

Testing Matrix Language Framework Model On Urdu-English Online News Entity: A Creative Approach

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Article Info	Abstract
<p>Article History</p> <p>Received: May06 , 2021</p> <p>Accepted: December 08, 2021</p> <hr/> <p>Keywords : Personality, Holland's model, Congruence, Vocational aspirations, Gender</p> <p>DOI: 10.5281/zenodo.5768240</p>	<p><i>The study determined the vocational aspirations of high school students and their level of congruence with Holland's RIASEC personality types measured by SDS (Self Directed Search) (Miller, Springer, Tobacyk & Wells, 2004). Majority of the students (N = 482) mentioned doctor, army, teacher, lawyer, and engineer as their most preferred vocational aspirations. The effects of vocational aspirations of students on five main domains of personality measured by NEO-PI-R were also studied. Expert opinions were incorporated to identify the personality patterns and Holland's personality types, which meaningfully correspond with the respective professions of experts. The instruments used in the study have high internal consistency. Gender differences were also studied. The results showed high degree of congruence between and vocational aspirations of doctor and teacher and a state of incongruence for the army, lawyer and engineer once compared with their vocational interests. The study may be helpful in career decision-making process and is valuable to the students, career experts, and policymakers.</i></p>

Introduction

Personality traits and vocational interests are two major non-cognitive domains in the field of psychology from the dispositional realm, and they both can measure individual differences. The extensively used models are the Five Factor Model (FFM) of personality (Costa & McCrae, 1992) and Holland's model of vocational interests (Holland, 1997). The theoretical overlap between FFM (Neuroticism, Extraversion, Openness, Agreeableness, and Conscientiousness) and vocational interests have established by many researchers (Zhang, 2008).

In the field of vocational interests, the work of Holland (1994 and 1997) stands out like a colossus. Holland has conceptualized vocational interests as an expression of personality. Holland theorized that personality traits, self-knowledge and occupational knowledge reflect career choices. The Holland's theory specified a hexagonal structure of the degree of psychological similarity among the six personality types, wherein each of the six RIASEC (realistic, investigative, artistic, social, enterprising, and conventional) personality types appears on one point of the hexagon.

Researchers intrigued by vocational education and preparing then again reflect which factors of the individual make her or him both great at it "proficient achievement and content with it "work fulfilment. The three expansive individual contrast spaces of (subjective) capacity, character, and professional interests are almost certain contender for affecting proficient achievement and work fulfilment (Sackett, Lievens, Van Iddeking, & Kuncel, 2017). The vocational daydreams are a moderate to good predictor of later career behaviors, and People whose aspirations belong to the same category are more predictable than people whose aspirations belong to different groups. The same findings are also supportive of studies (Kiani, Hassan, & Irfan, 2013) conducted on occupational aspirations in Pakistani context.

There is significant understanding that profession aspirations are significant inspirational drivers of genuine vocation decisions and achievements (Ashby and Schoon, 2010). Indeed, enterprising aspirations rank among the most grounded indicators of genuine innovative movement (Kautonen, Gelderen, and Fink, 2015). So also, initiative desires have risen as a reliable indicator of authority conduct, potential, and execution (Stiehl et al., 2015).

In spite of their broadly perceived role as antecedents of genuine vocation decisions and accomplishments, the subject of what elements shape the advancement of such aspirations over the current course is yet to be thoroughly replied (Obschonka et al., 2016). Despite the experiences this examination offers, the most generally contemplated precursors can incompletely clarify the development of individual contrasts in desires to business initiative (Obschonka et al., 2016).

The disharmony/disparity viewpoint and specific condition fit all the more comprehensively in the thought that people pick an occupation that best accommodates their work directions, including their work esteems. To the degree that there are gender contrasts in work esteems, ladies may vary from men in the profession decisions

they, by and large, see as most appealing and compatible. Such gender orientation contrasts in work may emerge from an assortment of sources, for example, socialization encounters, gender generalizations and job desires, and perhaps hereditary inclinations (Elprana et al., 2015).

On average, men place a higher significance on significant compensations, power, renown, and profession openings; and are more pulled in by occupations that include chance-taking, challenge, and duty (OECD, 2016; Sortheix et al., 2015; Lechner et al., 2018). Females, conversely, place more significance on exclusive prizes (e.g., learning openings), prosocial and relational perspectives, and work-life balance (Lechner et al., 2018; Sortheix et al., 2015; Su and Rounds, 2015). This example of gender orientation contrasts in work esteems agrees with look into on close to home estimations indicating that men appreciate accomplishment, power, and self-course more than ladies crosswise over nations (Schwartz & Rubel, 2005).

The overwhelming majority of cross-cultural studies on personality and vocational aspirations have conducted with adults or late adolescents. Research showed that during adolescence interests crystallize and stabilize, and career goals and aspirations become more realistic in terms of adaptation to personal and environmental characteristics (Ali & Saunders, 2009; Martin et al. 2009). Few studies explored vocational aspirations on early adolescents (Kiani, Hassan, & Irfan, 2013). There is a shortage of literature in the field of vocational aspirations and the work environment in Pakistani context. Hence we are going to investigate the level of congruence between vocational aspirations and vocational interests of Pakistani potential workforce.

In Pakistan, the students, after passing middle standard (8th class) have to choose two different categories of subjects, i.e., the science group and humanities group (National Educational Policy, 2009). There are many career opportunities which had based on these categories of subject. Therefore students of 9th and 10th classes were selected in the study. There is no concept of employing career counsellors in schools. The students had left on the mercy of different moderators which influence them to choose certain occupations as their future choices. Therefore the present study explored in detail the vocational aspirations of the students. Whether the degree of agreement between vocational aspirations and vocational interests of the students exist? The authenticate results and add in cultural relevance to the most preferred vocational aspirations of students with the related professions, the opinion of experts about personality and vocational interests are also incorporated. The study will add to the understanding of career counsellor and policy maker about vocational aspiration of the students, their preferences, and level of congruence between vocational aspirations and vocational interests.

Method

The study was designed to find out the personality and vocational aspirations of high school students. It determines the degree of agreement between vocational aspirations and vocational interests (personality types) of the students.

In this study, gender differences in vocational aspirations of the students (N = 482) computed. The finding showed the frequencies of vocational aspirations of both male (243) and female (239) students. Doctor (193) seems to be favorite career for both boys (75) and girls (118). Male (124) preferred Army predominantly while very few females (15) opted for this choice. Teaching (58) is the profession which the girls (51) liked most. Very few boys (7) opted for the teaching profession. Lawyer (55), as a profession is a favorite for the females (45) as compared to the male students (10). Engineering (37) is more liked by boys (27) as compared to girls (10). The results showed gender differences between the vocational aspirations of the students.

Sample

The study conducted on 700 high school students from Rawalpindi. The convenient sampling technique used. Two boys and two girl schools were selected from urban areas while two boys and one girl school selected from rural areas of Rawalpindi. All these were government schools. In each school 100 students were randomly selected. Fifty students each from 9th and 10th class were selected. In each class 25 students from science group and 25 students from Arts group were selected using the systematic random sampling techniques. Overall 400 boys and 300 girls were selected.

The final sample of 482 students was selected based on choosing the most preferred vocational aspirations. The five most preferred professions chosen by the students are doctor, army, teacher, lawyer, and engineer. There are 243 male students and 239 female students. 271 are in 9th class and 211 in 10th class students. 254 are Science students, and 228 are Arts students. Urban students are 321, and rural students are 161. Their age range is from 14 years to 19 years, with a mean age of 15.66 years.

Vocational aspirations and matching occupational codes. According to Holland's (1997) coding system as RIASEC using the Dictionary of Holland Occupational Codes (HOC), the profession Doctor should have the Investigative (I) as highest occupational code; the profession Army should have the Realistic (R) as highest occupational code; the profession Teacher should have the Social (S) as highest occupational code; the profession Lawyer should have the Enterprising (E) as highest occupational code; and the profession Engineer should have the Realistic (R) and Investigative (I) as highest occupational codes.

Degree of agreement. The relationship between the code of the current vocational aspiration and the SDS summary code represents the degree of agreement. When the first letter code of the current aspiration and the SDS are the same, the likelihood of a person maintaining that aspiration is very high. The first letter of the occupational code is most important, most descriptive, and more reliable. A more straightforward index of agreement between any two codes can also obtain by employing the hexagonal model. The scoring procedure entailed comparing the first letter codes for the current vocational aspiration and the highest summary SDS codes.

Sample of experts. Five professionals from each preferred career by students were selected. There are 25 professionals from five different occupations (doctor, army, teacher, lawyer, and engineer). A convenient sampling technique used. Experts having at least 20 years of service in particular fields were selected. They had taken from both genders where possible.

Instruments

Following instruments had used in the study

The Demographic sheet consisted of detailed information about the participants. A demographic sheet was constructed with the help of experts (two PhD students and one M.Phil. psychologist) from National Institute of Psychology, Quaid-i-Azam University Islamabad.

Future possibilities questionnaire asked two questions about the vocational aspirations of the students were administered with the help of two PhD students. The first question was “What career do you intend to adopt in future?”. The second question was “If you have more than one career choice, please write in order of preference”. Frequencies of the prospective vocational choices calculated, and the first five most preferred vocational aspirations mentioned by the students selected for the study purposes. The selected preferred occupations are Doctor, Army, Teacher, Advocate, and Engineer.

Evaluation sheet: An evaluation sheet had developed with the help of experts (one PhD psychologist, one PhD scholar and One M.Phil in psychology). In the first part conceptual definition of 30 facets of NEO-PI-R (Costa & McCrae, 1992) were mentioned on a seven-point rating scale (1 to 7) ranging from ‘least required’ to ‘most required’. The experts were requested to describe the personality traits which in their personal view should be possessed by a professional on the 30 traits of personality. The second part consists of conceptual definitions and personality traits associated with RIASEC types (Holland, 1985). They were also requested to choose one of the six personality types which meaningfully correspond with their professions.

NEO Personality Inventory-Revised (NEO PI-R) is self-administered and consisted of 240 items. There are five main scales Neuroticism, Extraversion, Openness to Experience, Agreeableness, and Conscientiousness each representing six facets scales. The adaptation, translation, and cross-validation of NEO PI-R in Urdu language have been conducted in Pakistan by Chishti (2002) and used in present study.

Self-Directed Search (SDS) is a self-administered, self-scored, and self interpreted vocation counselling tool. The scale (228 items) and rating in the SDS assessment booklet include Activities (six scales of 11 items each), Competencies (six scales of ten items each), Occupations (six scales of twelve items each), Self estimates (two sets of six ratings each corresponding to a type) and Summary scales (sum of all subscales each measuring six personality types RIASEC). The SDS was translated in Urdu by Naheed (1988) and the techniques utilized in interpretation were direct translation, group or board of committee approach and back interpretation. Field test strategies utilized for social adjustment and alteration. The Urdu form of SDS is utilized in the present examination.

Results

The data analyzed by computer using SPSS 13. Alpha reliability coefficients of all the main scales of NEO PI-R computed. Item total correlations of all the items with their respective subscales also computed. Correlations of subscales of NEO PI-R and inter-correlation between the five primary domains calculated.

Table 1

Descriptive and skewness for subscales of SDS and NEO-PI-R (n = 482)

Scales	N	M	SD	Cronbach's Alpha	Skewness	Kurtosis
Realistic	33	23.81	7.94	.78	-.01	-.53
Investigative	33	28.76	7.58	.76	-.41	-.25
Artistic	33	28.43	7.69	.80	-.27	-.52
Social	33	29.43	6.96	.71	-.26	-.34
Enterprising	33	28.60	7.50	.77	-.28	-.28
Conventional	33	30.75	7.93	.80	-.53	-.19
Neuroticism	48	138.00	14.79	.67	-.12	.85
Extraversion	48	150.94	13.59	.65	-.07	.47
Openness	48	135.96	9.65	.36	.12	.51
Agreeableness	48	165.18	14.46	.71	-.05	-.03

Conscientious	48	171.19	18.21	.84	-.02	-.05
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n = number of items; Realistic, Investigative, Artistic, Social, Enterprising, and Conventional are summary scales of SDS; Neuroticism, Extraversion, Openness, Agreeableness and Conscientious are main scales of NEO-PI-R

The psychometric properties of research instruments (NEO PI-R, SDS and Evaluation sheet) established on the main sample of the study (Table 1). The results showed mean, standard deviation and Alpha reliability coefficients of 5 main scales of NEO PI-R range from Openness ($\alpha = .36$), Extraversion ($\alpha = .65$), Neuroticism ($\alpha = .67$), Agreeableness ($\alpha = .71$) and Conscientiousness ($\alpha = .84$). Overall the results showed moderate to high internal consistency of the NEO PI-R except Openness domain. Findings also showed that all the five main scales significantly correlated with each other. Neuroticism (N) domain significantly negatively correlated with all other domains.

The Alpha coefficient of overall summary scales (RIASEC types) of SDS ranged from Social ($\alpha = .71$), Investigative ($\alpha = .76$), Enterprising ($\alpha = .77$), Realistic ($\alpha = .78$), to Artistic and Conventional ($\alpha = .80$). This displayed high internal consistency of the SDS scales. alpha reliability coefficients ranging from .50 (Occupations) to .70 (competencies).

Table 2

Repeated Measure Analysis of variance (ANOVA) for five groups based on vocational aspirations of students and their scores on five main domains of personality (N = 482)

Effects	MS	Df	F	Greenhouse-Geisser
Personality	46927.511	4	239.10***	$p < .001$
Personality x Vocational Aspirations	212.801	16	1.084	$p < .371$
Personality x Gender	371.554	4	1.893	$p < .137$
Personality x Vocational Aspirations x Gender	124.512	16	.634	$p < .792$
Error	196.270	1888		

*** $p < .001$; Male = 243, Female = 239; Personality means five main domains of personality (neuroticism, extraversion, openness, agreeableness, and conscientiousness); Vocational aspirations means five groups of students based on five vocational aspiration (Doctor, Army, Teacher, Lawyer, and Engineer)

Mauchly's Test: $W = .40$, $\chi^2(9) = 427.94$, *** $p < .001$; Wilks' Lambda = 0.96, $F(4, 16) = 0.97$, $p > .05$

To test sphericity, Mauchly's Test (Table 2) inspected which tests for the equivalence of the hypothesized and the observed variance/covariance patterns. The test was highly significant, $W = .40$, $\chi^2(9) = 427.94$, $p < .001$, suggesting that the assumption of sphericity had been violated. A one-way within-subjects (or repeated measures) ANOVA was conducted to compare the effect of five groups based on vocational aspirations on five main domains of personality. However results suggested that only personality has significant differences within subjects however there is no significant effects of personality, vocational aspirations and gender, Wilks' Lambda = .96, $F(4, 16) = .97$, $p > .05$. These results suggested that vocational aspirations do not affect five domains of personality.

Table 3

SDS highest Summary codes of students based on their vocational aspirations (N = 482)

Highest Summary Codes	R	I	A	S	E	C
Doctor (N = 193)	5	48	24	47	15	54
Army (N = 139)	7	27	14	24	20	47
Teacher (N = 58)	0	4	16	21	3	16
Lawyer (N = 55)	2	5	10	24	3	11
Engineer (N = 37)	4	5	9	5	3	13

Note. SDS = Self Directed Search. Read R as realistic, I as investigative, A as artistic, S as social, E as enterprising, C as conventional.

Table 3 indicated the highest SDS summary codes for students. The students whose prospective vocational choice is a doctor; the dominant summary code is Conventional as 54 students' highest code

followed by Investigative as 48 students' highest summary code. According to Holland occupational classification (HOC), the vocational choice doctor should have an Investigative type as their first summary code. Investigative type likes Investigative jobs, has mathematical and scientific ability but often lacks leadership ability. They described as analytical, curious, intellectual, reserved and precise. The result showed that those opted for doctor has some parity with the prospective vocational choice and thus partially supported the hypothesis.

For Army as vocational aspiration, the dominant summary code is Conventional as 47 students' highest code followed by Investigative as 27 students' first choice. Realistic should be a predominant choice as per HOC while only 7 students' highest summary score is Realistic. The result showed the degree of incongruence between vocational aspiration of Army and SDS summary code which should be Realistic. Thus hypothesis is not supported by the results.

For teachers, the dominant summary code is Social as 21 students' highest code, followed by each Artistic and Conventional as 16 students' highest summary code. The result showed that those opted for teachers have high degree of congruence between the vocational aspirations of teacher and original summary codes which should be Social according to HOC. Social type like social jobs has social skills and talents but often lacks mechanical and scientific ability. They described as cooperative, friendly, kind, persuasive, courteous, and warm. Hence hypothesis is supported by the results.

The vocational aspiration of lawyer has Social as 24 students' highest summary code followed by Conventional (11) and Artistic (10). According to HOC, the vocational choice of a lawyer should have Enterprising as their first summary code. The Enterprising types show preference for activities that involve manipulation of others to achieve organizational goals or economic gain, perceive themselves as aggressive, self-confident, and friendly, and value political and economic achievement. They liked enterprising jobs and have leadership and speaking abilities but often lacks scientific ability. The results showed that those opted for lawyers have degree of incongruence between the vocational aspirations and their vocational interests. Thus hypothesis is not supported by the results.

Similar results indicated for the students whose prospective vocational choice is engineer. 13 students' highest code is Conventional followed by Artistic (9). However only 5 students attained investigative type as their highest summary code. Showed that those opted for engineering have high degree of incongruence between the vocational aspiration of engineer and original summary codes of Realistic and Investigative as per HOC. Thus hypothesis is not supported by the results.

Table 4

Scores obtained from highest Summary codes based on five groups of vocational aspirations of students via hexagonal model (N = 482)

Vocational aspirations of students	Highest summary code from classification booklet	Frequencies of scores obtained from highest summary codes based on hexagonal model							
		1		2		3		4	
		<i>M</i>	<i>F</i>	<i>M</i>	<i>F</i>	<i>M</i>	<i>F</i>	<i>M</i>	<i>F</i>
Doctor (<i>N</i> = 193)	I	6	6	44	53	8	28	17	31
Army (<i>N</i> = 139)	R	15	3	23	4	79	7	6	1
Teacher (<i>N</i> = 58)	S	0	0	4	16	3	14	0	21
Lawyer (<i>N</i> = 55)	E	0	3	4	9	6	31	0	2
Engineer (<i>N</i> = 37)	I/R	3	0	14	1	7	7	3	2

Note. *M* = Male, *F* = Female. *I* = Investigative, *R* = Realistic, *S* = Social, *E* = Enterprising. 4 score means that highest summary code and Holland classification code correspond with each other; 3 means that highest summary codes and Holland classification codes are adjacent on the hexagon; 2 means that the highest summary codes and Holland classification codes are on alternate on the hexagon; and 1 means that the highest summary codes and Holland classification codes are on the opposite side of the hexagon.

The results showed that for vocational aspiration of doctor (*N* = 193), the highest summary code of 17 male students matched with their highest prospective code while 31 female students' highest summary code matched with their highest vocational aspirations code showing a high degree of congruence. Overall the results provided partial support for the vocational aspirations of doctor and teacher, while there is a state of incongruence between the vocational aspirations of army, lawyer and engineer and their vocational interests.

Repeated measure ANOVA on Evaluation Sheet

Repeated measure ANOVA is used to separates between-subject variability from within-subject variability and was computed on five groups of an expert on five domains of evaluation sheet.

In order to test sphericity, Mauchly's Test inspected which was significant, $W = .37$, $\chi^2(9) = 18.16$, $p < .05$, suggesting that the assumption of sphericity had violated. A one-way within-subjects (or repeated measures) ANOVA was conducted to compare the effect of five groups of vocations on five main domains of evaluation sheet. Five areas of evaluation sheet have significant differences within-subjects; however there are non-significant effects of five groups of expert on five areas of evaluation sheet (Wilks' Lambda = 0.27, $F(4, 16) = 1.75$, $p > .050$). These results suggested that different vocations of experts do not affect five domains of evaluation sheet.

The five groups of experts were requested to choose the one personality type out of six (RIASEC), which correspond with your profession. The result showed that 4 doctors picked investigative type while 1 picked the social type which corresponds with their profession. Also showed the degree of agreement between expert opinion and HOC. All five experts from regular Army picked enterprising as their most corresponding personality type. According to HOC, Army has Realistic type as their highest summary code and showed a disparity between the HOC classification and expert opinion. For teachers all the expert rated Social type as their most suitable type. The HOC classification also reported Social as their highest summary code for teacher. The lawyers group of experts picked Enterprising as their appropriate type which also corresponds with Holland summary code. The engineer group selected Investigative as the most suitable personality type which also corresponds with the Holland summary code. Overall the results showed that there is a correspondence between expert opinion and Holland classification of occupation except the occupation of Army, which is one of the most preferred careers of students in Pakistan.

Discussion

The initial study was conducted to explore the personality and vocational aspirations of high school students. The results suggested that vocational aspirations do not affect five domains of personality. The low internal consistency of Openness scale showed that more validity studies need to be conducted in the Pakistani context.

In the present study, the five most reported or preferred career of students of government schools were doctor, army, teacher, advocate, and engineer. The doctor considered the most desired career in Pakistan. In Pakistan, doctor considered as the best job for female students. There are many occupations which depend on the classification of science and arts group subjects. For a doctor, science subjects are compulsory. Hence investigative type has been the right choice as it entails scientific abilities.

Male students opted Army as their daydream choice and showed that male have preference to join Army. In Pakistan, where there are limited job opportunities, getting jobs in government department on merit is considered as very difficult; therefore armed forces provide sufficient opportunities to the youth to join on merit. Moreover due to job security, armed forces are still the best option available for male students.

The profession of a teacher considered as one of the best for females. Female also wanted to be advocate in their life. There are some moderating factors which start influencing the students from very early age. These effects need to be studied in-depth for better understanding of the vocational aspirations of the students and showed that female is coming out and adopting different occupations which were not considered suitable earlier. During the past few decades, the government has provided a lot of job opportunities to female in different departments. Hence they are competing neck to neck with their male counterparts. Male students opted 'engineer' as their career and showed that there are gender differences between the vocational aspirations of students. Therefore different career opportunities for male and female should be planned and provided to the students by the government.

Gender differences also calculated on the highest summary codes. The results showed that male students aspired more Realistic, Enterprising, and Conventional codes as compared to female students. On the other hand female students aspired more Artistic and Social codes as compared to male students. Previous researches also supported these conclusions (Proyer & Hausler, 2007; Tak, 2004).

The results showed a disparity between some of the vocational aspirations of the students and their highest summary codes determined by SDS. This indicated that their vocational interests (activities, competencies etc) did not correspond with the vocational aspirations (Kiani, Hassan, & Irfan, 2013). There had a reasonably good degree of agreement between vocational aspirations of doctors and teachers with their vocational interests among students. There was a moderate degree of agreement between vocational aspiration of lawyer and their vocational interests. However there was a state of incongruence between the vocational aspirations of army and engineer with their vocational interests among students.

The incongruence between vocational aspirations and vocational interests need to be addressed as early as possible for the better future of students. In government high school, there is no mechanism where career guidance is provided to the students. Some teachers try to guide the students according to their knowledge, but there is no institutional support to the students in this regard (Rahman & Moosa, 2013). The choices of vocational interest by students generally depend on the wishes and whims of students. Students either interact with their role model or they listen about it from their parents, teachers and peer.

The other problem is the availability of limited job opportunities in Pakistan; therefore, the students' aspirations are also limited. In government schools, majority of the students are not able to achieve their vocational aspiration because there is a lot of competition for limited vacancies in a particular job. Moreover, there is no proper guidance available to students at schools or governmental level; therefore their vocational aspirations of different occupations at times did not correspond with their interest and competencies.

Overall the findings of the expert opinion about vocational interests are supportive of the conclusions drawn in the study except for the relevance of occupation of the army when compared with the Holland occupational classification. The results revealed that cultural significance of some of the occupations mentioned in the HOC classification needs to be established in Pakistan.

Implications

Present results of the study may be of value to those career counsellors who assist students in the process of making career choices. Based on the five most preferred vocational aspirations of the students, a study was designed to seek expert opinion about personality and vocational interests. The results attained based on students' scores were validated with the opinion of experts of selected occupations to add cultural relevance to the concepts used in the study.

The results of the present study indicated that there is a requirement for urgent and timely intervention at the high school level to guide and counsel the Pakistani youth for the future productive workforce. Career counsellors should be employed in government high school as there is no institutional support or mechanism where career guidance is provided to the students.

Conclusion

The most notable element of Holland's model as applied to secondary school students is that vocational aspirations are prescient of vocational premiums was incompletely upheld in the study. The particularly significant in an educational setting in which students need to settle on an early choice to outline their profession improvement and decisions. Despite the restrictions of the flow study, it spoke to an underlying examination concerning a region that is under investigated in Pakistan and merits further request to illuminate hypothetical improvement here and to direct understudy exhorting and vocation guiding.

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