



RESEARCH PAPER

Factors Shaping Career Pathways of Students with Hearing Impairments: A Comparative Analysis

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ABSTRACT

The study explored what shapes the career paths of students with hearing impairments, focusing on a quantitative, descriptive approach. With limited research addressing this group, this study aimed to fill the gap by investigating influential factors. A purposive sample of 115 students was selected from nine divisions of Punjab, using a validated questionnaire covering ten domains. With a reliability coefficient of 0.995, the survey collected data for analysis. The results highlighted that financial considerations and education are the most significant factors in career choices. Extracurricular activities, global integration, and technological advancements also play notable roles. Personal interests, role models, cultural norms, family influence, and peer groups were found to support career decisions. These elements create a complex, interconnected web influencing career planning. The study found that gaps in these areas often negatively impact career choices. Addressing these barriers is essential for fostering positive career pathways for hearing-impaired students. The study recommends creating comprehensive support systems to effectively empower and guide these students in their career journeys.

KEYWORDS Career Pathways, Factors, Hearing Impairment, Students

Introduction

In Pakistan, individuals with hearing impairments face significant challenges in securing meaningful white-collar jobs. These challenges stem from various systemic barriers which collectively contribute to a harsh reality where opportunities for higher education and employment are limited. Often individuals with HI find themselves at a disadvantage in mainstream educational settings and are frequently overlooked in the job market. They often do not receive the same employment quotas as other categories of disability like visually impaired and physically disabled individuals receive. This disparity stresses the urgent need to address these systemic inequalities and empower individuals with HI to achieve their career pathways.

Literature Review

Pursuing career opportunities is seen as essential for personal and societal development (Blustein & Noumair, 1996). However, individuals with special needs often face unique challenges in this journey in compare to those encountered by their peers. This era is the increasing recognition of workforce inclusion but societal attitudes and stereotypes still continue to pose significant barriers for people with disabilities (Adams & Zúñiga, 2016; Hehir, 2005; Imrie & Hall, 2003; Weinstein et al., 2003).

Within educational settings inadequate accommodations and a lack of inclusive teaching methods hinder access to quality STEM education for students with disabilities (Ahmad, 2015; Harrison et al., 2013; Mitchell & Sutherland, 2020). Transitioning from education to the professional sphere is challenging for HI students in results of these educational disparities. These challenges include workplaces without needed accommodations and biased hiring practices limiting job opportunities (Macdonald, 2014).

Low representation in STEM fields impacts the ability of persons with special needs to find role models and envision viable career paths (Macdonald, 2014). Physical and digital accessibility issues persist both in educational institutions and workplaces (Harrison et al., 2013; Mitchell & Sutherland, 2020).

Networking is crucial for career development but it can be challenging for individuals with disabilities because of inaccessible social events and professional gatherings (Bates & Davis, 2004). Particularly the Deaf community faces marginalization in both education and employment contexts (Mutswanga, 2018; Phillippe & Auvenshine, 2019).

Deaf/hard-of-hearing individuals possess standard intellect and aptitudes but they experience advanced rates of redundancy and underemployment in comparison to their hearing peers (Schroedel & Geyer, 2000). External factors like discrimination and insufficient support systems further intensify livelihood barriers (Foster & Macleod, 2003; Lent et al., 2000; Punch et al., 2004).

This study aims to explore the widespread challenges individuals with HI face in accessing quality education and pursuing meaningful careers. Ultimately, it might be helpful to improve the socioeconomic inclusion and well-being of individuals with HI across the country.

Material and Methods

Nature of the Study

The study followed a quantitative approach with descriptive nature.

Population

The population comprised of HI students. These HI students are studying at middle-higher educational phases in both public & private sectors across Punjab.

Sample Size and Sampling Technique

A purposive sampling method was employed to select 115 participants.

Instrument

Data were collected using a structured questionnaire consisted of 10 domains

Validity & Reliability

The instrument was validated by field experts. After pilot testing a reliability coefficient of 0.995 was estimated.

Data Collection

Surveys were conducted in sign language to ensure accessibility and comprehension.

Data Analysis

Descriptive and inferential statistics, including correlation analysis, were employed to analyze the data.

Ethical Considerations

Ethical approval was obtained, and informed consent was secured from all participants, ensuring confidentiality and respect for participants' autonomy.

Results and Discussion

Table 1
Demographic Summary of HI Students

Sr No.	Variables	Frequency	Percent
1.	Gender		
	Male	74	64.3
	Female	41	35.7
2.	Hearing Loss Onset		
	Acquired	24	20.9
	Congenital	91	79.1
3.	Hearing Loss Nature		
	Hard of Hearing	25	21.7
	Deaf	90	78.3
4.	Level of Education		
	Middle/Elementary	27	23.5
	Secondary	49	42.6
	Higher Secondary	39	33.9
5.	Family Patterns		
	SODA	28	24.3
	CODA	6	5.2
	Both	9	7.8
	None	72	62.6
6.	Sector		
	Public	55	47.8
	Private	60	52.2

Table 2
The perceptions of HI students regarding the impact of their individual interest and enthusiasm

Sr. No.	Statements	Mean	Stand. Deviation
1.	I consider my personal interests in choosing career pathways.	3.47	1.37
2.	My activities or hobbies influence my career pathways.	3.21	1.48

On average, HI students moderately agree that their personal interests play a role in their career considerations with M score of 3.47 and SD of 1.37. However, the variability shows that there are differing opinions among the students.

A moderate agreement among HI students shows that hobbies and activities influence career pathways with M score of 3.21 and SD of 1.48. There is a wider range of responses indicating diverse experiences and levels of influence.

Table 3
The perceptions of HI students regarding the influence of their family

Sr. No.	Statements	Mean	Stand. Deviation
3.	I often convey my career goals to my family.	3.55	1.15
4.	My family support and encourage me to reach my desired career goals.	3.35	1.51
5.	I am pressurized by family to select a particular career path.	2.99	1.26
6.	My family's low expectations about my capability demotivate me to achieve a fruitful career.	2.87	1.40

On average, HI students often engage in conversations about their career goals with their family members with M score of 3.55 and SD of 1.15.

HI students generally feel supported and encouraged by their families with M score of 3.35 and SD of 1.51. Though the higher standard deviation shows that the level of support varies among students.

HI students do feel family pressure when it comes to choosing their career paths with M score of 2.99 and SD of 1.26. But opinions on this statement are quite mixed.

On average, HI students agree that low family expectations can be demotivating with M score of 2.87 and SD of 1.40. There is significant variability in their responses.

Table 4
The perceptions of HI students regarding the influence of educational achievements

Sr. N	Statements	Mean	Stand. Deviator
7.	Performing well in academics is essential for reaching the desired career.	3.84	.88
8.	The limited choices in subjects by school restrict my capacity to select a desired career path.	3.48	1.20
9.	The current education system requires significant enhancements to help us succeed.	3.87	.95

HI students generally agree that performing well in academics is important for reaching their desired careers with M score of 3.84 with an SD of 0.88. There is relatively low variability in their responses.

HI students agree that limited subject choices affect their career decisions with M score of 3.48 and SD of 1.20. There is considerable variability in their perceptions.

A strong consensus shows that the current education system for HI students requires significant enhancements to better support their success with M score of 3.87 and Standard deviation of 0.95. There is a moderate level of agreement among the students.

Table 5
The perceptions of HI students regarding the influence of their peers

Sr. No.	Statements	Mean	Stand. Deviation
10.	My peers' opinions influence my own thoughts and aspirations.	3.32	1.46
11.	I often converse about career choices and aims with peers.	3.40	1.24
12.	My peers' career achievements and choices influence my decisions.	3.18	1.26

HI students moderately agree that their peers' opinions influence their own career thoughts and aspirations with *M* score of 3.32 and *SD* of 1.46. Though there is a significant variation in responses.

HI students often engage in conversations about career options and goals with their peers with *M* score of 3.40 and *SD* of 1.24. These responses are showing moderate variability.

A moderate agreement that the career achievements and choices of the peers influence HI students with average score of 3.18 and an *SD* value is 1.26. There is a range of different perspectives among students.

Table 6
The perceptions of HI students regarding the influence of financial considerations

Sr. No.	Statements	Mean	Stand. Deviation
13.	I feel constrained in choosing my career because of financial difficulties.	3.70	1.17
14.	Financial aid and scholarships help me to pursue my studies succeeding in career goals.	3.76	1.30

HI students often feel constrained in their career choices because of financial difficulties with *M* score of 3.70 and *SD* of 1.17. Although there is some variation in the extent to which they experience this limitation.

There is reflection of a strong belief that financial aid and scholarships are essential for HI students to pursue their studies and career goals with *M* score of 3.76 and *SD* of 1.30. Though there is notable variability in their experiences and perceptions.

Table 7
The perceptions of HI students about the influence of cultural and social standards

Sr. No.	Statements	Mean	Stand. Deviation
15.	Cultural or societal standards exert pressure on me to select specific careers.	3.36	1.39
16.	Societal views on disabilities can lead me to doubt my career pathways.	3.20	1.52
17.	I often feel discouraged by societal beliefs that I cannot succeed in white-collar and handsome jobs.	3.42	1.38

HI students moderately agree that cultural and social standards exert pressure on them to select specific careers with *M* score of 3.36 and *SD* of 1.39. There is a wide range of experiences and perceptions.

A moderate agreement reflects that societal views on disabilities can lead HI students to doubt their career pathways with M score of 3.20 with a standard deviation of 1.52. There is significant variability in responses.

HI students often feel discouraged by societal beliefs that they cannot succeed in white-collar and handsome jobs with M score of 3.42 and SD of 1.38. Although the extent of this discouragement varies widely.

Table 8
The perceptions of HI students about the influence of inspirational figures and mentors

Sr. No.	Statements	Mean	Stand. Deviation
18.	Sharing experiences by mentors inspires me to select my career pathways.	3.52	1.22
19.	I face difficulties in finding local role models having similar experiences.	3.34	1.41
20.	I realize that senior deaf persons also face challenges to have respectful jobs.	3.40	1.43

HI students are significantly motivated by mentors who share similar experiences with M score of 3.52 and SD of 1.22. This shows a relatively consistent pattern of influence.

HI students face difficulties in finding local role models having similar experiences with M score of 3.34 and SD of 1.41. There is significant variability in their access to such resources.

HI students perceive challenges faced by senior deaf individuals in the job market with M score of 3.40 and SD of 1.43. Though responses vary widely in terms of their observations and interpretations.

Table 9
The perceptions of HI students regarding the influence of technological progress

Sr. No.	Statements	Mean	Stand. Deviation
21.	I am eager about the potential of new technologies to improve my career prospects	3.64	1.22
22.	I have practical skills in using technology and recognize its applicability across different job roles.	2.95	1.44

HI students are generally excited about the potential of new technologies to improve their career prospects with M score of 3.64 and SD of 1.22. Although opinions vary somewhat among individuals.

A moderate agreement shows that HI students have practical skills in using technology and recognize its applicability across different job roles with M score of 2.95 and SD of 1.44. There is significant variability in their skill levels and perceptions.

Table 10
The perceptions of HI students regarding the influence of international integration

Sr. No.	Statements	Mean	Sd
23.	Considering international opportunities benefits me to discover career paths.	3.55	1.32

24.	I perceive global job trends as valuable information that helps me to make informed decisions about their careers.	3.58	1.38
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HI students recognize the role of international opportunities in broadening their career exploration with *M* score of 3.55 and *SD* of 1.32. These responses vary in the extent to which they perceive this influence.

HI students perceive global job trends as valuable information that helps them make informed decisions about their careers with *M* score of 3.58 and *SD* of 1.38. Although there is variability in how extensively they use this knowledge.

Table 11
The perceptions of HI students about the influence of extracurricular engagement

Sr. No.	Statements	Mean	Sd
25.	A lack of sufficient tailored extracurricular opportunities are offered to HI students by school.	3.60	1.16
26.	I believe internships and volunteer opportunities allow me to explore various career paths.	3.23	1.39
27.	There is a deficiency in platforms necessary for guidance and counseling to make informed career decisions	3.50	1.39

HI students feel there is a lack of sufficient extracurricular opportunities tailored to their needs with *M* score of 3.60 and *SD* of 1.16. These responses indicate some variability in their experiences.

HI students believe internships and volunteer opportunities allow them to explore various career paths with *M* score of 3.23 and *SD* of 1.39. Although opinions vary on the availability and accessibility of such opportunities.

HI students feel a deficiency in platforms that offer them the necessary guidance and counseling to make informed career decisions with *M* score of 3.50 and *SD* of 1.39. These responses vary in the perceived adequacy of existing support systems.

Inferential Statistics

Independent Sample T-Test

Table 12
Gender Differences among HI students

Factors (Gender)	F	Sig.	t	df	2-tailed Sig.
Individual Interests and Enthusiasm	1.501	.223	3.478	113	.001
			3.304	71.162	.001
Familial Impact	1.693	.196	2.003	113	.048
			2.103	94.980	.038
Educational Achievement	.737	.392	-2.406	113	.018
			-2.299	72.380	.024
Peer Group Influence	1.359	.246	2.061	113	.042
			2.006	76.307	.048
Financial Considerations	.186	.667	.527	113	.599
			.532	85.076	.596
Cultural and Social Standards	8.928	.003	2.113	113	.037
			1.888	60.031	.064
Inspirational Figures and Mentors	1.066	.304	2.031	113	.045

			2.011	80.286	.048
Technological Progress	15.851	.000	2.211	113	.029
			2.080	69.221	.041
International Integration	11.581	.001	.711	113	.478
			.670	69.319	.505
Extracurricular Engagement	.585	.446	-.476	113	.635
			-.479	84.306	.633

Male HI students prioritize personal interests more significantly than females ($M: 3.68$ vs. 2.92 , $p = 0.001$).

Males feel more influenced by family regarding career choices compared to females ($M: 3.35$ vs. 3.05 , $p = 0.048$).

Females perceive education's importance for career success more strongly than males ($M: 3.90$ vs. 3.63 , $p = 0.018$).

Males are more influenced by peers in career decisions than females ($M: 3.47$ vs. 3.00 , $p = 0.042$).

Males consider Technological Progress more critical for future job success than females ($M: 3.59$ vs. 3.11 , $p = 0.029$).

Males feel more pressure from cultural norms in career choices compared to females ($M: 3.52$ vs. 3.09 , $p = 0.037$).

Female HI students seek guidance from inspirational figures and mentors less than males ($M: 3.53$ vs. 3.10 , $p = 0.045$).

Other remaining factors were not significantly different to influence career pathways on the basis of gender of HI students.

Table 13
Comparison based on the Nature of Hearing Loss among HI students

Factors: Nature of HL	F	Sig.	t	df	2-tailed Sig.
Individual Interests and Enthusiasm	1.548	.216	1.155	113	.251
			1.086	35.470	.285
Familial Impact	8.602	.004	-2.243	113	.027
			-1.926	32.157	.063
Educational Achievement	1.277	.261	2.651	113	.009
			2.423	34.316	.021
Peer Group Influence	4.204	.043	1.497	113	.137
			1.759	50.310	.085
Financial Considerations	11.198	.001	.794	113	.429
			.646	30.595	.523
Cultural and Social Standards	11.837	.001	.482	113	.630
			.385	30.096	.703
Inspirational Figures and Mentors	.004	.947	-.088	113	.930
			-.091	40.430	.928
Technological Progress	12.521	.001	-.735	113	.464
			-.614	31.318	.544
International Integration	.324	.570	.753	113	.453
			.743	37.716	.462

Extracurricular Engagement	10.085	.002	.571	113	.569
			.476	31.248	.638

Hard of hearing students felt less influenced by family compared to deaf students ($M: 3.33$ vs. 2.94 , $p = 0.027$).

Hard of hearing students valued educational achievement significantly more than deaf HI students ($M: 3.99$ vs. 3.65 , $p = 0.009$).

There were non-significant differences between deaf and hard of hearing students in all other factors influencing their career pathways.

Table 14
Comparison based on Onset of Hearing Loss of HI Students

Factors: Onset of HL	F	Sig.	t	df	2-tailed Sig.
Individual Interests and Enthusiasm	6.043	.015	.797	113	.427
			.957	48.585	.343
Familial Impact	.000	.984	-1.067	113	.288
			-1.068	36.147	.292
Educational Achievement	.148	.025	-.159	113	.874
			-.228	74.299	.821
Peer Group Influence	2.636	.000	2.602	113	.010
			4.349	108.266	.000
Financial Considerations	.255	.615	-3.018	113	.003
			-2.924	34.683	.006
Cultural and Social Standards	.960	.164	1.316	113	.191
			1.332	36.657	.191
Inspirational Figures and Mentors	3.043	.000	1.904	113	.060
			2.603	65.455	.011
Technological Progress	.088	.768	.145	113	.885
			.139	34.414	.890
International Integration	8.561	.000	1.740	113	.085
			2.457	71.215	.016
Extracurricular Engagement	1.811	.001	1.188	113	.237
			1.514	55.205	.136

Students having acquired onset significantly influenced by their peers more positively compared to those having congenital onset ($M: 3.85$ vs. 3.16 , $p = 0.010$).

Students having congenital onset significantly considered financial considerations more influential than those having acquired onset ($M: 3.88$ vs. 3.35 , $p = 0.003$).

All other factors non-significantly differ in influencing livelihood pathways amongst students having congenital or acquired hearing loss.

Table 15
Comparison based on Sector of Education of HI Students

Factors: Sector	F	Sig.	t	df	2-tailed Sig.
Individual Interests and Enthusiasm	3.542	.062	1.537	113	.127
			1.529	108.787	.129
Familial Impact	11.489	.001	-.914	113	.362
			-.901	95.329	.370
Educational Achievement	29.480	.000	-1.904	113	.059

			-1.849	72.761	.069
Peer Group Influence	20.611	000	.433	113	.666
			.426	94.651	.671
Financial Considerations	3.937	050	2.759	113	.007
			2.728	101.450	.008
Cultural and Social Standards	15.073	000	1.044	113	.299
			1.030	97.865	.306
Inspirational Figures and Mentors	6.843	010	-.159	113	.874
			-.158	102.127	.875
Technological Progress	.920	340	-.349	113	.727
			-.348	110.453	.728
International Integration	13.909	000	-.123	113	.902
			-.121	98.327	.904
Extracurricular Engagement	11.458	001	-.765	113	.446
			-.754	96.149	.453

HI students enrolled in public sector significantly considered financial considerations more important than in the private sector ($M: 3.58$ vs. 3.98 , $p = 0.007$).

All remaining factors non-significantly differ in influencing career pathways between HI students from public and private sectors.

ONE-WAY ANOVA

Table 16
Comparison by Educational Level of HI Students

Factors: Educational Level		Sum of Square	df	Mean Square	F	Sig.
Individual Interests and Enthusiasm	Cross-group	8.70	2	4.350	3.219	.044
	Inside-group	151.37	112	1.352		
	Overall	160.07	114			
Familial Impact	Cross-group	1.84	2	.924	1.483	.231
	Inside-group	69.84	112	.624		
	Overall	71.69	114			
Educational Achievement	Cross-group	.59	2	.296	.867	.423
	Inside-group	38.24	112	.341		
	Overall	38.84	114			
Peer Group Influence	Cross-group	35.72	2	17.858	16.123	.000
	Inside-group	124.05	112	1.108		
	Overall	159.77	114			
Financial Considerations	Cross-group	.502	2	.251	.393	.676
	Inside-group	71.54	112	.639		
	Overall	72.04	114			
Cultural and Social Standards	Cross-group	15.55	2	7.773	7.393	.001
	Inside-group	117.75	112	1.051		
	Overall	133.29	114			
Inspirational Figures and Mentors	Cross-group	16.09	2	8.047	7.177	.001
	Inside-group	125.57	112	1.121		
	Overall	141.66	114			
Technological Progress	Cross-group	8.46	2	4.228	3.428	.036
	Inside-group	138.12	112	1.233		
	Overall	146.58	114			

International Integration	Cross-group	18.39	2	9.194	9.211	.000
	Inside-group	111.80	112	.998		
	Overall	130.19	114			
Extracurricular Engagement	Cross-group	10.28	2	5.137	4.844	.010
	Inside-group	118.79	112	1.061		
	Overall	129.06	114			

Secondary school level HI students ($M: 3.62$) perceive the more significant influence of individual interests and enthusiasm compared to elementary school level ($M: 2.93$) and higher-secondary school level ($M: 3.49$) HI students ($p = .044$).

Higher secondary school level ($M: 3.64$) and secondary school level ($M: 3.59$) HI students recognize the influence of peer group more positively in comparison to middle school level HI students ($M: 2.30$) ($p < .001$).

Secondary school HI students ($M: 3.58$) notice more influence of cultural and social standards in career pathways in comparison to middle school level ($M: 2.70$) and higher secondary ($M: 3.56$) HI students ($p = .001$).

Secondary school level HI students ($M: 3.69$) recognize the more positive influence of inspirational figures and mentors in comparison to middle school level ($M: 2.73$) and in higher-secondary school level ($M: 3.43$) HI students ($p = .001$).

Secondary school HI students ($M: 3.66$) consider the more significant influence of technological progress compared to middle school level ($M: 2.96$) and higher-secondary school level ($M: 3.42$) HI students ($p = .036$).

Secondary school HI students ($M: 3.89$) consider the more positive influence of the international integration in comparison to middle school level ($M: 2.90$) and higher secondary school level ($M: 3.33$) HI students ($p < .001$).

Secondary school level HI students ($M: 3.80$) report the more influence of extracurricular engagement in career pathways in comparison to middle school level ($M: 3.04$) and higher secondary school level ($M: 3.60$) HI students ($p = .010$).

Other remaining factors were not significantly influence the career pathways among HI students based on their educational levels.

Table 17
Comparison by Family Patterns of HI Students

Factors: Family Patterns		Sum of Square	df	Mean Square	F	Sig.
Individual Interests and Enthusiasm	Cross-group	37.42	3	12.474	11.289	.000
	Inside-group	122.65	111	1.105		
	Overall	160.07	114			
Familial Impact	Cross-group	7.69	3	2.562	4.444	.005
	Inside-group	63.99	111	.577		
	Overall	71.69	114			
Educational Achievement	Cross-group	10.23	3	3.409	13.226	.000
	Inside-group	28.61	111	.258		
	Overall	38.84	114			
Peer Group Influence	Cross-group	66.40	3	22.133	26.311	.000
	Inside-group	93.37	111	.841		

	Overall	159.77	114			
Financial Considerations	Cross-group	8.68	3	2.894	5.070	.003
	Inside-group	63.34	111	.571		
	Overall	72.04	114			
Cultural and Social Standards	Cross-group	12.85	3	4.284	3.948	.010
	Inside-group	120.44	111	1.085		
	Overall	133.29	114			
Inspirational Figures and Mentors	Cross-group	51.55	3	17.183	21.165	.000
	Inside-group	90.11	111	.812		
	Overall	141.66	114			
Technological Progress	Cross-group	22.58	3	7.525	6.736	.000
	Inside-group	124.00	111	1.117		
	Overall	146.58	114			
International Integration	Cross-group	32.97	3	10.989	12.546	.000
	Inside-group	97.22	111	.876		
	Overall	130.19	114			
Extracurricular Engagement	Cross-group	46.88	3	15.625	21.103	.000
	Inside-group	82.20	111	.740		
	Overall	129.06	114			

HI students having no specific familial pattern ($M: 3.85$) recognize the significant influence of individual interests and enthusiasm in comparison to SODA familial ($M: 2.64$) pattern, CODA familial ($M: 2.78$) pattern, or both familial ($M: 2.70$) patterns. ($p < .001$).

HI students having both familial patterns ($M: 3.53$) recognize the more significantly positive impact of familial impact in comparison to SODA familial ($M: 2.88$) pattern, CODA familial ($M: 2.73$) pattern, or having non-definite ($M: 3.39$) familial pattern. ($p = .005$).

HI students having no specific familial ($M: 3.96$) pattern recognize the significant influence of educational achievement in comparison to SODA familial ($M: 3.35$) pattern, CODA familial ($M: 3.33$) pattern, or both familial ($M: 3.31$) patterns. ($p < .001$).

HI students having CODA patterns ($M: 4.22$) recognize the significant peer group influence as positive in comparison to SODA familial ($M: 2.19$) pattern, both familial patterns ($M: 2.26$), or having non-definite familial ($M: 3.79$) pattern. ($p < .001$).

CODA HI students ($M: 4.11$) recognize financial considerations significantly more positive in comparison to SODA familial ($M: 3.33$) pattern, both familial ($M: 3.52$) patterns, or having non-definite familial ($M: 3.94$) pattern. ($p = .003$).

HI students with CODA ($M: 3.83$) recognize the more positive influence of cultural and social standards in comparison to SODA familial ($M: 2.82$) pattern, both familial ($M: 3.17$) patterns, or having non-definite familial ($M: 3.57$) pattern. ($p = .010$).

HI students having non-definite familial pattern ($M: 3.89$) recognize inspirational figures and mentors significantly more positive in comparison to SODA familial ($M: 2.49$) pattern, CODA familial ($M: 2.80$) pattern, or both familial ($M: 2.40$) patterns. ($p < .001$).

CODA HI students ($M: 4.00$) recognize technological progress significantly more positive in comparison to SODA familial ($M: 2.70$) pattern, both familial ($M: 3.07$) patterns, or having non-definite familial pattern ($M: 3.69$). ($p < .001$).

CODA HI students ($M: 3.25$) recognize international integration significantly more positive in comparison to SODA familial ($M: 2.70$) pattern, both familial ($M: 2.78$) patterns, or having non-definite familial ($M: 3.87$) pattern. ($p < .001$).

HI students having non-definite specific familial pattern ($M: 4.05$) recognize extracurricular engagement significantly more positive in comparison to SODA familial ($M: 2.71$) pattern, CODA familial ($M: 2.83$) pattern, or both familial ($M: 2.72$) patterns. ($p < .001$).

The influence of all factors according to the family patterns has significant influence on career pathways of HI students.

Table 18
Correlations Analysis of Factors shaping Career pathways among HI students

Factors		IIE	FI	EA	PGI	FC	CSS	IFM	TP	II	EE
Individual Interests and Enthusiasm	Pearson's Coefficient		648**	618**	626**	689**	593**	665**	664**	684**	586*
	2-tailed p.		.000	.000	.000	.000	.000	.000	.000	.000	.000
	Sample Size	115	115	115	115	115	115	115	115	115	115
Familial Impact	Pearson's Coefficient	648**		637**	332**	529**	686**	405**	460**	443**	350*
	2-tailed p.	.000		.000	.000	.000	.000	.000	.000	.000	.000
	Sample Size	115	115	115	115	115	115	115	115	115	115
Educational Achievement	Pearson's Coefficient	618**	637**		477**	529**	564**	542**	448**	613**	598*
	2-tailed p.	.000	.000		.000	.000	.000	.000	.000	.000	.000
	Sample Size	115	115	115	115	115	115	115	115	115	115
Peer Group Influence	Pearson's Coefficient	626**	332**	477**		401**	636**	766**	513**	762**	633*
	2-tailed p.	.000	.000	.000		.000	.000	.000	.000	.000	.000
	Sample Size	115	115	115	115	115	115	115	115	115	115
Financial Considerations	Pearson's Coefficient	689**	529**	529**	401**		446**	339**	656**	485**	471*
	2-tailed p.	.000	.000	.000	.000		.000	.000	.000	.000	.000
	Sample Size	115	115	115	115	115	115	115	115	115	115
Cultural and Social Standards	Pearson's Coefficient	593**	686**	564**	636**	446**		596**	414**	642**	535*
	2-tailed p.	.000	.000	.000	.000	.000		.000	.000	.000	.000
	Sample Size	115	115	115	115	115	115	115	115	115	115
Inspirational Figures and Mentors	Pearson's Coefficient	665**	405**	542**	766**	339**	596**		466**	808**	866*
	2-tailed p.	.000	.000	.000	.000	.000	.000		.000	.000	.000
	Sample Size	115	115	115	115	115	115	115	115	115	115
Technological Progress	Pearson's Coefficient	664**	460**	448**	513**	656**	414**	466**		684**	555*
	2-tailed p.	.000	.000	.000	.000	.000	.000	.000		.000	.000
	Sample Size	115	115	115	115	115	115	115	115	115	115
International Integration	Pearson's Coefficient	684**	443**	613**	762**	485**	642**	808**	684**		775*
	2-tailed p.	.000	.000	.000	.000	.000	.000	.000	.000		.000
	Sample Size	115	115	115	115	115	115	115	115	115	115
Extracurricular Engagement	Pearson's Coefficient	586**	350**	598**	633**	471**	535**	866**	555**	775**	
	2-tailed p.	.000	.000	.000	.000	.000	.000	.000	.000	.000	
	Sample Size	115	115	115	115	115	115	115	115	115	115

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

The findings reveal strong relationships between various factors and overall career perspectives among HI students. Individual interests and enthusiasm (coefficient = 0.648), familial impact (0.637), educational achievement (0.618), and peer group influence (0.626) all show strong positive correlations with broader career perspectives. Financial considerations (0.689), cultural and social standards (0.593), inspirational figures and mentors (0.665), technological progress (0.664), international integration (0.684), and extracurricular engagement (0.586) also exhibit significant positive relationships.

These results indicate that higher perspectives in one factor are consistently associated with stronger perspectives in other factors, highlighting the complex and multifaceted nature of their career development considerations. All relationships were statistically significant ($p = 0.000$).

Discussion

HI students are intrinsically motivated because they consider their personal interests in pursuing their career paths (Bojuwoye & Mbanjwa, 2006; Lent et al., 2010). Family's expectations, communication patterns and their status play a crucial role in boosting confidence of their children to make informed decisions about their career (Agarwala, 2008; Howard et al., 2009).

Academic achievements are important for career development. However, HI students often face challenges in achieving the same academic levels as their hearing peers. Limited subject choices and the need for educational system improvements remain concerns (Arbona, 2000; Power, 1998). HI students reported that peer group influence also plays a considerable role in their career choices (Bojuwoye & Mbanjwa, 2006; Cheung & Arnold, 2014; Howard et al., 2009).

HI students face financial barriers often limit career choices for them (Mehta et al., 2011; Mitchall & Jaeger, 2018). For deaf community, our society is still narrowing minded. They set their low standard norms according to their limited school of thought that special needs persons cannot do smart jobs but only substandard. So, societal attitudes towards disabilities can create doubts about their career visions (Mpfu & Wilson, 2004). HI students are in difficult situation to find successful role models in their community which demotivate and detract them about their career planning. Mentorship is crucial in career development because it offers support and networking opportunities (Lazarus et al., 2013).

HI students are enthusiastic about technology and its potential to broaden their career opportunities. But there is no proper training during and after their education. Although the International Labor Organization's (ILO) set goals of promoting decent work for all by enhancing technological literacy among people with disabilities (ILO, 2007).

While HI students generally view international integration positively but they face challenges like insufficient guidance and limited networking opportunities from educational institutions (Parks-Yancy, 2012; Storlie et al., 2016; Tate et al., 2015). They also reported that there is extensive need for more sophisticated extracurricular engagement and better career counseling services. Research shows that inadequate

occupational preparation and professional guidance often lead towards suboptimal career selections for these individuals (Ochs & Roessler, 2001).

The findings of the study reveal the complex interplay of these factors in shaping the career paths of HI students. If one is not provided up to the standard, it will affect the influence of other factors in a negative way. Therefore, comprehensive support systems are needed to facilitate their career development effectively.

Conclusions

The study provides a deeper insight about the influence of factors acting as enablers and barriers to the career pathways of HI students. Due to the inadequacies, ambiguities, and accessibility issues, mostly these factors do not influence the career pathways of HI students such a positive way to pursue a standard living. The sophisticated balance in these factors is required to foster successful career development for HI students. Any deficiencies in these areas can disrupt the interconnected network of positive influences. Creating an environment where HI students can fully realize their career pathways is possible by addressing these inadequacies. Thus, an immediate call is urgent for bridging the gaps and strengthens the support system for HI students.

Recommendations

Following are the recommendations of the study:

- Career development programs should be offered to HI students for pursuing sustainable employment opportunities.
- Parental guidance and counselling are essential for positively shaping the career pathways of HI students.
- Tailored career guidance and counselling services should be offered to HI students early on and consistently.
- Advocacy efforts need to focus on policy changes that promote equal access to employment, eliminate discrimination, and enhance workplace accommodations for individuals with HI.
- Financial aid is needed to ensure that HI students have equitable access to higher education and career development opportunities.
- It is crucial to foster shared efforts among academia, industry, and advocacy stakeholders to drive meaningful change.

References

- Adams, M., & Zúñiga, X. (2016). Getting started: Core concepts for social justice education. In *Teaching for diversity and social justice* (pp. 95-130). Routledge.
- Agarwala, T. (2008). Factors influencing career choice of management students in India. *Career Development International*, 13(4), 362-376.
- Ahmad, F. K. (2015). Use of assistive technology in inclusive education: making room for diverse learning needs. *Transcience*, 6(2), 62-77.
- Arbona, C. (2000). The development of academic achievement in school aged children: Precursors to career development. In S. D. Brown & R. W. Lent (Eds.), *Handbook of counseling psychology* (3rd ed., pp. 270-309).
- Bates, P., & Davis, F. A. (2004). Social capital, social inclusion and services for people with learning disabilities. *Disability & Society*, 19(3), 195-207.
- Blustein, D. L., & Noumair, D. A. (1996). Self and identity in career development: Implications for theory and practice. *Journal of Counseling & Development*, 74(5), 433-441.
- Bojuwoye, O., & Mbanjwa, S. (2006). Factors impacting on career choices of Technikon students from previously disadvantaged high schools. *Journal of Psychology in Africa*, 16(1), 3-16.
- Cheung, R., & Arnold, J. (2014). The impact of career exploration on career development among Hong Kong Chinese university students. *Journal of College Student Development*, 55(7), 732-748.
- Foster, S., & MacLeod, J. (2003). Deaf people at work: Assessment of communication among deaf and hearing persons in work settings. *International journal of audiology*, 42(sup1), S128-S139.
- Harrison, J. R., Bunford, N., Evans, S. W., & Owens, J. S. (2013). Educational accommodations for students with behavioral challenges: A systematic review of the literature. *Review of educational research*, 83(4), 551-597.
- Hehir, T. (2005). *New directions in special education: Eliminating ableism in policy and practice*. Harvard Education Press.
- Howard, K. A., Ferrari, L., Nota, L., Solberg, V. S. H., & Soresi, S. (2009). The relation of cultural context and social relationships to career development in middle school. *Journal of vocational behavior*, 75(2), 100-108.
- Imrie, R., & Hall, P. (2003). *Inclusive design: designing and developing accessible environments*. Taylor & Francis.
- International Labour Office. Director-General. (2007). *Director-General's Introduction to the International Labour Conference: Decent Work for Sustainable Development* (Vol. 91). International Labour Organization.

- Lazarus, K., Mohammed, O., & Adigun, O. (2013). Family and teachers factors as determinant of career decisions among adolescents with hearing impairment in Ogun state, Nigeria. *Journal of Education and Practice, 4*(8), 161-168.
- Lent, R. W., Brown, S. D., & Hackett, G. (2000). Contextual supports and barriers to career choice: A social cognitive analysis. *Journal of counseling psychology, 47*(1), 36.
- Lent, R. W., Paixao, M. P., Da Silva, J. T., & Leitão, L. M. (2010). Predicting occupational interests and choice aspirations in Portuguese high school students: A test of social cognitive career theory. *Journal of Vocational Behavior, 76*(2), 244-251.
- Macdonald, A. (2014). "Not for people like me?" Under-represented groups in science, technology and engineering. *Wise Campaign*.
- Mehta, S. S., Newbold, J. J., & O'Rourke, M. A. (2011). Why do first-generation students fail?. *College Student Journal, 45*(1), 20-36.
- Mitchall, A. M., & Jaeger, A. J. (2018). Parental influences on low-income, first-generation students' motivation on the path to college. *The Journal of Higher Education, 89*(4), 582-609.
- Mitchell, D., & Sutherland, D. (2020). *What really works in special and inclusive education: Using evidence-based teaching strategies*. Routledge.
- Mpofu, E., & Wilson, K. B. (2004). Opportunity structure and transition practices with students with disabilities: The role of family, culture, and community. *Journal of Applied Rehabilitation Counseling, 35*(2), 9-16.
- Mutswanga, P. C. (2018). Enhancing realistic hopes and aspirations toward vocational choices: Focus on deaf secondary students in Zimbabwe. In *The Routledge Handbook of Disability in Southern Africa* (pp. 196-208). Routledge.
- Ochs, L. A., & Roessler, R. T. (2001). Students with disabilities: How ready are they for the 21st century?. *Rehabilitation Counseling Bulletin, 44*(3), 170-176.
- Parks-Yancy, R. (2012). Interactions into opportunities: Career management for low-income, first-generation African American college students. *Journal of College Student Development, 53*(4), 510-523.
- Phillippe, T., & Auvenshine, D. (2019). Career development among deaf persons. *JADARA, 19*(1), 9-17.
- Power, D. (1998). Deaf and hard of hearing students. *Educating Children with Special Needs. Sydney: Prentice Hall Pty Ltd, 345-381*.
- Punch, R., Hyde, M., & Creed, P. A. (2004). Issues in the school-to-work transition of hard of hearing adolescents. *American Annals of the Deaf, 149*(1), 28-38.
- Schroedel, J. G., & Geyer, P. D. (2000). Long-term career attainments of deaf and hard of hearing college graduates: Results from a 15-year follow-up survey. *American Annals of the Deaf, 145*(4), 303-314.

- Storlie, C. A., Mostade, S. J., & Duenyas, D. (2016). Cultural trailblazers: Exploring the career development of Latina first-generation college students. *The Career Development Quarterly*, 64(4), 304-317.
- Tate, K. A., Caperton, W., Kaiser, D., Pruitt, N. T., White, H., & Hall, E. (2015). An exploration of first-generation college students' career development beliefs and experiences. *Journal of Career Development*, 42(4), 294-310.
- Weinstein, J., Whittington, C., & Leiba, T. (2003). *Collaboration in social work practice*. Jessica Kingsley Publishers.