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A Synergy of Knowledge Management Processes Impacting Organizational Ambidexterity for Pakistani IT Firms

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ABSTRACT

Parallel multiple mediation analysis has received limited attention in Business and Management research, despite its potential to provide deeper insights than simple mediation models. This study applies a parallel multiple mediator approach to examine how predictors shape outcomes through simultaneous mediating pathways. Data were collected from 655 respondents in Pakistan's IT sector using an investigative research design. Findings show that the predictor variable improved the outcome by 57% through the mediating mechanism. All oblique consequences had been extensively one of a kind from zero ($p < .05$), confirming partial mediation among the antecedent and consequent variables. These effects spotlight the significance of assessing the character and blended roles of mediators in place of counting on single-route fashions. Beyond empirical contributions, the object emphasizes the fee of conditional system evaluation and the usage of bootstrapping self assurance durations in strengthening the robustness of mediation research. By advancing methodological practice, this have a look at gives sensible steering to researchers and college students searching for to use greater state-of-the-art mediation fashions inside organizational contexts.

Keywords: *Parallel Multiple Mediation Model; Simple Mediation Model; Conditional Process Analysis; Bootstrapping, Confidence Interval.*

INTRODUCTION

Mediation analysis was historically conducted using the causal steps approach (Baron & Kenny, 1986), but more recent scholarship emphasizes conditional process analysis for examining complex models of mediation and moderation (Hayes, 2013, 2018; MacKinnon, Lockwood, Hoffman, & West, 2002; Preacher & Hayes, 2004, 2008). Conventional statistical packages like SPSS and SAS can't produce self belief durations of merchandise of parameters just like the oblique paths which can be the point of interest of mediation. Conditional process analysis addresses this gap by incorporating bias-corrected bootstrapping with at least 5,000 resamples, producing robust confidence intervals and offering a reliable, simplified method for analyzing mediation and moderation effects (Hayes, 2018; MacKinnon, Fritz, Williams, & Lockwood, 2007; Preacher & Hayes, 2008).

The PROCESS method surpasses both the Sobel test and normal theory approaches. The latter assume normality of the indirect effect's sampling distribution, an assumption consistently shown to be inaccurate (Craig, 1936; Bollen & Stine, 1990; Hayes, 2013, 2018; Stone & Sobel, 1990). Moreover, the Sobel test demonstrates lower statistical power and less precise confidence intervals (Hayes & Scharkow, 2013; MacKinnon, Lockwood, & Williams, 2004). In contrast, PROCESS with bootstrapping yields more powerful and reliable confidence intervals. Compared to the causal steps framework (Baron & Kenny, 1986), conditional process analysis is also more rigorous, as it quantifies indirect effects directly rather than inferring them solely from the significance of paths 'a' and 'b' (Hadi et al., 2016; Fritz & MacKinnon, 2007; MacKinnon et al., 2002).

Beyond efficiency, conditional process analysis enhances accuracy by reducing commands, improving Type I error control, and enabling the comparison of "specific indirect effects" across multiple mediators in parallel models (Hayes, 2018). Bootstrapping additionally offers in addition refinement to the evaluation through empirically estimating the sampling distribution of oblique results that allows you to offer self assurance periods on oblique, direct, and overall consequences. Unlike normal theory approaches, it does not assume distributional normality, making it particularly effective for skewed data. For more details on bootstrapping, see Mooney, Mooney, Mooney, & Duval (1993), Lunneborg (2001), Parsonage, Pfannkuch, Wild, & Aloisio (2016), and Wood (2005).

Despite its methodological advantages, parallel mediation remains underutilized in business and management research. To illustrate its application, this study draws on knowledge management processes -m1/KMP with knowledge application & knowledge transfer as its components (Donate & Pablo, 2015), as mediators. The paper concludes with practical recommendations for employing parallel mediation procedures, which can significantly strengthen methodological rigor and theoretical contributions in business and management studies.

Simple and Parallel Multiple Models of Mediators.

The fourth shape of conditional Process analysis, is a statistical device to degree the effect of forerunner variable x on consequent variable y with the aid of using middleman variable m. Simple mediator model handiest permit the researcher to do not forget an single arbitrating mechanism. But that present day look at mediator is built of factor intermediaries and consequently such cases, mandate that easy mediator version method look at the mediating effect of blended mediator, in addition to parallel a couple of mediator version take a look at the mediating effect of different element mediators (Hayes, 2018). This lets in relative strengths of the mediators to be determined. Parallel more than one mediator version is bendy in that it is able to examine greater than mediators or even seven mediators withinside the equal version on the identical time (Hayes, 2018).

The Easy Mediator Version has the Subsequent Statistical Equations.

Statistical The mediation analyses is a statistical process to decide the effect of a causal antecedent variable, x, on the consequent variable, y, through an intermediating variable, m. This model of easy mediation may be applied on PROCESS macro and may be summarized as follows:

m=i+a.x+e……. eq1;

y=i+ c/x+b.m+e……eq2;

y=i+c.x+e…. eq3

i having regression constants, a, b, c, c/ regression coefficients.

The manner via x and y however with out the intervention of m is known as its direct effect. A case of indirect effect, in which we've the primary reason x which follows impacting y. C/ will produce the impact of x on y without delay and this is called c/ (speak with eq2). A tough implies of the term instantaneously effect is that examples which alternate on the value of a unit on 'x' are the equal on m are anticipated to extrade on the price of c/ equipments on y.

The a x b is the indirect impact of the course of x at the course of y. Path aMeasure Assuming that the modifications withinside the times are to be located in a unit on x, locate wherein the example will lie in a unit on m. Path diploma The distance among 2 times which vibrate through 1 on m however is probably same on x is projected desk bound with the assist of distance b on y(eq1). The mediating outcomes of x onto y are the consequences synthetic of a and b(eq2). Path ab illustrates that 2 times of a-of-a-specific connected the use of a unit is anticipated to vary withinside the resource of the usage of a unit ab on y because of this have an impact on of x on the fee of the use of m.

The suggest impact of reworking x with the aid of using one unit or another is probably expressible withinside the shape of c (eq3) which computes the extent to which 2 times that change through 1 unit on x are probable to additionally range on y. c route may be computed as c= c/+ ab.

Ratio of the indirect to the complete effect, that's regularly taken into consideration to symbolize a length of effect, is a idea termed effect duration diploma. It may be evolved the use of that of Pm=ab/c. The extra almost Pm is to at the least one the extra almost does the intermediate operation mediate the have an effect on, x, exerts on y. Second, Fairchild, Mackinnon, Taborga and Taylor: (2009) added version idea of measurement of effect duration internal know-how and the version rated as exceptional variance results within the version (Hayes, 2009).

The Case of Parallel Multiple Mediator Model Statistical Equations.

Parallel more than one mediator model" that has allowing variables (m1 and m2) and AOX as final results variable is included. The parallels of a couple of fashions may be given withinside the equation belows:

$m1 = i\ of_{m1} + a_1 x + e \ldots\ldots\ldots$ *Eq1*

$m2 = i\ of_{m2} + a_2 x + e \ldots\ldots\ldots$ *Eq2*

$y = i\ of_{y} + c' x + b_1 m_1 + b_2 m_2 + e \ldots\ldots\ldots$ *Eq3*

$y = i\ of_{y} + c\, x + e \ldots\ldots\ldots\ldots$ *Eq4*

Equation 1,2,a1,a2, Find out what number of instances of that nature that extrade with the aid of using one unit on x will alternate the quantity of instances on m1 and m2, respectively. Equation four b1, update the amount, which 2 instances, which vary in a single unit on m1, fluctuate on y, maintaining m2 constant, with the aid of using the estimate of that quantity. c/ estimates the amount differing among 2 instances on y with the aid of using one unit, all different elements constant. This version c/ does now no longer have any facilitator, direct c is going among x and y. All the "oblique paths" undergo every of the mediator and are known as as unique oblique results. Therefore, there are particular oblique results of a version that has 2 mediators on m1 (x--m1--y); m2(x--m2--y). The first of these is the effect of x on m, direction a and the second is the route of m to y, route b. In this way, the particular indirect effect of x on y through m1 is a1b1 and the perfect indirect effect of x on y through m2 is a2b2. Path c or the entire effect of x on y = The effect of x on y is c, and additionally may be written c= c/ + a1b1+a2b2. Process is simple and beneficial as it makes the estimation manner a whole lot extra honest via way of means of strolling all regression relationships inside a unmarried command in addition to produces different information and inferential information inclusive of estimating preferred errors, importance records, and bootstrap self belief periods for overall and unique oblique outcomes."

Conceptual Framework and Hypothesis Building

Open Systems idea has determined its manner in few areas and fields. It is tested with the aid of using the idea that any tool can be characterised as a set of inter-associated things: inputs, techniques, outputs (Boulding, 1956; Checkland, 1994; Checkland and Scholes, 1999; Jhonson, Kast and Rosenzweig, 1964; Robbins and Coulter, 2018; Rothwell, and Kazanas, 2011). The inputs may be uncooked materials, human assets or truth and capital approximately the antecedent variables. Operations are sports that charges are uploaded directly to inputs. The entire merchandize and offerings are outputs. This perception is embraced into the high-tech look at as a way to live to tell the tale the antecedent variables turning into a translucent input, the mediating variables withinside the shape of the operations or methods and organizational very last effects variable turning into the output of the present day day take a look at.

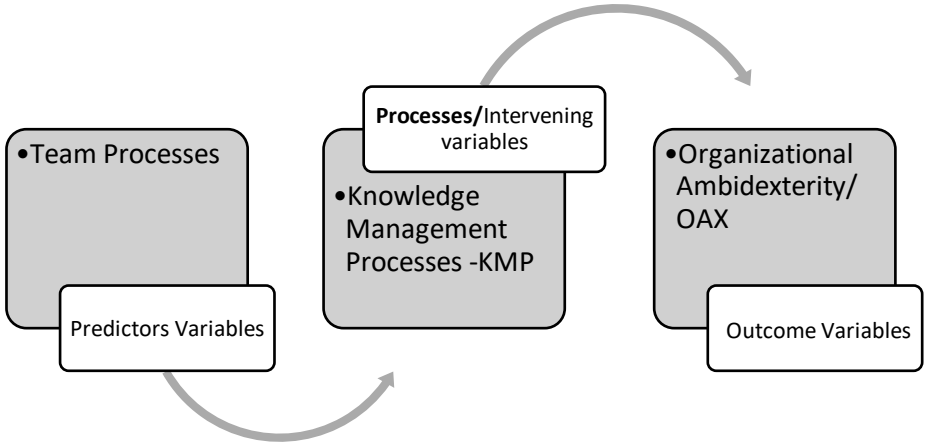


Figure 1: Conceptual Model

Fig 1 indicates the rules of the studies version that has been used withinside the contemporary study. The enter or antecedents were taken into consideration because the TMP/Team methods and mediating strategies had been taken into consideration as KMP/Knowledge control approaches of 3 theoretical paperwork while the output or organizational final results variable has been taken as Organizational ambidexterity/OAX (Mahmood, Qureshi, and Hadi, 2019). Team methods (Sumner and Slattery, 2010) embody comprising sports involving: settlement of objectives; green incorporation of resources, with the aid of using the crew participants and their leader; instituting elements of trust; group leadership; powerful communications; and possible choice making amongst crew participants. Knowledge control techniques/KMP (Mahmood, Qureshi, and Hadi, 2019; Mahmood and Hadi, 2020) is taken into consideration to be a mixed mediator that consists of m1/KMP (Donate & Pablo, 2015). Dependent variable Organizational Outcome /Organizational Ambidexterity=Exploratory innovation and Exploitative innovation. Exploitative improvements are incremental improvements aimed toward fulfilling the wishes of present clients, current markets, current services/products, present distribution channels etc. Explanatory improvements are new improvements geared toward gratifying the wishes of recent clients and markets, services/products, distribution channels etc. (Jansen, Van Den Bosch, and Volberda, 2006; Junni, Sarala, Taras, and Tarba, 2013)..

Hypotheses:

H 1: Team procedures have a high-quality affect on "organizational ambidexterity. (Path c)

Hypothesis: Team tactics have a superb affect on information control strategies. (Path a)

H3: Knowledge control techniques have superb influences at the and the methods on organizational ambidexterity. (Path 'b')

H4: "The methods of know-how control" mediate among group approaches and "organizational ambidexterity" (Paths c/ & a*b)

H4a: hypothesis: Knowledge application/KA/m1 is the mediator among the crew strategies and the variable of the sort of "enterprise installing ambidexterity" (Path a1 b1)

H4b: Mediate: Team techniques and inter-group approaches are mediated via way of means of expertise transfer/KT/m2/among crew procedures and organizational ambidexterity. (Path a2* b2*)*

Data Collection

The present day observe primarily based totally its issues at the data in confirming mediation evaluation via way of means of suggesting that the dimensions of pattern ought to now no longer have fewer than 500 pattern length and pattern sizes extra than 558 are the maximum suitable to have extra vast consequences and impact sizes (Fritz and MacKinnon, 2007). An sincere sample duration be have become of 655.

Simple Mediator Model Implementation

This bankruptcy expounds on an instance of realistic easy mediator version.

Simple Mediation Model for TMP, KMP, & AOX

Here, Process/ Mediation with version four of conditional method evaluation is used to check mediation hypotheses H1-H4 (Hayes, 2013 and 2018). H1 is that TMP definitely influences AOX, and is course c of mediation version H2 is that TMP definitely impacts KMP and is course a of mediation version H3 is that KMP undoubtedly impacts AOX and is direction c/ of mediation version H4 is that KMP mediates the connection among TMP and AOX and is direction c/ of mediation version.

Parent 2 carries the consequences of the mediation the usage of bootstrapping. Results suggest that not one of the self guarantee intervals similar to paths a,b,c and c/ includes zero in it and it shows that the mediation is a legitimate finding. A evaluation of the bootstrapping outcomes under mediation examine are proven in desk 1 and table 2.

Simple Mediation version of estimation and statistical inference above Simple Mediation Model- Team Processes/TMP/Antecedent Knowledge and Learning Processes/KLP/Mediator - Organizational Ambidexterity/AOX/Outcome variable

$$m=i+a.x+e\ldots\ldots. \text{ eq1};$$

$$y=i+ c'x+b.m+e\ldots\ldots \text{eq2};$$

$$y=i+c.x+e\ldots. \text{ eq3}$$

When TMP/Team Processes: Fig 1 is referred to, this ends in "know-how control processes/KMP" that during flip results in organizational ambidexterity/AOX. The precis Table 1 indicates that a=.5927; b= .4105; c= .4648, c/=.2371. Thus, the version proven in Figure 2 could be had been m=1.1+.59x;

y=1.02+.24x+.41M, andy=1.47+.48x. course ab =.2371 oblique impact ab =.2371 displays mediating function of intervening variable To the quantity that 2 instances range through one unit on x/TMP, the dependence variable is appraised to differ via way of means of.2371. The oblique impact isn't always statistically 0 and may be validated with the assist of 95% bootstrap self assurance c language (.2323 to.3125).

When KLP mediator is a manage variable, the direct impact of TMP on AOX =.2731. When variant is produced through one unit on x/TMP, instances same on m/KLP however numerous on y/AOX, this modification is pondered with the aid of using a alternate in those instances that is much less through a component of.2731. Direct impact" has a statistically significant.0000 t (652) =7.7 with p=.0000, a 95% self belief c program languageperiod of .2323 to.3125. The direct and oblique outcomes sum to present general impact of TMP on AOX c=.2371+.2433=.4804. Total impact: This calculates the variety of extra devices on y/AOX, in instances which range via way of means of standardized variants (that is, instances differing with the aid of using one unit on x/TMP). This statistical importance is extraordinary to 0 t (603) =16.314, p=.0000 with a 95% self belief of .3543 to .4667.

Table 1

Model Coefficients for TMP-KMP-AOX

	CONSEQUENT											
	M (KMP)				Y (AOX)				Y (AOX) Total effect			
independent		coefficient	s.e	p		coefficient	s.e	p		coefficient	s.e	p
x(TMP)	a	.5927	.0351	.0000	$c^{/}$	.2371	.0308	.0000	c	.4804	.0294	.0000
m(KMP)					b	.4105	.0286	.0000				
Constants	i_m	1.0892	.1130	.0000	i_y	1.0200	.0883	.0000	i_y	1.467	.0947	.0000
	R^2=.30;p<.001; F(1,653)=284.642				R^2=.46; p<.001; F(1,652)=277.6649				R^2=.2896; p<.001; F(1,653)=266.1679			

Generalized Findings- Group Processes/TMP/Antecedent/Knowledge Management Processes/ KMP/Mediator/Organizational Ambidexterity/AOX/Outcome variable)

Basing on Table 2, Firstly, findings indicated that antecedent/TMP had superb impact to the final results variable/OAX (B=4804, t(653) =16.37, p<.001). They additionally decided that antecedent/TMP had a effective effect on mediator/KLP (=.5927, t (653) =20.51, p<.001). Additionally, the consequences showed the definitely mediated final results/OAX to mediator/KMP, B=.4105, t (652) = 16.87, p<.001). As each routes a and b had been of exceptional importance, mediation evaluation changed into carried out

*withinside the so-referred to as bootstrapping technique with bias-adjusted self belief tests (Mc Kinnon, Lockwood and William, 2004; Preacher and Hayes, 2018). Findings of the mediation evaluation indicated the mediating dating among final results/OAX and antecedent/TMP primarily based totally on mediator/KMP (a*b=.2725, C 1=.2039 to.2837). More, findings, tested that P overall performance below the direct effect of antecedent/TMP on output/OAX changed into decreased however remained significant (B=.23, t (652) =7.7, p=.0000) whilst mediated with the presence of mediator/KLP, so setting up partial mediation. It is diagnosed that because the evaluation is carried out concerning impact length 1 abcs' regular variety is CI=.2323 to.3125, consequently the whole standardized oblique impact of 'x' on y does now no longer consist of a 0 in its self belief interval. As we calculate impact length 2, Percent of intervention= Pm= fifty seven%. This way that mediating variable bills to fifty seven percentage of "general impact." Secondly there has been small AOX discrepancy that changed into attributed to TMP (R^2=.20) however the together antecedent and mediating variable introduced extra variation* (R^2=.46)

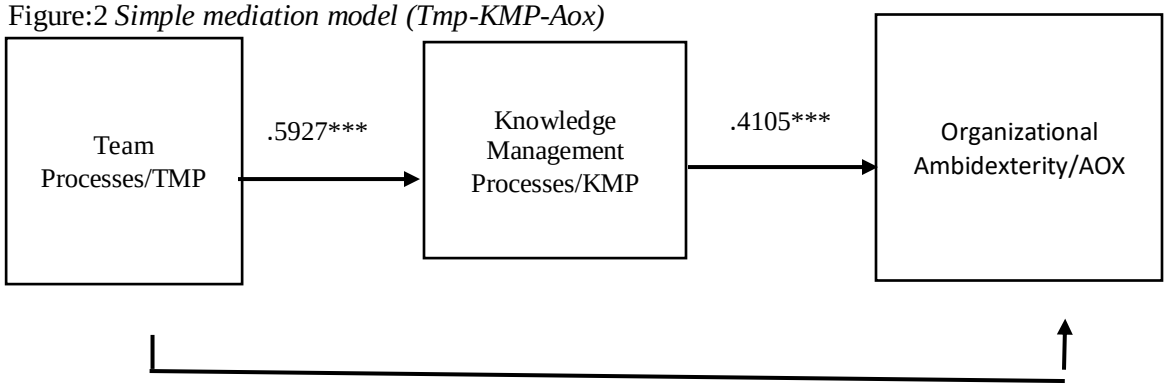
Thus H1-H4 are all showed.

Table: 2

Coefficients for TMP-KMP-AOX

Testing Paths	B	SE(B)	95% CI
Path c: Dependent Variable=OAX			
R^2=.28, F (1, 653) = 266.16, p=.000			
Independent V=TMP	.4804	.0294	.4225 to .5382
Path a: Dep V=KLP			
R^2=.30, F (1,653) =284.66 p=.0000			
Indep V=TMP	.5927	.0351	.5237 to .6617
Path b & c^- DepV=OAX			
R^2=.46, F (2,652) =277.65, p=.000			
Indep V =TMP (c^-)	.2371	.0308	.1766 to .2975
Indep V =KLP (b)	.4105	.0268	.3543 to .4667
Total=(a*b)	.2725	.0204	.2323 to .3125

Figure:2 *Simple mediation model (Tmp-KMP-Aox)*



$.23^{***}$ (.48***)
Note: *** p<.001
Simple Mediation Model TMP-KMP-AOX

Practical Application of Parallel Multipeccation Approach of Mediator Model.

Table 3 (in appendix) and Fig 3 describe parallel multiple model using 2 mediators (m1/KA, m2/KT) and TMP and AOX as independent and dependent variables as follows, a1=.5311; a2=.5285; c/=.2661; c=.5381; b1=.1809;b2=.3329.

The "indirect effects" are:

m1=i of m1+a1x+e..... Eq1; KA/m1=3.1+.5311x

m2=i of m2+a2 x+e..... Eq2; KT/m2=5.6+.5285x

The "direct and indirect effects" is y=i of y+ c/x +b1 m1 +b2 m2 + e...Eq3;y=1.01 +.2661x +.1809m1 +.3329m2

Surgery total effect: y= i of y + c x +e.... Eq4; or y=1.54+=.5381x

Minimal variation of KA/m1, KT/m2 is accounted by x (R2=.22, .28 respectively) but the combined effect of independent variable and all 3 mediators has produced a significant improvement in difference R2=.48. The specific indirect effect is conceived in the sense that the difference that two cases, having a one-unit variability in respect to independent variable, make to variable of dependent variability, using the intervening variable as independent of other mediating variables.

AOX specific indirect effects of TMP via m1/KA = a1b1 =.0961. Two cases that differ by one unit on the x/TMP are evaluated to change by.0961 pointing towards y/AOX with institution of m1/KA. One of the TMP second indirect effects on AOX is diverted through m 2/KT; a2b2 was estimated to be.1759. Two cases one unit different in x/TMP are predicted to be differentiated by.1759 units in y/AOX by institution of m2/KCP. The sum of all mediating paths is referred to as the total indirect effect of x on y. This is =.2661+.0961 +.1759=.5381. In this manner 2 cases differentiated by one unit on x/TMP mediated by combined actions of 3 mediators lead to a change of.5381 units in y/AOX. The c/=.2661 which is known as the direct effect measures influence of the operation of x/TMP on y/AOX regardless of the influence of concepts proposed as mediators.

The "total effect"

$c = c' + a_1b_1 + a_2b_2$

c=.2661+.0961 +.1759=.5381

Statistical Inference for the Paths

This inference on paths is being depicted by referring to table 3 (appendix), with reference to the statistical inference of paths as presented in fig 3. The "Direct Effect": c/=.2661, t (653) =16.3, p=.0001. Hence, the path c/ is important as having a 95% confidence interval (.0701 to .2059) that shows the importance of TMP on AOX when all three mediators are held constant is important. "Total effect": is represented by c in y=i+cx. c is the coefficient of x and is c=.4648; p=.0000 and with a 95% confidence interval (.4225 to.5382).

Specific Indirect Effects: Each specific indirect effect has many 5000 bootstrap estimates that are used to obtain end points of the confidence interval. When 0 is found not within the confidence interval of a given path ab then display that path ab is not equal to 0 with confidence and when 0 is found in the confidence interval then it is known that there is no enough evidence that x causes y by way of m. Bootstrap confidence interval backs up the observation with a minimum of 95 percent confidences that antecedent/TMP indirectly affects outcome/AOX via mediating variables m1/KA (.0428 to.1319); m2/KCP (.1091 to.2053) since all two confidence intervals take the value of 0. Thus H4a, H4b are all accepted

Insert table 3 given in appendix 1 here.

Pairwise Comparisons between Specific Indirect Effects

In this part there is a discussion on whether, the a1b1 is stronger or a2b2 or the specific indirect effects of the proposed mediators are entirely different. When the confidence interval of the contrasts, is non zero, then it provides the grant that the two of the indirect effects or mediating mechanisms are statistically different between them. Where a confidence interval is a two-sided interval in which the value is zero one would say that the two indirect effects or respective intervening mechanisms are not statistically different. On the approximation of the power of which a specific indirect effect and which mediator is the superior, point estimates are obtained of both specific indirect effects. The larger of the two in absolute value is better in effect than the other.

Considering contrast1/C1= a1b1- a2b2, (-.0713) zero which in confidence interval (-.1526 to.0140) = 0 hence they are not significantly different.

Parallel Multiple media tor model Total indirect effect: In parallel multiple media tor model the total indirect effect is the summation of specific indirect effect. Interaction between 2 mediating variables shown as the total indirect effect of independent variable on dependent variable is .5513x.1570=.0858+.1570=.2428.

Secondly we can say we have 95 percent confidence that there is an indirect effect between the precursor variable and the outcome variable with 2 intermediates, is in the range of.2040 to.2834. Such a confidence interval is larger than zero, helpful in the fact that the two predicting variables can mediate the outcome of independent variable to the dependent variable collaboratively.

Figure: 3

Parallel Multiple Mediator Model TMP-m1, m2, -AOX

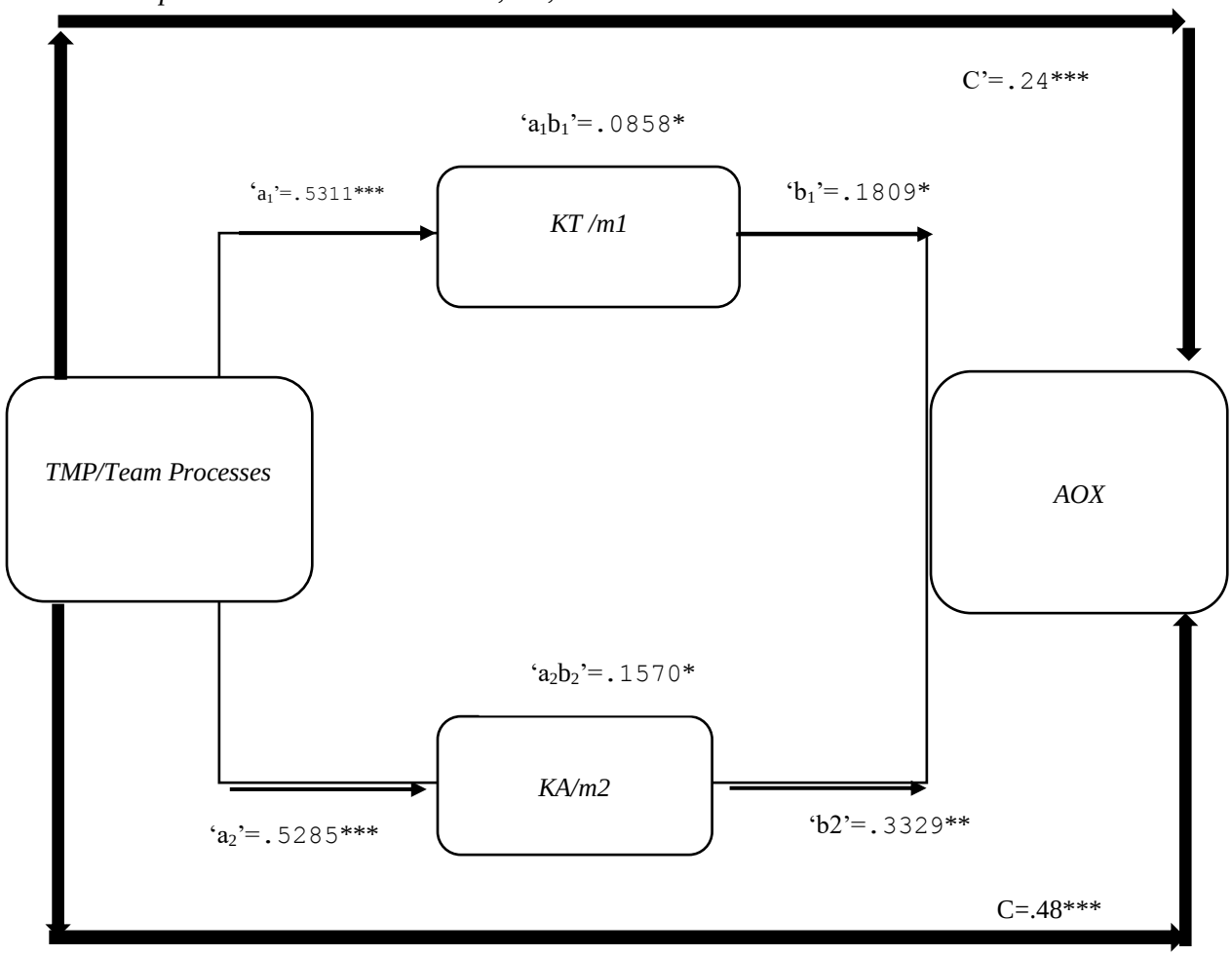


Fig 3: Parallel Multiple Mediator Model. Note. *p <.05, **p < .01, ***p < .001.

Table: 4

Point Estimates and Confidence intervals for TMP—KMP—AOX

mediation pathway	point estimate	se	bc 95% c.i	
			lower	upper
Indirect Effects				
Total	.2428	.0201	.2040	.2834
KA	.0858	.0227	.0428	.1319

KT	.1570	.0243	.1091	.2053
Contrasts				
C1=KA-KT	-.0713	.0425	-.1526	.0140

CONCLUSION AND LIMITATIONS

This studies worried use of easy and parallel a couple of mediator fashions only. Future research need to additionally validate object loadings on elements through confirmatory aspect evaluation as a manner of setting up reliability and validity (Hair et al., 2009; Mahmood, Qureshi, and Hadi, 2019; Mahmood and Hadi, 2020; Mahmood et al., 2024). In accordance with the guidelines that Hayes (2018) made, the parallel a couple of mediator version became carried out as an addition to a easy mediation version. The easy mediation version is used to check the speculation that a unmarried mediator passes at the effect of an antecedent to a consequent variable, for this reason explaining the technique that befell at the back of the scenes. Nevertheless, in conditions wherein there are more than one mediators (or maybe wherein a unmarried mediator has more than one components), the parallel more than one mediator version is a higher fit, because it permits evaluating the relative energy of mediating consequences. In the case being investigated, the similarly extension of Model four enabled the invention of the mediating results of every issue withinside the mixed mediator and the choice of the maximum good sized one. In addition to those fashions, conditional system evaluation offers an array of mediation and moderation designs which can be in addition superior with the aid of using bootstrapping self assurance periods to have a dependable estimate.

Moreover, the paper additionally applied open structures theory (Boulding, 1956; Checkland, 1994; Checkland and Scholes, 1999; Johnson et al., 1964; Robbins and Coulter, 2018; Rothwell and Kazanas, 2011) to recognise the input-output methods of organizational structures, which turned into proved right here with the aid of using the conditional system evaluation Model four. To this end, we advise destiny research of intervening mechanisms among unbiased and based variables the use of easy and parallel a couple of mediation fashions withinside the context of conditional system evaluation.

Above all, this take a look at legitimized the partly mediating results of know-how control strategies in facilitating ambidextrous innovation withinside the group procedures withinside the information-primarily based totally IT region in Pakistan. It is likewise pressing that destiny research have to significantly inspect numerous sorts of understanding control, information creation, and mastering, in particular, intuitive procedures (Mahmood and Hadi, 2020), to decide their capability to emerge as an important facilitator of organizational ambidexterity. These research want to recall unique antecedents to illustrate the dynamical interplay of those procedures to coordinate ambidextrous consequences (Mahmood, Qureshi, and Hadi, 2019; Mahmood et al., 2024). These research are regular with key research which have targeted on searching at mediating mechanisms underlying ambidextrously designed improvements withinside the context of various antecedents (Birkinshaw and Gupta, 2013; Junni et al., 2013; O'Reilly and Tushman, 2011, 2013). It is suggested that destiny research must discover opportunity styles of expertise and gaining knowledge of techniques in attaining ambidextrous innovation in different industries and countries deliberating the contextual variations so one can similarly substantiate and generalize the findings of the cutting-edge observe.

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APPENDIX 1

Table.3. Regression coefficients, Standard errors, & Model Summary Information for Parallel Multiple Mediator Model

	M_1(KA)				**M_2(KT)**				**Y(AOX)**				**Y(AOX)**			
Antecedents		**Coef**		**P**		**Coef**		**P**		**Coef**		**P**		**Coef**		**P**
X(TMP)	a_1	.5285		.0000	a_2	.5916		.0000	$c^{/}$	.2375		.0001	c	.5381		.0000
M_1(KA)									b_1	.0472		.0000				
M_2(KT)									b_2	.0537		.0000				
Constant	I_{m1}	3.0834		.0000	i_{m2}	5.6299		.0000	i_y	1.0193		.0000	i_y	1.4671		.0000
	R^2=.28; F(1,653)=256.6050; p<.001				R^2=.28; F=(1,653)=253.0838; p<.001				R^2=.46; F(1,651)=184.8816 p<.001				R^2=.29; F(1,653)=266.1679;p<.001			