inferred that the statistical value of the entire model fit testing instruments are greater than the cut-point. This shows that the model is fit enough to be practiced in Ethiopian higher education institutions.

5. CONCLUSION

As mentioned in the literature review, all the empirical premises indicated that the way a given organization designed has a significant role of the effectiveness and efficiency of knowledge management practice. The regression indicated analysis indicated that there is a strong and significant association between the organizational design, internal process and knowledge management practice. From the mediation and path analysis, it was inferred that organizational design cannot not directly and significantly influence universities' knowledge management practice unless supplemented by effective and efficient internal process.

6. RECOMMENDATION

As indicated in the conclusion, all organization design, internal process and knowledge management practice are strongly and significantly influence each other. Accordingly, I suggest Ethiopian higher education institutions that they have to employee a strong commit to examine the way their respective universities are designed and the existing internal processes from the view of knowledge management practices. Moreover, there should be practical policies, strategies, systems, and programs to align organizational design, internal process and knowledge management for the betterment of universities' success.

7. PRACTICAL IMPLICATIONS

This finding will be a signal for universities in Ethiopia in that it inspires them to rethink the way their particular university is designed. It also awakens them to undertake fundamental reformulations in a way that organization design, internal process and knowledge management practices supplement each other. Lastly, it motivates Ethiopian higher education institutions to think about these three things whenever they desire to change the institutional philosophies, models, values, visions, missions, and goals.

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