

## **Mediating Role of Career Thoughts for the Effect of Career Exploration on Career Decision Making**

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The study examined mediating role of career thoughts for the effect of career exploration on career decision making in adolescents. Furthermore the mediation was also assessed in reverse direction to cross verify. Sample comprised of 392 adolescents (53.3% male) age ranged 18-25 year mean $\pm$  SD (21.15  $\pm$  1.62). Two assumptions were made; first, career thought mediates between career exploration and decision making and second career exploration mediates between career thought and decision making. Multiple linear regression analysis presented mediating effect of decision making confusion between reaction exploration and career uncertainty ( $\beta$ =-0.34,  $p$ <.001,  $\Delta R^2$ =.07) as well between reaction exploration and career decision making ( $\beta$ = -.40,  $p$ <.001,  $\Delta R^2$ =.06). On the other hand, exploration belief ( $\beta$ =-0.24,  $p$ <.001,  $\Delta R^2$ =.12) mediated the effect of decision making confusion on career certainty. Further, reaction exploration mediated the effect of decision making confusion on career certainty and decision making ( $\beta$ =-0.21,  $p$ <.001;  $\beta$ =-0.28,  $p$ <.001,  $\Delta R^2$ =.07). Exploration appears to have a major role in career decision making process in adolescence. Career thoughts though effect the relation between career exploration and career decision making in some aspects.

*Keyword.* Career thoughts, exploration, and career decision making.

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## **Introduction**

Adolescents are critical in the career decision-making process, as this is when they usually begin to plan, explore and make decisions about further education or employment (Rogers, Mary, Creed, Peter, Glendon, Ian, 2008; Vondracek & Kawasaki, 1995; Savickas, 1997). Career certainty is defined as an individual's decidedness about their career choice, and perceived comfort with their choice (Hartung, 1995). Cooper, Argyris, and Channon (1998), define career decision-making as a decision or choice about which line of work has to pursue. Choosing a career line or making a career to the changing work environment requires capability to make a rational decision about one's own career. It is clearly stated that in this era, to make a career decision at one point in time is not possible, rather it's a process that involves various decisions, small or large, that comes together to define one of a personalized direction of career development (Emmerling & Cherniss, 2003).

A key feature of the process of decision making is exploring various career options and professional fields. Adolescence is a phase of career exploration where people begin to assemble work-related information in order to consider what career can be possible for them (Bullock-Yowell, Katz, Reardon, & Peterson, 2012). Process of career exploration can be a stressful as it can provoke challenging situations and concerns about oneself and future. Young adults keenly discover their interests and skills for testing their abilities against available opportunities (Bullock-Yowell et al., 2012; Hartung, 1995). As an increase in career exploration behaviors predicted a decrease in career indecision ( Park, Woo, Park, Kyea, Yang, 2016).

Career Exploration refers to “the collection and analysis of information regarding career related issues, making individuals become more aware of themselves and the world of work, formulate career goals and decisions, and develop strategies necessary to accomplish significant goals” (Griffin & Hesketh, 2006). Exploration process involves diverse activities used to promote career development in which an individual involve to collect and increase knowledge about self and environment,

and in the end achieve career related outcomes (Atkinson & Murrell, 1988; Blustein, 1992; Taveira & Moreno, 2003; Jami & Kamal 2017; Kalsoom, Masood & Jami 2017; Ahmed, Ahmed, Aqeel, Akhtar, & Salim, 2017; Cisheng, Jamala, Aqeel, Shah, Ahmed, & Gul, 2017; Khan, Amanat, Aqeel, Sulehri, Amanat, Sana, & Amin, 2017).

Stumpf et al., (1983) proposed an interactive model of vocational exploration, emphasizing three distinct aspects of exploration: exploration beliefs (e.g., instrumentality and preference); exploration process (e.g., where and how); and reactions to exploration (e.g., affect and stress). Stumpf et al., (1983) stated that there are number of behaviors that can be classified as exploratory, but it is essential to classified provisionally career related behaviors. This model proposed that the process of exploration includes four ways: (a) “where one explores” (b) “how one explores” (c) “how much one explores” and (d) “what one explores”. Barak, Camey, and Archibald (1975) stated that getting into process of exploration requires one to analyze the obtained information whether it’s sufficient or not. Exploration process is likely to change subsequently with the level of satisfaction one might feel about the information that has been acquired. Where one can explore, can be alter, how one explores may not become systematically organized, the degree of exploration can reduce, and the focus can (Sampson, Peterson, Lenz, Reardon, & Saunders, 1996). According to Wanous (1977) exploration is a conscious process which means that, at any given time, individuals are acting on the basis of set of beliefs and perceptions, apart from whether they are realistic or sounds rationally. So it is fundamental to think about the individual's expectations regarding career opportunities (Stumpf et al., 1983).

Cognitive factors influencing career choice has gain interest of researchers since past couple of decades. It is speculated that negative thoughts have an effect on career certainty. Any deficit in the process of career development adversely affects one's experience about making a career. Knowledge and beliefs about selves, and career options all influence one’s ability to make rational decisions about career. If individual think negatively on the decision about their career, then they might not be sure for career planning (Sampson, Reardon, Peterson, &

Lenz, 2004). Thoughts regarding career can have larger impact on the career related behavior while engaging in career development (Sampson et al., 1996). Kleiman et al. (2004) hypothesized that rationale decisions during the process of career decision making adversely affects by dysfunctional thoughts. The construct of negative thoughts are associated with lower sense of rationality (Lustig & Strauser, 2002). Career indecision has also established a significant relationship to poor career beliefs (Enright, 1996), and negative career thoughts (Saunders, Peterson, Sampson, & Reardon, 2000).

Career thoughts play an important role in career reconnoiter and commitment, decision making thoughts about career are person's thinking about assumptions, attitudes, behaviors, beliefs, feelings, plans and/or strategies related to career problem solving and decision making (Sampson et al., 1996). Due to dysfunctional thoughts one is unable to engage in exploratory behavior associated with career problem solving and decision making. Sometimes these thoughts becomes obstacle for a person by effecting the ability to solve career related problems, using inadequately obtained information while in a process of career decision making, and remain unsuccessful in deciding a career. Such difficulties can have an effect on the abilities to go further, thereby increasing the career uncertainty (Bullock-Yowell et al., 2012).

Empirical literature is scarce particularly on influence of career exploration process behaviors on level of career certainty (Esrer, 2008). Literature suggested that career thoughts and career exploration has a major function in career process of career decision making. Additionally, to extent of our knowledge no published research have paid attention on the relationship between career thoughts and career exploration. Many career theorists recommended that processing of information influenced by attitudes, values and cognitions (Kinnier & Krumboltz, 1986; Sampson et al., 2004), and therefore it is assumed that career thoughts may have a mediating role between career exploration and career certainty (Bullock-Yowell et al., 2012). Therefore, the present study has made two assumptions to examine the relationship of career thoughts and career exploration with career decision making.

The first assumption was career thought mediating between career explorations and career decision making and the second assumption was career exploration mediating between career thought and career decision making. In order to see either career thought or career explorations are the factors that cause the gap between their existing state of indecision and a desired state of decidedness.

## **Method**

### **Sample and Procedure**

The sample of the study comprised of 392 students from different public (n = 210) and private (n = 183) sector universities. The sample included both male (n= 209) and female (n = 183) who fall in age range of 17 years to 25 years (M = 21.15, SD =  $\pm$ 1.62). Participants were briefed about the nature of the study and they were also assured that the information provided by them would be kept confidential and will be used only for the research purpose. The informed consent of participants was taken before administration of instruments. The questionnaire booklets were administered in the classroom setting. Instruction were written on questionnaire booklets as well as participants were given verbal instructions. Though there was no time restriction, on average it took 50 minutes for participants to respond on all instruments. Along with demographic sheet, the questionnaire booklet comprise of following instruments.

**Career Decision Making Scale (CDS).** The Career Decision Scale developed by Osipow et al., (1976) is used to measure career certainty and career indecision. The scale consist a total of 19 items measuring two dimensions of career decision making i.e., career certainty and career uncertainty. For 18 items of the scale, responses of participants are collected on a 4 point likert-scale i.e., (1) “least like me” to (4) “most like me”. Two items measuring career certainty component (score ranges 2 to 8) and for 16 items measuring career uncertainty component (score ranges 16 to 64), high score suggesting higher level of the respective component. Cronbach’s alpha coefficient obtained for the

present sample were .71 for career certainty and .78 for career uncertainty.

**Career Exploration Survey (CES).** Career exploration survey (Stumpf, Colarelli, & Hartman, 1983) measures career exploratory behavior on 3 dimensions. First dimension “exploration process” consists of seven types of indicators (i.e., environment exploration, self exploration, number of occupations considered, intended-systematic exploration, frequency, and amount of information) measured by 21 items on a 5 point Likert scale. The second dimension “exploration belief” is measured with six types of indicators (i.e., employment outlook, certainty of career explorational outcome, external search instrumentality, internal search instrumentality, method instrumentality, and importance of obtaining preferred position) measured by 24 items on a 5 point Likert scale. Finally, the third dimension “reaction exploration” consists of three types of indicator (i.e., satisfaction with information, explorational stress, and decisional stress) measured by 13 items on a 5-7 point Likert scale. Cronbach alpha computed for present study sample were .76, .64 and .81 for Exploration Process, Reaction Exploration, and Exploration Belief respectively.

**Career Thought Inventory (CTI).** The inventory developed by Sampson et al., (1998) includes 48 self-report statements. The CTI measures negative thoughts that impede career decision-making using a four-point Likert scale ranging from (0) “Strongly Disagree” to (3) “Strongly Agree”. The CTI has four components: Decision-Making Confusion (14 statements; score ranges 0 to 42), Commitment Anxiety (10 statements; score ranges 0 to 30), External Conflict (5 statements; score ranges 0 to 15) and Nature of Dysfunctional Thoughts (19 statements; score ranges 0 to 57). Higher scores indicate negative career thinking. Cronbach’s alpha coefficient obtained for the present sample was .90 for Decision Making Confusion, .82 for Commitment Anxiety, .72 for External Conflicts, and .88 for Nature of Dysfunctional Thoughts.

## Results

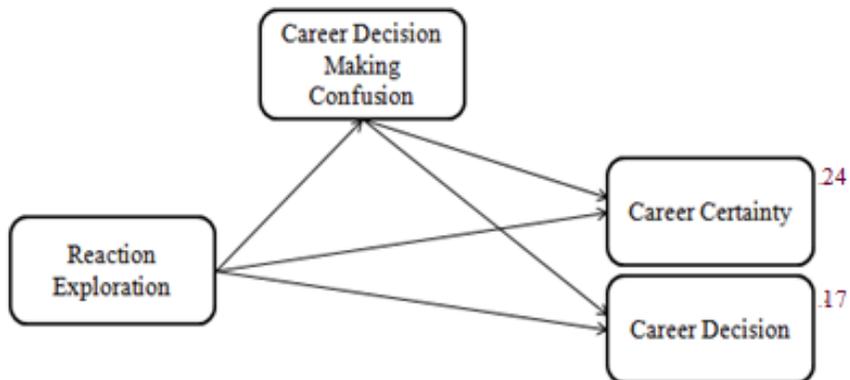
The study examined the relationship between career exploration and career decision making and the mediating role of career thoughts. To measure these constructs Career Decision Scale (CDS), Career Exploration Scale (CES), and Career Thoughts (CTI) were used. Cronbach Alpha was computed in order to estimate the reliability of these measures for the present sample. Table 1 shows that the alpha coefficient all scales and subscales are within recommended range suggesting that measures are reliable for the present sample. Furthermore, descriptive analysis (Table 1) showed that data was normally distributed.

**Table 1**

*Descriptive statistics & Alpha reliability of the study variables (N=392)*

Scales	Variables	No of Items	Alpha	M	SD	Skew
Career Thought Inventory						
	Decision Making Confusion	14	.90	19.26	8.97	0.39
	Commitment Anxiety	10	.82	16.06	5.93	0.44
	External Conflicts	5	.72	8.24	3.27	0.13
	Dysfunctional Thoughts	19	.88	30.98	10.57	0.57
Career Exploration Survey						
	Exploration Process	21	.76	66.12	14.61	0.04
	Reaction Exploration	13	.64	43.32	8.86	-0.25
	Exploration Belief	24	.81	73.49	14.91	-0.32
Career Decision Scale						
	Career Certainty	2	.71	4.46	1.27	0.63
	Career Uncertainty	16	.78	38.76	9.37	0.09

Bivariate correlation was computed to explore the relationship between the variables of the study. Table 2 revealed that the components of CES and CTI significantly and positively correlated with each other (r-range= .60 to .64 & .70 to .90;  $p < .05$ ) respectively. However the components of CDM show a different pattern. Career certainty (CC) has significant positive correlation with Decision Making (DM) and negative correlation with Career Uncertainty (CU) whereas career uncertainty has negative correlation with Decision Making (DM). Table 4 also shows that the component reaction exploration of CES is positively correlated with all components of CTI. External conflict is positively correlated with exploration process and decision making confusion is negatively correlated with exploration belief. The results also revealed that all components of CES are positively correlated with career certainty except reaction exploration; however all components are positively correlated with career uncertainty. Moreover, only reaction exploration is positively correlated with over all decision making (DM).



*Figure 1: Career Thoughts mediating between Career Exploration and Career Decision Making*

Multiple regression analysis revealed the mediating effect of career thoughts for the relationship between career exploration and career decision making. Table 3 showed that the effect of reaction exploration on career certainty is not mediated by decision making confusion. Table 3 also showed that the effect of Reaction Exploration on career uncertainty is partially mediating by decision making confusion ( $\beta=0.34$ ,  $p<.001$ ) explaining 7% of variance in career uncertainty. The significant value of Sobel test (3.35,  $p<.001$ ) provided further evidenced. Further, the Table 3 revealed that the effect of reaction exploration on decision making is partially mediating by decision making confusion ( $\beta= -.40$ ,  $p<0.001$ ) explaining 6% of variance in decision making. Further the Sobel test (3.66;  $p<0.001$ ) provides evidenced that decision making confusion is partially mediating the relationship.

Contrary to that, table 4 also revealed that the effect of Reaction Exploration on Decision Making is partially mediating by Decision Making Confusion ( $\beta= -.40$ ,  $p<0.001$ ) explaining 6% of variance in Decision Making. Further the Sobel test (3.66;  $p<0.001$ ) provides evidenced that Decision Making Confusion is partially mediating the relationship.

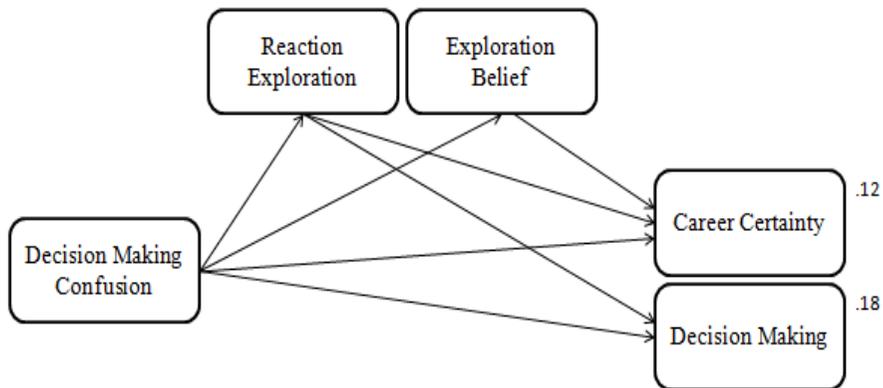


Figure 2: Career Exploration mediating between Career Decision Making Self-efficacy and Career Decision

**Tabel 2**

*Correlation Coefficient of Career Decision Making Self-efficacy, Career Thoughts, Career Exploration and Career Decision making and their Subscales (N=60)*

S.no	Variable	1	2	3	4	5	6	7	8	9	10
1	Decision making confusion	-	.89**	.83**	.91**	.07	.60**	-.20	-.16	.70**	-.63**
2	Commitment anxiety		-	.84**	.93**	.20	.60**	-.11	-.07	.58**	-.50**
3	External Conflicts			-	.90**	.26*	.60**	-.01	.02	.61**	-.45**
4	Dysfunctional thoughts				-	.13	.60**	-.11	-.14	.60**	-.55**
5	Exploration Process					-	.18	.60**	.50**	.20	.21
6	Reaction Exploration						-	.06	.02	.52**	-.40**
7	Exploration Belief							-	.44**	.09	.24
8	Career Certainty								-	.03	.66**
9	Career Uncertainty									-	-.73**
10	Decision Making										-

\*\* Correlation is significant at the 0.01 level (2-tailed); \*. Correlation is significant at the 0.05 level (2-tailed).

**Table 3**

Components of Career Thoughts Mediating the relationship between components of Career Exploration and Career Decision Making (N=392)

Predictors	Mediators	Dependent Variables					
		<u>Career Certainty</u>		<u>Career Uncertainty</u>		<u>Decision Making</u>	
		Model 1 B	Model 2 B	Model 1 B	Model 2 B	Model 1 B	Model 2 B
(Constant)		4.11	4.16	20.1	18.94	2.81	2.73
Reaction Exploration		-0.03**	-0.03**	0.43**	0.34**	-0.06**	-0.05**
Exploration Belief		0.02**	0.02**	NS	-	NS	-
	Decision Making Confusion		-0.01		0.35**		-0.07**
	Commitment Anxiety				-0.11		0.03
	Dysfunctional Thoughts				0.01		0.02
$R^2$		0.1	0.1	0.17	0.24	0.12	0.17
$F$		21.69**	14.56**	77.42**	30.35**	52.63**	20.46**
$\Delta R^2$			0		0.07		0.06
$\Delta F$			0.38		12.4		8.7

\*\*  $p < .01$ ; NS (Non Significant Predictor, Violation of Mediation Rules 1 (Barron & Kenny, 1986), No mediation was performed)

**Table 4**

Components of Career Exploration mediating the relationship between Career Thoughts and Career Decision Making (N=392)

Predictors	Mediators	Dependent Variables			
		Career Certainty		Decision Making	
		Model 1 B	Model 2 B	Model 1 B	Model 2 B
(Constant)		4.34	3.96	0.72	2.66
Decision making confusion		-0.05**	-0.04*	-0.09**	-0.08**
Commitment anxiety		0.02	0.03	0.02	0.03
External Conflicts		0.08	0.05	0.06	0.04
Dysfunctional thoughts		0	0	0	0.01
	Reaction Exploration		-0.03**		-0.05**
	Exploration Belief		0.02**		
<i>R</i> <sup>2</sup>		0.05	0.12	0.11	0.18
<i>F</i>		5.41**	8.98**	11.43**	16.65**
$\Delta R^2$			0.07		0.07
$\Delta F$			15.32**		33.67**

\*\*  $p < .01$ ; NS (Non Significant Predictor, Violation of Mediation Rules 1 (Barron & Kenny, 1986), No mediation was performed)

The second assumption was career exploration is mediating between career thought and career decision making (figure 2). Table 3 showed that, the effect of Decision Making Confusion on Career Certainty is partially mediating by Reaction Exploration ( $\beta = -0.21$ ,  $p < .001$ ) and Exploration Belief ( $\beta = 0.24$ ,  $p < .001$ ) explaining 12% variance in Career Certainty. The Sobel Test also revealed the significant mediation by Decision Making Confusion (Reaction Exploration: 3.39;  $p < .001$ , & Exploration Belief: 2.04;  $p < .01$ ).

Further Table 4 showed that the effect of Decision Making Confusion on Decision Making partially mediating by Reaction Exploration ( $\beta = -0.28$ ,  $p < .001$ ) explaining 18% variance in Decision Making. The significant value of Sobel test (4.32;  $p < .001$ ) further provides evidence that Reaction exploration is mediating the relationship. Figure below explaining the significant mediation by components of Career Exploration between Career Thoughts and Career Decision Making.

## **Discussion**

The first assumption was CT mediating between CE and CDM. Since recent research have been well documented that the relationship between exploratory behavior and career decision making may be mediated by career thoughts (Bullock-Yowell et al., 2012). Sampson et al., (1998) demonstrated that individuals having inability to sustain career making process are unable to explore their skills and strengths as well as the information about different occupations. As a result deficit occurs in the process of decision making. In the first assumption, the results revealed that the effect of reaction exploration on career uncertainty and decision making is mediated by decision making confusion. This indicates that while having a greater degree of inability to sustain career process for making a career choice, students find that available information is not sufficient or particular information is still needed for making a potential career. Hence increase in uncertainty level decreases decision making process. Further results showed career

thoughts do not mediate between career exploration and career certainty. The study of Blustein (1988) documented that exploration predicts career certainty. Hence it is very much according to the findings of Blustein's (1988) study suggesting the direct relation between career exploration and career certainty.

The second assumption was career exploration mediating between CT and CDM. Results showed that exploration belief partially mediated between DMC and CC, which means that decision making confusion decreases if students have high expectation of attaining their career, as a result career certainty level increases. Reaction exploration partially mediated between the DMC and CC, this indicates that if students are not satisfied with the available information then the students are unable to initiate a process of deciding a career as a result level of career certainty decreases. In addition, reaction exploration partially mediated between decision making confusion and decision making. This relationship indicates, a greater degree of confusion affects the decision making among students, especially when students feel stress regarding the information that has been acquired was either not sufficient or worthless for making a career choice.

or the first assumption, reaction exploration was predicting only two components of CDM (career uncertainty, CUC; and decision making, DM). In second assumption, DMC is also predicting two components of career decision making (career certainty, CC; and decision making, DM). The first assumption has been explaining 24% variance in career uncertainty and 10% in decision making. However, in second assumption 12% variance has been explained in career certainty, and only 18 % in decision making respectively. First assumption is comparatively predicting better results in the first assumption. Further, the results revealed that in both assumptions, exploration process and all components of career thoughts (except decision making confusion) have non-significant role in outcomes of career decision making.

Although the results revealed important findings but conclusions drained from the present study are tentative because of some limitations of current study that needs to be recognized. First, the sample was homogeneous in age, educational background, and socioeconomic status. Most participants were belonging to middle class, and between the ages of 20 years to 22 years. Second, the association establishes among the variables in this study do not account for all of the variance in career decision making. Future researches may explore other antecedents and mediators of career decision making across variant populations.

However the results of present study leading to understand that why many students do not make their career choices even after selecting their major. It might be the reason that they are unable to engage in exploratory behavior associated with career problem-solving and decision-making, specifically identifying an appropriate major with respect to their self-interest. Overall, the study provided considerable empirical support for the contribution of both factors to the career decision making process for students. Further studies must see other factors such as emotional distress, a lack of confidence in ability to perform certain tasks, lack of experience in varied life roles, lack of self-insight, negative expectations associated with a particular pursuit, fear of failure and conflicts with important people that adds complexity to the career decision-making process.

The present results have an important practical implication in vocational psychology. The findings of the present study may be of interest to counselors, teachers, or researchers for planning interventions that promote exploratory behavior for attaining positive career outcomes.

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