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Mediation of Entrepreneurial Orientation in Relationship of Entrepreneurial Personality Characteristics with Entrepreneurial Intentions

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Abstract

To examine mediation of entrepreneurial orientation replacing networking orientation in the relationship of entrepreneurial personality characteristics and intentions employing structural equation modeling using Smart PLS instead of IBM-SPSS Amos in prior research of mediation through networking orientation (Maitlo, Memon, & Kumar 2020). Results drawn from collected data of 250 shopkeepers of Shikarpur, Sukkur, and Khairpur Sindh reflect the shrinking of relationships at the frictional level. From a total of twelve hypotheses, only two hypotheses of direct relationship are supported remaining four direct and six indirect hypotheses are not supported. Instead in previous research employing IBM-SPSS Amos in SEM and networking orientation provided support in four direct hypotheses and two indirect hypotheses contrary to the results drawn in this research.

Keywords: Entrepreneurial Intentions (EI), Entrepreneurship, Personality Characteristics, Mediation, Locus of Control (LoC), Risk-Taking (RT), Entrepreneurial Orientation (EO) SEM using Smart PLS

Introduction

Post Covid-19 and prior Covid-19, worldwide attention and interest in entrepreneurship has made this an attractive area for researchers and academicians because of its higher contribution to economic growth and development (Gu, Wang, Hua, & Liu, 2021; Barba-Sánchez, & Atienza-Sahuquillo, 2018). An individual who is taking the risk for his own by pursuing an idea or opportunity and putting those useful ideas into practice is called an entrepreneur (Barringer and Ireland 2008; Maitlo, Mirani, Mahar and Memon, 2021). The focus of the study is on the entrepreneurial personality characteristics, eventually leading towards EI through the support of the EO by replacing networking orientation (Maitlo, Memon, & Kumar 2020). Social, psychological, and demographic characteristics influence an individual's capacity to be an entrepreneur (Dollinger 1995). Need for achievement, locus of control, and risk-taking propensity is "Big Three" characteristics of entrepreneurs (Chell 2008). These have played a positive role in the entrepreneurial success (Fine, Meng, Feldman, & Nevo, 2012). Likewise, numerous studies emphasized on these entrepreneurial characteristics (Sahputra, & Berlianto, 2021; Maitlo, Memon, & Kumar 2020; Westhead, & Solesvik, 2016; Sahputra, & Berlianto, 2021).

Entrepreneurial intention is a psychological motivation that makes it possible to work for him instead to work for someone else (Barba-Sánchez, & Atienza-Sahuquillo, 2018). Not only this, but it is an intellectual depiction of activities to be employed by individuals, (Kusmintarti, Thoyib, Ashar, & Maskie, 2014). It is confirmed that EI is influenced directly and indirectly by performance, personality characteristics, entrepreneurial orientation, networking orientation, etc. in different contexts and settings (Nasip, Amirul, Sondoh & Tanakinjal, 2017; Gelaidan, & Abdullateef, 2017; Scafarto, Poggesi, & Mari, 2019; Syed, Butler, Smith, & Cao, 2020). Moreover, entrepreneurial action is taken as a planned behavior; commonly referred to as an intention that is mostly influenced by attitudes (Barba-Sánchez, & Atienza-Sahuquillo, 2018; Ajzen, 1991). While the personality characteristics of an entrepreneur have been examined over the last decades and psychological characteristics have been considered as possible sources for entrepreneurial performance. This study focused on the personal characteristics of an entrepreneur mediated with entrepreneurial orientation to

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discover the association between the personal characteristics of an entrepreneur and its intentions to open or continue an existing business in the context of selected rural areas of Sindh, Pakistan.

Entrepreneurship

It is adapted from the French meaning "the one who undertakes" (Maitlo, Mirani, Mahar, & Memon, 2021). Entrepreneurship is a technique to drive economic well-being as it creates employment, innovation, local production. On the contrary, it discourages imports to control the balance of payment deficit (Stoica, Roman, & Rusu, 2020). However, there is always a search for new ways for exploitation of new activities involved in creating and developing a new venture (Maitlo, Memon, & Shaikh, 2020; Maitlo, Mirani, Mahar, and Memon, 2021; Cooper, 2017). The personality characteristics of entrepreneurship are the tendency of risk-taking, innovativeness, motivation for achievement, self-confidence, responsibility, hardworking, tolerance, achievement orientation, dominance, locus of control, and self-efficacy (Zhang, & Zhang, 2013).

Locus of Control is a notion of attribution theory relating individuals' beliefs about controls that individuals have over events and outcomes of their behavior (Kobayashi & Farrington, 2020). Research about the success of entrepreneurship is more associated with an internal locus of control as compared to external LoC (Dharani, & April, nd). Internal locus of control dependence upon efforts invested instead of luck or fate and external locus of control is dependent upon fate or luck (WARDANA, HANDAYATI, NARMADITYA, WIBOWO, PATMA, & SUPRAJAN, 2020). **The need for achievement** is the thirst for excellence, success, and achievement in competitive situations (Qazi, Qureshi, Raza, Khan, & Qureshi, 2020). It is a condition in which someone wishes to be superior or to succeed in a competitive situation WARDANA, HANDAYATI, NARMADITYA, WIBOWO, PATMA, & SUPRAJAN, 2020). The individual backed by the need for achievement is contributing rapidly to economic growth with the help of making entrepreneurial opportunities (Jelilov, & Onder, 2016). In entrepreneurial education for increasing entrepreneurial skills the moderate effect of need for achievement has been observed (Din, Anuar, & Usman, 2016). **Risk-taking propensity** is an individual's tendency to assume a certain level of risk associated with his business venture, especially when making business decisions (Chipeta, & Surujlal, 2017). Indecision makers' prospective risk-taking is the variability in outcomes holding other factors constant (Zhang, Highhouse, & Nye, 2019). RT propensity is associated certainly with EI (Ozaralli, & Rivenburgh, 2016). **Self Confidence** is an approach of self that feels appropriate, comfortable with himself from others judgment along with strong beliefs (Yusuf, 2020). It is the potential to handle events and execute those in life (Chatterjee, & Das, 2015). Successful entrepreneurs are influenced strongly by their self-confidence (Zuwirda, Firman, Yusuf, & Gusril, 2020). Not only are this but entrepreneurial intentions are also strongly influenced by self-confidence (Garaika, Margahana, & Negara, 2019). **Tolerance to ambiguity** is a capacity to endure uncertainty revealed in ways an individual responds to ambiguous and hostile situations (Anwar, & Saleem, 2019). In short, it is defined as the tendency to perceive the ambiguous situation as desirable, so entrepreneurs must undertake unknown situations willingly manage uncertainty, and face risk (Samydevan, Mohd Amin, & Piaralal, 2020). The high degree of tolerance to ambiguity has influenced positively and significantly on attitude towards entrepreneurship (Mahmood, Al Mamun, & Ibrahim, 2020). **Innovativeness** is achieved when an individual has the determination to offer products of superior quality using up-to-date manufacturing methods (Anwar, & Saleem, 2019). Entrepreneurial success is measured by the potential to innovate by leading new technology in products (Mohanty, 2015; Maitlo, Memon, & Kumar 2020). It is inherent in individuals and organizations especially in those which are full of imaginative and novel ideas and can unite those concepts with available possessions to create further values (Samydevan, Mohd Amin, & Piaralal, 2020). Evidence from literature provides that innovativeness has remained a positive predictor of entrepreneurial attitude and entrepreneurial intentions (Mahmood, Al Mamun, & Ibrahim, 2020).

Entrepreneurial Intentions

The generic definition of the word intentions provided by Ajzen is "indication of an individual's willingness to adopt a behavior". In an entrepreneurial context, entrepreneurial intentions are generally defined as a state of mind that directs a person's attention, involvement, goal settings, actions, commitments, communications, organization, and kind of tasks for enhancement of entrepreneurial behavior. Entrepreneurial intentions relationship with personality characteristics has been confirmed in previous studies mainly in the meta-analysis (Liñán, & Fayolle, 2015). A positive

and significant relationship is determined between social entrepreneurial intentions and an individual's proactive personality (Bazan, Gaultois, Shaikh, Gillespie, Frederick, Amjad, & Belal, 2020). Finally, the entrepreneurial intentions are determined in a positive and significant association with most personality characteristics in directly and indirectly (Maitlo, Memon, & Kumar, 2020).

Entrepreneurial Orientation

Entrepreneurial orientation is referred to as a process to prepare an approach that facilitates the discovery of innovative market prospects (Ali, Hilman, & Gorondutse, 2020). In an uncertain and vibrant environment, greater risk levels and EO enhance firm performance in association with robust business and social linkages (Tajeddini, Martin, & Ali, 2020). Similarly, entrepreneurial attitude orientation and EI when mediated by psychological capital, positive but partial mediation effects were observed (Mahfud, Triyono, Sudira, & Mulyani, 2020).

Literature Review and Hypothesis Development

LoC and EI

Locus of Control (LoC) is an important determinant of venture creation (Vodă, & Florea, 2019). Empirically, LoC is used as a moderator in the relationship between entrepreneurial education and entrepreneurial intentions. It has a direct positive outcome on EI of Higher Education Institutions level students (Hsiung, 2018). A study of 205 Indonesian wound care clinics has shown that there exists an indirect influence of LoC on the EI of nurses (Sahputra, & Berlianto, 2021). In addition, LoC determined the significant and positive influence on entrepreneurial intentions when mediated through networking orientation in small-scale business professionals (Maitlo, Memon, & Kumar 2020). Whereas; LoC did not support entrepreneurial intentions in a study conducted by North Borneo, Malaysian students (Nasip, Amirul, Sondoh & Tanakinjal, 2017). In anticipation of the above discussion following hypotheses are drawn.

H1A: LoC has a positive influence on EI.

H1B: EO influence significantly in the relationship of *LoC and EI.*

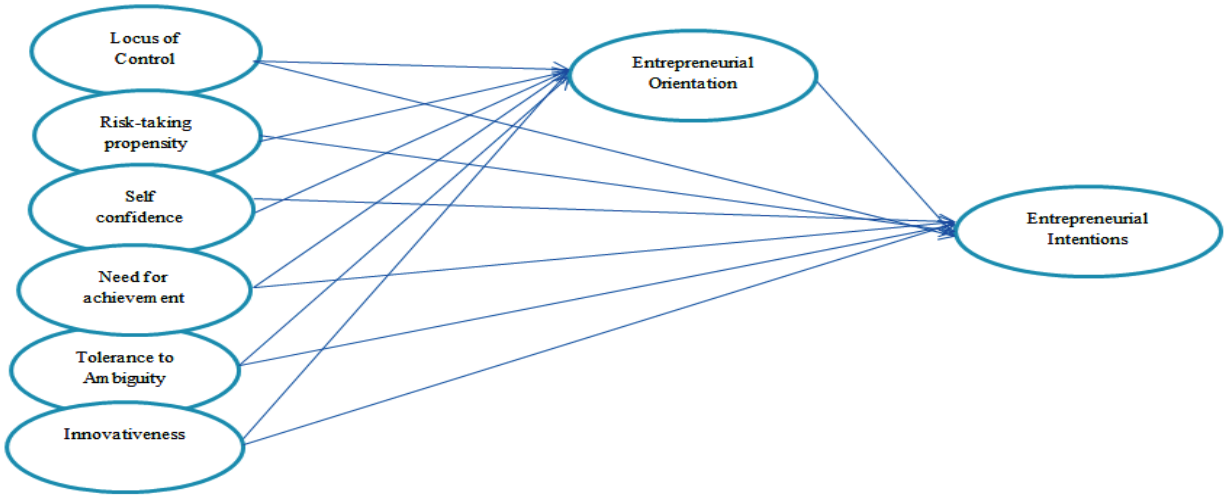
Risk-taking propensity and EI

RT propensity and LoC showed indirect influence in a study of 205 Indonesian wound care clinics to decisions for their nursing business (Sahputra & Berlianto, 2021). The risk-taking propensity determined a significant and positive influence on EI when mediated through networking orientation in small-scale business professionals (Maitlo, Memon, & Kumar 2020). Risk-taking propensity in addition to attitude when tested with social entrepreneurial intentions showed a unique contribution as compared to attitude (Chipeta, & Surujlal, 2017). It also showed an affirmative and substantial influence on EI mediating through attitude on the sample of bachelor students of economics and management (Scafarto, Poggesi, & Mari, 2019). In this connection, the following hypotheses can be drawn to test the relationship of RT with EI.

H2A: RT propensity has a positive influence on EI

H2B: EO influence significantly in the relationship of RT propensity and EI.

Figure 1: Conceptual Framework based on mediation



(Dinis, do Paco, Ferreira, Raposo, & Gouveia Rodrigues, 2013; Ebbers, 2014; Maitlo, Memon, & Kumar 2020)

Self Confidence and EI

Self-confidence determined a significant but negative influence on EI when mediated through networking orientation in small-scale business professionals (Maitlo, Memon, & Kumar, 2020). Self-confidence showed an affirmative and substantial influence on EI in association with self-efficacy and self-personality in young entrepreneurs (Garaika, Margahana, & Negara, 2019). In examining the influence of personality characteristics among University students, self-confidence has shown strong support to entrepreneurial intentions (Nasip, Amirul, Sondoh & Tanakinjal, 2017). But when self-confidence was used as a moderating variable among the relationship of educational support, relational support, and entrepreneurial intentions, it provided insignificant results in the study of business students (Gelaidan, & Abdullateef, 2017). Considering the support of self-confidence to entrepreneurial intention following hypotheses can be drawn.

H3A: **S**elf-confidence has a positive influence on entrepreneurial intentions

H3B: EO influence significantly in the relationship of self-confidence on entrepreneurial intentions.

NA and EI

Need for achievement when tested along with locus of control, found an important determinant for venture creation in male students as compared to female students (Vodă, & Florea, 2019). The influence of NA along with LoC on EI has been supported in revealing the influence of entrepreneurial personality traits and EI in students of four Universities from the capital city of Pakistan (Farrukh, Alzubi, Shahzad, Waheed, & Kanwal, 2018). NA not only plays a significant role in the formation of entrepreneurial intentions but it also has determined a positive significant influence on green entrepreneurship intentions of students at the university level (Qazi, Qureshi, Raza, Khan, & Qureshi, 2020). In small-scale businesses, NA determined substantial and affirmative influence on EI when mediated through networking orientation (Maitlo, Memon, & Kumar 2020). Hence to determine the influence of NA at small-scale businesses following hypotheses are drawn.

H4A: NA has a significant influence on EI

H4B EO influence significantly in the relationship of need for achievement on entrepreneurial intentions

Influence of tolerance for ambiguity on entrepreneurial intentions (EI ← TA) and its mediation by entrepreneurial orientation (EI ← EO ← TA)

The tolerance to ambiguity determined a significant but negative influence on entrepreneurial intentions when mediated through networking orientation in small-scale business professionals (Maitlo, Memon, & Kumar 2020). Tolerance to ambiguity including all psychological traits experienced above 36% significant impact on entrepreneurial intentions within university students of Egypt (Sharaf, El-Gharbawy, & Ragheb, 2018). Relationship of tolerance to ambiguity with entrepreneurial intentions if mediated by innovativeness, substantial increase determined at a significant level (Embi, Jaiyeoba, & Yussof, 2019).

H5A: Tolerance for ambiguity has a significant influence on entrepreneurial intentions

H5B: EO influence significantly in the relationship of tolerance for ambiguity on entrepreneurial intentions

Influence of Innovativeness on entrepreneurial intentions (EI ← IN) and its mediation by entrepreneurial orientation (EI ← EO ← IN)

In small-scale businesses, innovativeness determined a significant and positive influence on entrepreneurial intentions when mediated through networking orientation (Maitlo, Memon, & Kumar 2020). Innovativeness as compared to curiosity moderately mediates the relationship of passion to entrepreneurial intentions (Syed, Butler, Smith, & Cao, 2020). Not only has this but innovativeness has been proven one of the critical factors within a certain group of undergraduate students (Wathanakom, Khlaisang, & Songkram, 2020). In examining the moderating role of innovativeness in the relationship between entrepreneurial education and students' EI, the significant connectivity and influence determined of both entrepreneurial education and innovativeness over students entrepreneurial intentions (Abubakar, & Yazeed, 2018). Hence based on the above discussion following hypotheses are proposed

H6A: Innovativeness has a significant influence on entrepreneurial intentions

H6B: EO influence significantly in the relationship of innovativeness on entrepreneurial intentions

Research Methodology

The cross-sectional quantitative study based on a non-probability convenience sampling technique was employed to conduct this study as its best, because of time limitation (Lavrakas, 2008). For data collection, a paper-based questionnaire survey was conducted from November 2018 to March 2019 from shopkeepers not having more than five employees, in three cities of North Sindh namely; Khairpur Mir's, Shikarpur, and Sukkur. The non-probability sampling based on the convenience method was tailored to distribute 500 translated versions of survey questionnaires to avoid any kind of language barrier and get appropriate responses from the respondents. As a result, the final usable responses received are 250 and the response rate remained 50%. The survey questionnaire consumed for this study was based on the previously established scale of 36 items on entrepreneurial intention and psychological characteristics (Dinis et.al, 2013; Liñán, & Chen, 2009) and the nine-item scale of entrepreneurial orientation (Mahmood, & Hanafi, 2013). Further scale is self-administered by the researcher and translated in local languages i.e. Sindhi and Urdu for the understanding of local respondents who don't know English. The translation of questionnaires did with help of a language specialist to keep the scale reliable and valid.

Analysis and Results

Respondents Profile

The descriptive data (see Table 1) comprises individual and categorical information of five criteria i.e. gender, age, education, experience, and location. According to descriptive results total, of 250 respondents out of which 232 nearly 92.8% are male and only 18 nearly 7.2% are female. The quantity of female respondents is very small because of cultural limitations and limited female entrepreneurs in Pakistani society; even these female respondents' data were collected with high effort. These females are the owners of beauty parlors female dress designers etc. Further details about the remaining criteria are given in table 1; this data is the same used in a previous research paper (Maitlo, Memon, & Kumar 2020).

Table 1

Category	Profile	Total Number	(%)
Gender	Male	232	92.8
	Female	18	7.2
Age	Up to 25	16	6.4
	26 –35	72	28.8
	36 – 45	80	32.0
	46 – 55	57	22.8
	Above 55	25	10.0
Educational Level	No Education	08	3.2
	Intermediate or less	71	28.4
	Bachelors	93	37.2
	Masters	68	27.2
	MPhil/PhD	10	4.00
Experience in years	02 or less	11	4.4
	04	12	4.8
	06	27	10.8
	08	60	24.0
	10	74	29.6
	12 or above	66	26.4
Location	Khair Pur	85	34.0
	Shikarpur	69	27.6
	Sukkur	96	38.4

Reliability and Convergent Validity

PLS (Partial least square) method applied to get reliability and convergent validity of model (Ringle, Wende, & Will, 2005). Reliability is the internal dependability of an analytical procedure and validity is the precision in findings, accurately reflecting the data or extent to which concept is accurately measured (Noble, & Smith, 2015; Heale, & Twycross, 2015). Alternatively, convergent validity is the extent to which diverse measures, measuring the same construct correlate with each other (Cunningham, Preacher, & Banaji, 2001; Knight, 1997). Usually, the threshold of reliability (Cronbach's Alpha) for the newly developed measure is 0.70 (Dinis et.al, 2013). But the proposed

standard of reliability to support the research conclusion varies in acceptability from 0.80 to 0.70 and minimum to 0.50 (Gugiu, & Gugiu, 2018). But the threshold of 0.70 is a widely used criterion for Cronbach's Alpha. (Davis, Hall, & Mayer, 2016; Lyons, Lynn, & Mac an Bhaird 2015; Dinis, Paco, Ferreira, Raposo, & Gouveia Rodrigues, 2013). 0.6 or above is considered as an acceptable value for reliability (Mahmood, & Hanafi, 2013). Along with reliability, other criteria are also used for decision-making (Gugiu, & Gugiu, 2018). Composite reliability and Cronbach's alpha value 0.80 represents strong consistency, 0.70 represents acceptable but the value of 0.60 is suitable for exploratory research (Galindo-Martín, Castaño-Martínez, & Méndez-Picazo, 2019). Most of the constructs' results are falling in threshold as shown in below table 02.

Table 2: Cronbach Alpha, Composite Reliability, Average Variance Extracted (AVE)

Dimensions	Cronbach – α	Composite Reliability (CR)	Average Variance Extracted (AVE)
Edge	≥ 0.7	≥ 0.7	≥ 0.5
Locus of control	0.647	0.762	0.324
Propensity to take risk	0.672	0.783	0.380
Self confidence	0.737	0.813	0.422
Need for achievement	0.635	0.759	0.350
Tolerance to ambiguity	0.692	0.794	0.397
Innovativeness	0.651	0.780	0.416
Entrepreneurial Orientation	0.717	0.793	0.302
Entrepreneurial Intentions	0.829	0.876	0.544

The average variance extracted shown in below table 03, is that factors must explain more than half the variance of their respective indicators and its value acceptable level is 0.50, value below this demonstration that error variance is greater than the explained variance (Galindo-Martín, Castaño-Martínez, & Méndez-Picazo, 2019). Except entrepreneurial intentions construct other all constructs are falling in the range of 0.30 to 0.42, showing the error variance is greater than explained variance but based on composite reliability and Cronbach's scale is applicable for researching gathered data.

Measurement of discriminate validity confirms the uniqueness of each construct in measure and captures a phenomenon other constructs do not represent in a statistical model (Franke, & Sarstedt, 2019; Henseler, Ringle, & Sarstedt, 2015). Table 03 provides the correlation results that are weak and intermediate at a significant level i.e. $P < 0.05$ (Gefen, & Straub, 2005).

Table 3: Discriminate Validity and significance level

	EI	EO	IN	LC	NA	PR	SC	TA	P Value
EI	0.738								0.000
EO	0.321	0.550							0.000
IN	0.376	0.386	0.645						0.000
LC	0.611	0.252	0.269	0.569					0.000
NA	0.451	0.340	0.415	0.411	0.591				0.000
PR	0.441	0.323	0.359	0.404	0.465	0.617			0.000
SC	0.380	0.291	0.348	0.424	0.509	0.617	0.649		0.000
TA	0.340	0.332	0.571	0.367	0.511	0.402	0.419	0.630	0.000

HTMT - A New Criterion to Assess Discriminant Validity

The heterotrait-monotrait ratio of correlations is a technique to evaluate discriminant validity in PLS-SEM (Franke, & Sarstedt, 2019). If discriminant validity is not proven, it cannot be assured that the outcomes endorsing hypothesized structural paths are factual, or whether they are only the result of statistical discrepancies. The HTMT is the comprehensive and controlled approach to discriminate validity assessment for researchers in PLS-SEM (Franke, & Sarstedt, 2019; Dijkstra, & Henseler, 2015).

Table 04 shows there exists a weak correlation among constructs and it is not too strong because it is below 0.70 except few i.e. EI: LC, NA: PR, CS: NA, NA: TA, TA: IN and SC: PR, so will be counted as normal which does not disturb the validity of a measure, because only six relationships between constructs appear in strong correlation out of 28 all relations.

Table 4: HTMT

	EI	EO	IN	LC	NA	PR	SC	TA
EI								
EO	0.375							
IN	0.490	0.543						
LC	0.774	0.398	0.421					
NA	0.572	0.455	0.606	0.612				
PR	0.569	0.435	0.551	0.629	0.707			
SC	0.446	0.377	0.497	0.613	0.714	0.888		
TA	0.422	0.449	0.862	0.541	0.704	0.579	0.535	

Outer Loadings

Outer loadings show the association between items of latent variables and their observed indicators and their threshold acceptable value ranges from 0.40 to 0.70 or higher (Sarstedt, Ringle, & Hair, 2017; Hulland, 1999). As this study is exploratory because it the testing of mediating effect, acceptable value threshold of outer loading is 0.40 is considered here. Further to enhance the robustness of results delete the items having a value below 0.40 in outer loadings (Hair, Hult, Ringle, & Sarstedt, 2013). Similarly, the individual construct (indicator) reliability values are kept much larger than the minimum acceptable level of 0.40 and close to the preferred level of 0.70 (Wong, 2013). As shown in table 05 and figure 01, Outer loadings along with Cronbach's Alpha value, except EO_9 having a value of 0.377 all items are in the range above 0.40. The major reason for retaining this single EO_9 item is the reliability and validity of constructs in measure, it is not suffering too much the results of reliability and validity found adequate and acceptable to run this model.

Construct	Item Code	Outer loadings	Cronbach's alpha
Entrepreneurial Intention (EI)	EI_1	**0.773**	0.829
	EI_2	**0.770**	
	EI_3	**0.787**	
	EI_4	**0.801**	
	EI_5	**0.709**	
	EI_6	**0.559**	
Entrepreneurial Orientation (EO)	EO_1	**0.547**	0.717
	EO_2	**0.524**	
	EO_3	**0.575**	
	EO_4	**0.505**	
	EO_5	**0.546**	
	EO_6	**0.610**	
	EO_7	**0.643**	
	EO_8	**0.579**	
	EO_9	**0.377**	
Innovativeness (IN)	IN_1	**0.572**	0.651
	IN_2	**0.679**	
	IN_3	**0.609**	
	IN_4	**0.708**	
	IN_5	**0.650**	
Locus of Control (LC)	LC_1	**0.594**	0.647
	LC_2	**0.634**	
	LC_3	**0.626**	
	LC_4	**0.669**	
	LC_5	**0.546**	
	LC_6	**0.549**	
	LC_7	**0.272**	
Need for Achievement (NA)	NA_1	**0.727**	0.635
	NA_2	**0.455**	
	NA_3	**0.576**	
	NA_4	**0.576**	
	NA_5	**0.673**	
	NA_6	**0.497**	
Propensity to Take Risk (PR)	PR_1	**0.724**	0.672
	PR_2	**0.604**	
	PR_3	**0.672**	
	PR_4	**0.577**	
	PR_5	**0.632**	
	PR_6	**0.456**	
Self-Confidence (SC)	SC_1	**0.689**	0.737
	SC_2	**0.737**	
	SC_3	**0.634**	
	SC_4	**0.589**	
	SC_5	**0.647**	
	SC_6	**0.587**	
Tolerance to Ambiguity (TA)	TA_1	**0.754**	0.692
	TA_2	**0.640**	
	TA_3	**0.632**	
	TA_4	**0.641**	
	TA_5	**0.622**	
	TA_6	**0.451**	

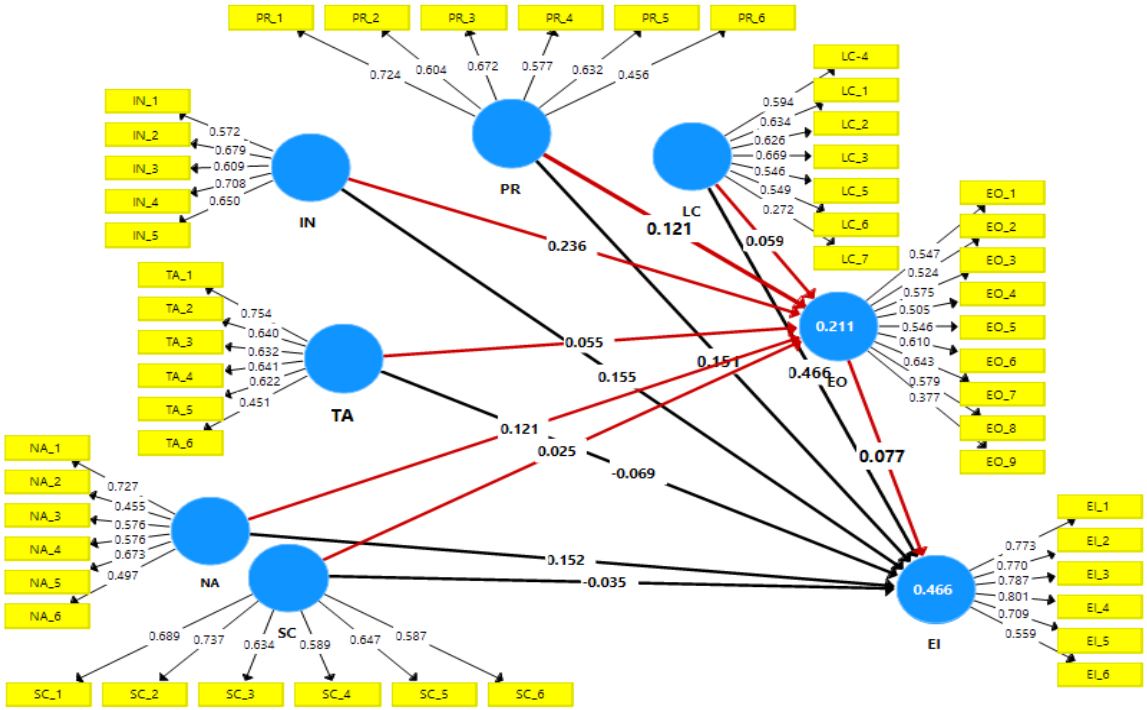


Figure 01: PLS algorithm total items outer loadings

Coefficient of determination (R^2)

Table 6: Coefficient of determination (R2)

	R Square	R Square Adjusted
EI	0.466	0.451
EO	0.211	0.192

Entrepreneurial Intention the main construct of a study showing results drawn from Smart PLS path model estimation in table 06 and figure 01, found the overall R^2 is moderate i.e. 0.466 because the threshold range of 0.25, 0.5, and 0.70 are often used to describe weak, moderate and strong coefficient of determination (Wong, 2013; Hair, Hult, Ringle, & Sarstedt, 2013). The R^2 value should be equal to or greater than 0.10 to achieve a minimum level of explanatory power (Nasip, Amirul, Sondoh & Tanakinjal, 2017). All the constructs including entrepreneurial orientation (mediating construct) explain 46.6% of the variance of the endogenous construct entrepreneurial intentions. The same model estimation also communicates the R^2 for another latent construct in which personality constructs are found to jointly explain 21.1% of entrepreneurial orientation's variance in this PLS-SEM model. But the interesting point here is that prior mediation as shown in figure 02 the personality constructs except for entrepreneurial orientation (mediating variable) determine the value of R^2 0.474 in relationship with entrepreneurial intentions. It shows that the entrepreneurial orientation successfully mediates the impact on entrepreneurial intentions because prior mediation there is more impact on entrepreneurial intentions. Because to prove mediation effect, regression coefficient associated with personality characteristics and entrepreneurial intention relationship shrinks or goes to zero when a mediator entrepreneurial orientation is added to the equation. If the effect goes to zero then mediation is called full but when it shrinks in the presence of a mediator then it will be partial mediation (Mahmood, & Hanafi, 2013).

That is the beauty of Smart PLS in determining mediation impact on a dependent variable by independent variables when mediated by any construct. If there had full mediation the regression shrinks to zero but here is partial mediation because the value shrinks to 46.6% from 47.4%.

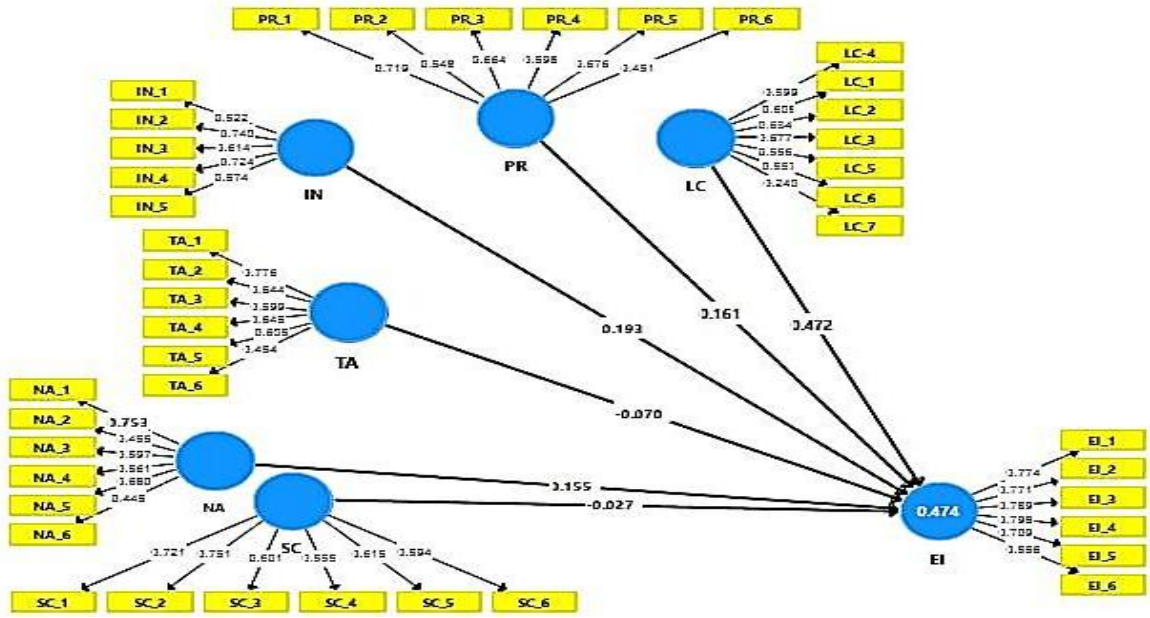


Figure 02: PLS algorithm without mediation.

Path Coefficients

To determine the relationship between constructs on Smart PLS, path coefficients and related T statistics through the PLS bootstrapping procedure is examined. The following results shown in figure 03 and table 07 are based on a two-tailed test with 1000 bootstrapping at P<0.05. The model is based on direct and indirect testing of influence over dependent variables by independent variables and mediating variables respectively. For the acceptance of hypothesis threshold of **P<, 0.05** and T value is above **1.96**. These paths are of personality characteristics with entrepreneurial intention and entrepreneurial orientation.

Table 7: Significance Testing Results of the Structural Model Path Coefficients

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
EO -> EI	0.077	0.074	0.061	1.266	**0.206**
IN -> EI	0.155	0.154	0.061	2.530	**0.012**
IN -> EO	0.236	0.239	0.082	2.897	**0.004**
LC -> EI	0.466	0.465	0.060	7.732	**0.000**
LC -> EO	0.059	0.061	0.078	0.756	**0.450**
NA -> EI	0.152	0.153	0.058	2.610	**0.009**
NA -> EO	0.121	0.130	0.073	1.645	**0.100**
PR -> EI	0.151	0.151	0.061	2.471	**0.014**
PR -> EO	0.121	0.115	0.079	1.531	**0.126**
SC -> EI	-0.035	-0.029	0.066	0.537	**0.592**
SC -> EO	0.025	0.041	0.076	0.335	**0.738**
TA -> EI	-0.069	-0.065	0.066	1.050	**0.294**
TA -> EO	0.055	0.063	0.088	0.622	**0.534**

The correlation coefficient between variables

To quantify the relationship between two or more random variables or observed data values is called correlation (Jiang, 2018). Table 08 provides the results of correlation coefficient among independent personality characteristics, mediating entrepreneurial orientation and dependent variables entrepreneurial intention along with significance level. The intermediate level of relationship at a significant level of P-value below 0.05 is achieved because the minimum level 0.252 between LC: EO and maximum level 0.617 between SC: PR is determined.

Table 8: Correlation and Significance Level

	EI	EO	IN	LC	NA	PR	SC	TA	P-Value
EI	**1**								**0.000**
EO	**0.321**	**1**							**0.000**
IN	**0.376**	**0.386**	**1**						**0.000**
LC	**0.611**	**0.252**	**0.269**	**1**					**0.000**
NA	**0.451**	**0.340**	**0.415**	**0.411**	**1**				**0.000**
PR	**0.441**	**0.323**	**0.359**	**0.404**	**0.465**	**1**			**0.000**
SC	**0.380**	**0.291**	**0.348**	**0.424**	**0.509**	**0.617**	**1**		**0.000**
TA	**0.340**	**0.332**	**0.571**	**0.367**	**0.511**	**0.402**	**0.419**	**1**	**0.000**

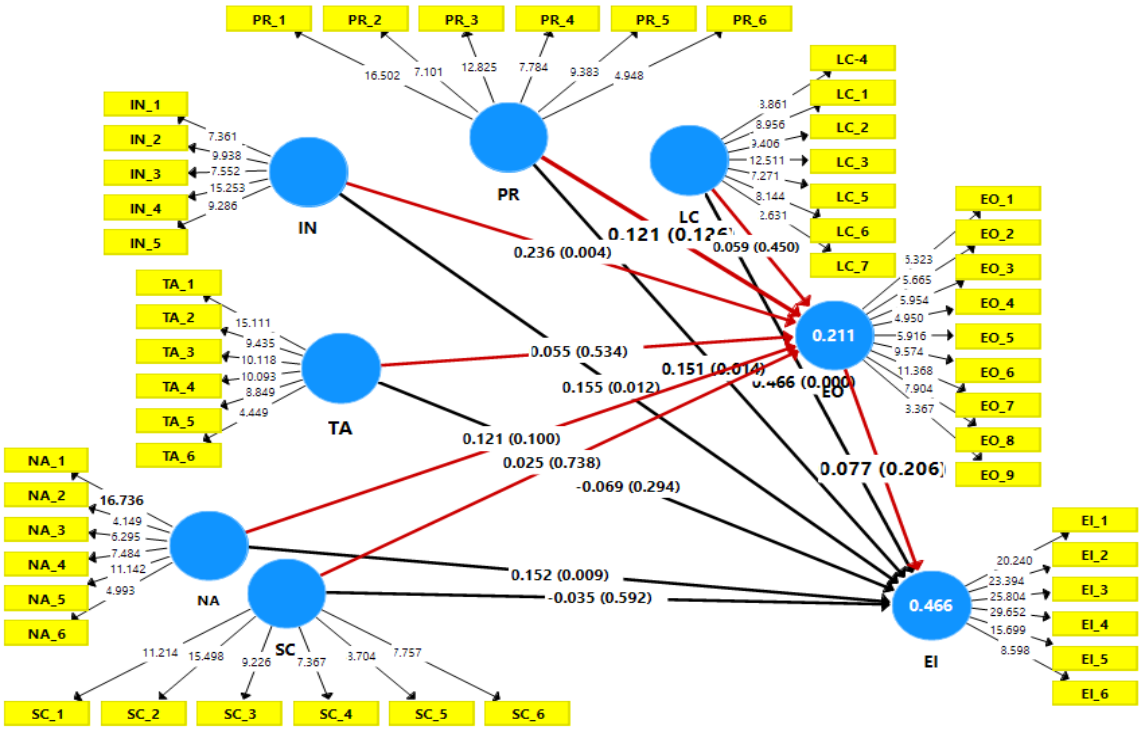


Figure 03: Path coefficient and significance level

Mediation Analysis

When an intermediate variable helps to explain how or why an independent variable influences the dependent variable is called a mediator (Gunzler, Chen, Wu, & Zhang, 2013). As explained above, in coefficient of determination that to prove mediation effect, regression coefficient associated with personality characteristics and entrepreneurial intention relationship shrinks or goes to zero when a mediator entrepreneurial orientation is added to the equation.

Table 09 shows the results of total effects providing the existence of a significant relationship between four independent variables innovativeness, LoC, NA, and propensity to RT with EI but a level of significance was not reached in the relationship between independent variable self-confidence and tolerance to ambiguity with the dependent variable. Table 10 shows the results of mediation by the specific indirect effect of these six independent variables on dependent variables through mediator entrepreneurial orientation. In all relationships of mediation, the significance level was not reached and did not show any mediation because there was only a frictional value change from 0.474 to 0.466.

Table 09: Total Direct Effect

	Original Sample (O)	Sample (M)	Mean	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
IN -> EI	.155	.154		.061	2.530	**.012**
LC -> EI	.466	.465		.060	7.732	**.000**

NA -> EI	.152	.153	.058	2.610	**.009**
PR -> EI	.151	.151	.061	2.471	**.014**
SC -> EI	-.035	-.029	.066	.537	**.592**
TA -> EI	-.069	-.065	.066	1.050	**.294**

Hypotheses Testing

H1A: LoC has a significant and positive influence on EI

First hypothesis H1A has been achieved of entrepreneurial intention is influenced by locus of control, because of positive and significant relationship at the **p**-value less than **0.05** along with **β** coefficient of **0.466** at **t-** value **7.732.** The same support is being received in previous studies in different contexts and different populations as mentioned in the conceptual framework (Farrukh, Alzubi, Shahzad, Waheed, & Kanwal, 2018; Hsiung, 2018).

Table 10: Specific Indirect Effects

	Original Sample (O)	**Sample Mean (M)**	**Standard Deviation (STDEV)**	**T Statistics (|O/STDEV|)**	**P Values**
TA -> EO -> EI	.004	.006	.010	.411	**.681**
LC -> EO -> EI	.004	.005	.009	.515	**.607**
IN -> EO -> EI	.018	.017	.016	1.138	**.255**
NA -> EO -> EI	.009	.010	.011	.868	**.385**
PR -> EO -> EI	.009	.008	.010	.914	**.361**
SC -> EO -> EI	.002	.002	.008	.253	**.800**

H1B: EO has a significant effect on the influence of LoC on EI

First hypothesis H1B has been not achieved of entrepreneurial intention is influenced by locus of control in mediation by entrepreneurial orientation, because of positive but insignificant relationship at the **p**-value above than **0.05** along with **β** coefficient of **0.004** at **t-** value 0**.515.** It was found contrary to the significant and positive influence on entrepreneurial intentions when mediated through networking orientation in small-scale business professionals (Maitlo, Memon, & Kumar 2020). But consistent in not showing support to entrepreneurial intentions in a study conducted from students in North Borneo, Malaysia (Nasip, Amirul, Sondoh & Tanakinjal, 2017).

H2A: RT propensity has a significant and positive influence on EI

The second hypothesis H2A has been achieved of entrepreneurial intention is influenced by RT propensity, because of positive and significant relationship at the **p**-value less than **0.05** along with **β** coefficient of **0.151** at **t-** value **2.471. I**t is found consistent when tested with social entrepreneurial intentions; it determined the most unique contribution as compared attitude (Chipeta, & Surujlal, 2017), and entrepreneurial intentions of students (Scafarto, Poggesi, & Mari, 2019).

H2B: EO has a significant effect on the influence of RT propensity on EI

Second hypothesis H2B has been not achieved of EI entrepreneurial intention is influenced by risk-taking propensity in mediation by entrepreneurial orientation, because of positive but insignificant relationship at the **p**-value above than **0.05** along with **β** coefficient of **0.009** at **t-** value **0.361.** It was found contrary to the significant and positive influence on entrepreneurial intentions when mediated through networking orientation in small-scale business professionals (Maitlo, Memon, & Kumar 2020). And determined indirect influence in a study of 205 Indonesian wound care clinics to a decision for their nursing business (Sahputra, & Berlianto, 2021).

H3A: **S**elf-confidence has a significant and positive influence on entrepreneurial intentions

Third hypothesis H3B has been not achieved of EI is influenced by self-confidence, because of negative and insignificant relationship at the **p**-value above than **0.05** along with **β** coefficient of **-0.035** at **t-** value **0.537.** The same is consistent with a significant but negative influence on entrepreneurial intentions when mediated through networking orientation in small-scale business professionals (Maitlo, Memon, & Kumar 2020). But contrary to the positive and substantial influence on EI in association with self-efficacy and self-personality in young entrepreneurs (Garaika, Margahana, & Negara, 2019; Nasip, Amirul, Sondoh & Tanakinjal, 2017)

H3B: Entrepreneurial orientation has a significant effect on the influence of self-confidence on entrepreneurial intentions

Third hypothesis H3B has been not achieved of entrepreneurial intention is influenced by self-confidence in mediation by entrepreneurial orientation, because of positive but insignificant relationship at the **p**-value above than **0.05** along with **β** coefficient of **0.002** at **t-** value **0.253.** The same has been found consistent when used as moderating variable among the relationship of educational support, relational support, and entrepreneurial intentions, it provided insignificant results in the study of business students (Gelaidan, & Abdullateef, 2017).

H4A: NA has a significant influence on EI

The fourth hypothesis H4A has been achieved of EI is influenced by NA, because of a positive and significant relationship at the **p**-value less than **0.05** along with **β** coefficient of **0.152** at **t-** value 2**.610.** This has been consistent when tested along with locus of control, found an important determinant for venture creation in male students as compared to female students (Vodă, & Florea, 2019; Farrukh, Alzubi, Shahzad, Waheed, & Kanwal, 2018; Maitlo, Memon, & Kumar 2020).

H4B: Entrepreneurial orientation has a significant effect on the influence of need for achievement on entrepreneurial intentions

Fourth hypothesis H4B has been not achieved of entrepreneurial intention is influenced by the need for achievement in mediation by entrepreneurial orientation, because of positive but insignificant relationship at the **p**-value above than **0.05** along with **β** coefficient of **0.009** at **t-** value **0.868.** It is found inconsistent with the mediation of networking orientation (Maitlo, Memon, & Kumar, 2020).

H5A: Tolerance for ambiguity has a significant influence on entrepreneurial intentions

Fifth hypothesis H5A has been not achieved of entrepreneurial intention is influenced by tolerance to ambiguity, because of negative and insignificant relationship at the **p**-value above than **0.05** along with **β** coefficient of **-0.069** at **t-** value 1**.050.** These results are consistent with negative but significant relationships in small sale business individuals (Maitlo, Memon, & Kumar 2020). Contrary to the results of tolerance to ambiguity including all psychological traits experienced above 36% significant impact on entrepreneurial intentions within university students of Egypt (Sharaf, El-Gharbawy, & Ragheb, 2018).

H5B: Entrepreneurial orientation has a significant effect on the influence of tolerance for ambiguity on entrepreneurial intentions

Fifth hypothesis H5B has been not achieved of entrepreneurial intention is influenced by tolerance to ambiguity in mediation by entrepreneurial orientation, because of positive but insignificant relationship at the p-value above than 0.05 along with β coefficient of 0.004 at t- value 0.411. The same has not been supported in a relationship with small sales business individuals (Maitlo, Memon, & Kumar 2020). Contrary Relationship of tolerance to ambiguity with entrepreneurial intentions if mediated by innovativeness, substantial increase determined at a significant level (Embi, Jaiyeoba, & Yussof, 2019).

H6A: Innovativeness has a significant influence on entrepreneurial intentions

Sixth hypothesis H6A has been achieved of entrepreneurial intention is influenced by innovativeness, because of positive and significant relationship at the p-value less than 0.05 along with β coefficient of 0.155 at t- value 2.530. Similarly, this has been supported in providing one of the critical factors within a certain group of undergraduate students (Wathanakom, Khlaisang, & Songkram, 2020). Also, the significant connectivity and influence determined of both entrepreneurial education and innovativeness over students entrepreneurial intentions (Abubakar, & Yazeed, 2018).

H6B: Entrepreneurial orientation has a significant effect on the influence of innovativeness on entrepreneurial intentions

Sixth hypothesis H6B has been not achieved of entrepreneurial intention is influenced by innovativeness in mediation by entrepreneurial orientation, because of positive but insignificant relationship at the p-value above than 0.05 along with β coefficient of 0.018 at t- value 1.138. This has been contrary to mediation by networking orientation in the relationship of innovativeness and entrepreneurial intention (Maitlo, Memon, & Kumar 2020). And Innovativeness as compared to curiosity partially mediates the relationship of passion to entrepreneurial intentions (Syed, Butler, Smith, & Cao, 2020).

Table 11: Hypothesis Testing Results based on H1A &B, H2A & B . . . . H6A & B

Hypothesis	Path	* β	**t-value	***p-value	Result
H1A	EI ← LC (Direct Model)	**0.466**	**7.732**	**0.000**	Supported
H1B	EI ← EO ←LC (Indirect Model)	**0.004**	**0.515**	**0.607**	Not-Supported
H2A	EI ← PR (Direct Model)	**0.151**	**2.471**	**0.014**	Supported
H2B	EI ← EO ←PR (Indirect Model)	**0.009**	**0.914**	**0.361**	Not-Supported
H3A	EI ← SC (Direct Model)	**-0.035**	**0.537**	**0.592**	Not-Supported
H3B	EI ← EO ←SC (Indirect Model)	**0.002**	**0.253**	**0.800**	Not-Supported
H4A	EI ← NA (Direct Model)	**0.152**	**2.610**	**0.009**	Supported
H4B	EI ← EO ←NA (Indirect Model)	**0.009**	**0.868**	**0.385**	Not-Supported
H5A	EI ← TA (Direct Model)	**-0.069**	**1.050**	**0.294**	Not-Supported
H5B	EI ← EO ←TA (Indirect Model)	**0.004**	**0.411**	**0.681**	Not-Supported
H6A	EI ← IN (Direct Model)	**0.155**	**2.530**	**0.012**	Supported
H6B	EI ← EO ←IN (Indirect Model	**0.018**	**1.138**	**0.255**	Not-Supported

* Beta Coefficient (β)
** $t \geq 1.96$
*** $p \leq 0.05$

Discussion

Based on the two-way purpose of study i.e. the direct relationship of personality characteristics with entrepreneurial intention and mediated relationship through entrepreneurial orientation the empirical results were found to be significant and positive in four independent variables but insignificant and negative in two independent variables i.e. self-confidence and tolerance to ambiguity with the dependent variable in a direct relationship, similar to previous study results (Maitlo, Memon, & Kumar 2020). But when this relationship is mediated by entrepreneurial orientation in an indirect relationship, none of the independent variables influenced significantly entrepreneurial intention (dependent variable). Similarly, literature also provided support of direct negative relationship influenced significantly by a propensity to take the risk, but the locus of control, tolerance to ambiguity, and innovativeness were not supported, only two independent variables need for achievement and self-confidence were supported (Dinis, do Paco, Ferreira, Raposo, & Gouveia Rodrigues, 2013). Further, when behavior and psychological approaches relationship applied simultaneously with entrepreneurial intentions, hypotheses of need for achievement are supported from psychological approach along with hypotheses of social norms and personal attitude from the behavioral approach. Contrary to results of this study in indirect influence, mediation of theory of planned behavior in the relationship of personality and contextual factors with EI, RT, NA, and LoC found strongly correlated with entrepreneurial intentions and this is consistent with past research that when personality traits are mediated with behavioral characteristics they have shown prediction of entrepreneurial intentions (Karimi, Biemans, Naderi Mahdei, Lans, Chizari, & Mulder, 2017; Maitlo, Memon, & Kumar 2020).

This study result shows that hypothesized relationship of self-confidence and tolerance to ambiguity with entrepreneurial intentions are negative and insignificant but when mediated by entrepreneurial orientation all indirect relationships appeared insignificant but positive, hence rejected B i.e. indirect part of all hypotheses because these were set as positive and significant along with two hypotheses of direct relationship. These mediation results are contrary to the previous study of mediation through networking orientation (Maitlo, Memon, & Kumar, 2020). Previous studies in this area identified that personality traits not only affect the probability of becoming an entrepreneur but also the entrepreneurial process (Caliendo, Fossen, & Kritikos, 2014). Most of the past studies have tested the simple relationship of entrepreneurial traits with different variables i.e. entrepreneurial intentions, entrepreneurial process, entrepreneurial orientation, etc. but the mediating relationship is limited to test the effect of personality traits (Karimi, Biemans, Naderi Mahdei, Lans, Chizari, & Mulder, 2017; Maitlo, Memon, & Kumar 2020; Caliendo, Fossen, & Kritikos, 2014; Dinis, do Paco, Ferreira, Raposo, & Gouveia Rodrigues, 2013; Ferreira, Raposo, Gouveia Rodrigues, Dinis, & do Paço, 2012). Finally, frictional mediation is determined in the relationship of entrepreneurial personality traits with entrepreneurial intentions by entrepreneurial orientation.

Certainly model complexity also matters, because six independent variables are concurrently tested with entrepreneurial intentions in the mediation of entrepreneurial orientation. This also

disturbs the fitness but the level of fitness is not far away from the threshold, so covering composite reliability, average variance extracted and outer loadings of data distribution the relationship testing is performed. Further, the context along with sample size matters, and these indices can be enhanced by improving sample size.

Conclusion and Recommendation

This research contributes a step forward in the field of entrepreneurship because by enhancing entrepreneurial orientation an entrepreneur can enhance his intentions of entrepreneurship based on his entrepreneurial personality characteristics. Countries instead of starting large-scale investments must focus on small-scale entrepreneurs to enhance economic performance. Pakistan is in dire need of entrepreneurship for its economic prosperity, because of lesser entrepreneurship activity than other developing countries in Asia and its world ranking 138 out of 189 countries in ease of doing business (Shabbir et.al; 2018). For researchers and policymakers, decision-makers this research recommends proactive measures in enhancing the potential of entrepreneurship in small-scale business individuals as well as initiators.

Limitations

Including general limitations of time, resources, and data collection the survey is conducted only from three cities of north Sindh i.e. Khairpur Mir's, Sukkur, and Shikarpur. Data used in this study is part of a previous publication that used a networking orientation scale instead of entrepreneurial orientation (Maitlo, Memon, & Kumar, 2020). Further, the use of convenient (non-probability) sampling for ease in reaching the sample is a potential limitation that can be avoided in future studies.

Future Directions

The entrepreneurial orientation is also part of psychological characteristics i.e. risk-taking, innovativeness pro-activeness, etc. The future research may entrepreneurial orientation can be tested as a mediator in a relationship of psychological capital with entrepreneurial intentions. This study is before covid-19 so it should be re-conducted to determine to post covid-19 influences. This study can be processed through mixed methods to triangulate results achieved in quantitative testing because the advantage of both qualitative and quantitative techniques can be enjoyed through mixed methods.

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