



Need Analysis of Free-lance Computer Courses to Enhance Economic Independence of Female Students at Higher Secondary Level

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ABSTRACT

This study aimed to explore the need and effectiveness of freelance computer courses in promoting economic independence among female students at the higher secondary level. Specifically, it investigated students' opinions regarding these courses and examined differences in perceptions among the participants. The population comprised female students enrolled at the higher secondary level, from which a sample of 1,390 students was selected using stratified random sampling. Data were collected through a structured questionnaire and analyzed using SPSS-26. Findings revealed that students generally recognize the importance of freelance computer courses in enhancing economic independence, while notable differences in opinions were observed based on demographic and academic factors. The study underscores the significance of integrating practical computer and freelancing skills into higher secondary curricula to empower female students economically and socially.



Introduction

Freelancing involves providing specialized services independently, primarily through online platforms. A freelancer is an individual who works autonomously rather than being permanently employed by a single organization. With the expansion of globalization and digital connectivity,

demand for freelance services has grown worldwide, particularly in developing countries. Nations such as India, Bangladesh, and Pakistan have become major contributors to the global freelancing market by supplying a large pool of skilled independent workers (Khan et al., 2022). One notable advantage of freelancing is its relative inclusivity; opportunities are generally based on skills rather than gender. In traditional societies like Pakistan, freelancing offers men and women comparable access to income-generating activities, enabling broader participation in economic life (Khan et al., 2022).

Compared to freelancers in India and other South Asian countries, Pakistani freelancers often charge lower rates. However, they are widely recognized for their technical competence and professional expertise, which attracts clients from European markets seeking cost-effective outsourcing solutions (Codementor, 2017). This competitive pricing combined with skill proficiency strengthens Pakistan's position in the international digital labor market.

Freelancing is particularly appealing to women who remain at home due to family responsibilities. Housewives and women with childcare duties increasingly view online self-employment as a flexible means of earning income while staying within their domestic environment. Both educated and less formally educated women are encouraged to pursue freelancing to supplement household earnings and achieve personal aspirations (Iftikhar, 2017). It is estimated that more than 100,000 active freelancers operate from Pakistan, where "active" typically refers to individuals earning at least \$100 per month. These workers contribute valuable foreign exchange to the national economy.

Freelance export remittances rose significantly, reaching approximately US\$219 million during the first seven months of fiscal year 2020–21 (July 2020–January 2021), with projections suggesting they would exceed US\$350 million by the fiscal year's end. This growth aligns with increased governmental investment in the information technology sector, recognizing freelancing as an important economic driver. During the same period, unemployment trends fluctuated, peaking at 4.45% in 2019 after varying rates in preceding years (Heeks, 2017).

Freelancers typically promote their services through online platforms, digital marketplaces, print advertisements, or personal networks (Wood, 2018). Some operate through intermediary agencies that market their services to clients as part of outsourcing arrangements. Others obtain assignments via professional associations or internet-based networking (Primastomo, 2018). Freelancing also enables individuals in remote areas to access higher-level employment without relocating. Establishing a freelance career generally requires basic digital tools, including a computer, reliable internet access, communication applications, and secure online payment methods (Monticelli, 2010). Clients frequently select freelancers based on their portfolios, which demonstrate prior work and expertise (Shevchuk, 2018). However, a gap often exists between formal education systems and the skills demanded in digital freelance markets, leaving many women insufficiently prepared for certain online occupations (Nawaz et al., 2020).

Statement of the Problem

This study aimed to conduct a needs assessment of freelance-oriented computer courses designed to strengthen the economic autonomy of female students in higher education. The research explored how engagement in freelancing can contribute to women's self-reliance and long-term financial stability. Particular attention was given to the obstacles women encounter, including restricted decision-making power within families, limited digital literacy, challenges in independently navigating online platforms, concerns about establishing a professional identity, and barriers to achieving financial independence. By examining these dimensions, the study sought to

promote self-employment as a viable pathway for young people in Pakistan, especially women. The research design incorporated two components: a structured survey and an online questionnaire that participants could complete at their convenience. This approach enabled broader participation and accommodated respondents' varying schedules. The study highlighted that women in Pakistan are increasingly assuming active roles in the digital economy and contributing meaningfully to its growth. However, despite this progress, several constraints remain. These include limited awareness of effective work-from-home practices, lack of structured training in freelancing skills, and psychological barriers such as fear of failure or making mistakes. By addressing gaps in existing self-employment research and refining methodological approaches, this study offers practical insights for policymakers and educational institutions. It also situates freelancing within the broader context of economic transformation and productivity shifts in Pakistan. Through statistical analysis and social survey methods, the researcher identified both the advantages and potential drawbacks associated with the global expansion of self-employment.

Objectives of the Study

Following objectives were achieved in this study:

1. To investigate the student's opinion regarding the free-lance computer courses to enhance economic independence of female students at higher secondary level.
2. To ascertain the difference between students' opinion regarding the free-lance computer courses to enhance economic independence of female students at higher secondary level.

Research Questions

Following research questions were raised to guide the study:

1. What is the students' opinion regarding the free-lance computer courses to enhance economic independence of female students at higher secondary level?
2. Is there any difference between students' opinion regarding the free-lance computer courses to enhance economic independence of female students at higher secondary level on the base of locality i.e. urban and rural?

Significance of the Study

This study provides valuable insights for educators, school principals, and policymakers seeking to understand the growing demand for freelance-oriented computer courses aimed at strengthening the economic independence of female students at the higher secondary level. By identifying skill gaps and training needs, the findings offer practical guidance for curriculum planners and institutional leaders who wish to align educational programs with emerging digital labor market opportunities. The results can support decision-makers in designing targeted computer courses that equip female students with relevant freelancing competencies, such as digital literacy, online communication, and platform-based work skills. For policymakers, the evidence generated by this research can assist in formulating strategies that promote women's participation in the digital economy, particularly in contexts like Pakistan where expanding female workforce engagement remains a development priority. In addition, students may use this research to better understand the potential of freelancing as a viable career pathway, while researchers can build upon its findings to explore broader dimensions of digital self-employment and gender empowerment.

Literature Review

In recent years, freelancing has increasingly been recognized as a viable pathway for income generation and economic self-reliance. Despite its growth, however, a noticeable gender gap

persists within digital labor markets, where women remain underrepresented. Addressing this imbalance requires equipping female students at the higher secondary level with relevant computer competencies and practical knowledge aligned with freelance work. This review examines the importance of structured freelancing-oriented computer courses in enhancing the economic independence of female learners, while also assessing the potential advantages and challenges associated with implementing such programs.

Freelancing generally refers to online, skill-based work performed independently rather than under long-term contractual employment. According to Khan et al. (2022), freelancers are self-employed individuals who provide services to multiple clients without permanent attachment to a single employer. With the expansion of globalization and digital connectivity, demand for freelance services has risen substantially, particularly in developing countries. Nations such as India, Bangladesh, and Pakistan have emerged as significant contributors to the global freelancing workforce. One of the notable features of freelancing is its relative openness, as opportunities are generally skill-based rather than determined by gender.

In Pakistan, active freelancers—commonly defined as individuals earning at least \$100 per month—have contributed substantially to national export revenues. Freelance remittances reached approximately US\$219 million during the first seven months of fiscal year 2020–21 (July 2020–January 2021), with projections exceeding US\$350 million by the end of that fiscal year. This growth corresponds with increased governmental investment in the information technology sector, recognizing freelancing as a strategic component of economic development. At the same time, unemployment trends have fluctuated, with the rate peaking at 4.45% in 2019 (Heeks, 2017). The economic disruption caused by the COVID-19 pandemic further intensified reliance on remote work and digital employment opportunities (Hassan, Iqbal, & Shakir, 2020).

Structural barriers continue to limit women's participation in formal employment. Factors such as childcare and eldercare responsibilities, restricted job availability, limited access to affordable early education, and lower educational attainment significantly constrain women's economic engagement (Kathuria, 2017). In this context, self-employment through freelancing offers an alternative route to economic participation. This study therefore seeks to examine how expanding digital markets can foster women's involvement in self-employment and evaluate the state's capacity to support such participation (Graham & Anwar, 2019). Additionally, scholarly discourse increasingly links self-employment with broader themes of productivity, innovation, and performance within evolving labor markets.

The concept of freelancing encompasses diverse modes of work. A freelancer is typically understood as an individual who does not hold long-term full-time employment with a single organization (Wood, 2018). Some freelancers operate through intermediary agencies that market their services to clients as part of outsourcing arrangements, while others independently secure assignments through professional networks or online platforms (Primastomo, 2018). This model allows individuals residing in remote or underserved regions to access high-skilled employment without geographical relocation.

To establish themselves in the freelance marketplace, individuals generally register on digital platforms, define the services they offer, and determine competitive pricing strategies. Initially, rates may be set lower due to limited experience and the need to build credibility. Over time, freelancers develop a portfolio showcasing completed projects and professional achievements. Clients typically evaluate these portfolios when selecting candidates for assignments, making demonstrated competence a crucial factor in securing work (Shevchuk, 2018).

Nawaz et al. (2020) argue that many women lack the competencies required for digital freelance work because these skills are not adequately covered in formal education systems. In response, the Government of Pakistan has introduced numerous free technical training programs aimed at improving women's digital capabilities. These initiatives reportedly enabled approximately 15,000 individuals to begin working independently, while nearly 500,000 participants enrolled in training programs in 2020. As a result, women's employment prospects in online markets have improved significantly, particularly in technology-driven sectors.

Survey findings by Malik et al. (2020) indicate that nearly one-quarter of Pakistan's self-employed workforce consists of women, many of whom reportedly deliver work of equal or higher quality compared to men. The same study suggests that female freelancers earn, on average, slightly more per day than their male counterparts. To strengthen this progress, the government has emphasized a "train and gain" strategy focused on enhancing IT-sector capacity, fostering digital entrepreneurship, and improving income potential for women. Malik et al. (2020) further note that Pakistan's early engagement with outsourcing and digital service exports laid the foundation for its current growth in freelancing.

Ahmed (2017) reports that Pakistan ranks among the top global contributors in the freelancing industry, following the United States, India, and Bangladesh in terms of sales volume. Additional sources suggest that approximately one million Pakistanis are registered on major freelancing platforms, placing the country among the leading participants in the global digital labor market (Haq et al., 2018; Iftikhar, 2017). Pakistan's information technology sector contributes an estimated \$2.1 billion annually in IT-related service exports, reflecting the growing significance of digital self-employment.

Online labor platforms such as Upwork, Fiverr, Freelancer, Guru, and PeoplePerHour have expanded rapidly in Pakistan, creating accessible channels for independent professionals. Pakistani freelancers are often regarded as highly skilled while offering comparatively competitive rates, which makes them attractive to European clients seeking cost-effective outsourcing solutions (Codementor, 2017).

Iftikhar (2017) emphasizes that freelancing offers flexible income-generating opportunities for Pakistani women, including those who prefer to work from home due to social or family considerations. Both educated and less formally educated women can leverage digital platforms to supplement household income and pursue personal ambitions. v

Research Methodology

Research Design

This study adopted a cross-sectional survey design. In cross-sectional research, both exposure variables and outcome variables are measured simultaneously for each participant at a single point in time. Unlike case-control studies, where participants are selected based on outcome status, or cohort studies, where selection is based on exposure status, cross-sectional studies recruit participants according to predefined inclusion and exclusion criteria (Setia, 2016). This design is particularly suitable for assessing prevailing conditions, attitudes, or needs within a specific population. Cross-sectional surveys are generally cost-effective and less time-consuming compared to longitudinal approaches, making them practical for educational research contexts. However, due to the simultaneous measurement of variables, establishing causal relationships is inherently limited. While associations can be identified, determining temporal sequencing between cause and effect remains challenging (Setia, 2016). The study was conducted using a quantitative

methodology, enabling systematic data collection and statistical analysis to evaluate the demand for freelancing-oriented computer courses and their perceived impact on economic empowerment.

Population

The target population comprised female students enrolled at the higher secondary level who expressed interest in pursuing freelancing as a potential career pathway. The focus on female students was deliberate, as girls in developing contexts such as Pakistan often encounter structural, cultural, and economic barriers that restrict their access to education, employment, and financial independence. Promoting gender equality and enhancing women’s economic participation are critical components of sustainable development and national progress. Specifically, all female students studying in higher secondary schools within the Multan district constituted the accessible population for this study. By concentrating on this group, the research aimed to identify skill gaps, training needs, and perceptions regarding freelance computer education as a tool for economic autonomy.

Table 1: Class Wise and Tehsil Wise Distribution of Population for Female students of Higher Secondary Schools

Tehsil	Class 11	Class 12	Total
Multan City	1738	1410	3148
Multan Sadar	156	130	286
Shuja Abad	634	566	1200
Total	2528	2106	4634

(Source: https://schoolportal.punjab.gov.pk/sed_census/ , 2023)

Total population of the study was 4634 female students (2528 of 11th class and 2106 of 12th Class) that were studying at higher secondary level.

Sample of the Study

The population is divided in large strata. Therefore, stratified random sampling technique was used to select the sample of the study. By using stratified random sampling, 30% students were selected from 3x tehsils of district Multan.

Table 2: Class wise and Tehsil Wise Distribution of Sample for Female students of Higher Secondary Schools

Tehsil	Class 11	Class 12	Total	%
Multan City	521	423	944	30%
Multan Sadar	47	39	86	30%
Shuja Abad	190	170	360	30%
Total	758	632	1390	30%

Sample

Table 2 indicates that the total sample comprised 1,390 female students enrolled at the higher secondary level. Among them, 758 students were studying in 11th grade, while 632 students were enrolled in 12th grade. This distribution ensured representation from both academic levels, allowing for a more comprehensive understanding of perceptions across different stages of higher secondary education. By including students from both grades, the study enhanced the reliability of findings related to the demand for freelancing-oriented computer courses and their perceived role in promoting economic independence. The relatively large sample size also strengthened the

statistical power of the study and improved the generalizability of the results within the selected district.

Development of Research Tool

A structured questionnaire based on a five-point Likert scale was employed as the primary data collection instrument. The scale ranged from Strongly Agree to Strongly Disagree, enabling respondents to express varying degrees of agreement with each statement. The researcher developed the instrument to specifically address the objectives of assessing the need for freelancing computer courses and their potential contribution to economic autonomy. The questionnaire items were designed to measure multiple dimensions, including awareness of freelancing opportunities, perceived benefits of digital skills, barriers to participation, confidence in using online platforms, and readiness for self-employment. Content validity was ensured by aligning the statements with existing literature on digital labor markets and women's empowerment. The structured format facilitated quantitative analysis and comparison across respondents.

Hypothetical Framework

The hypothetical framework guiding the questionnaire was developed to examine the relationship between freelancing computer education and the economic independence of female students at the higher secondary level. The framework assumed that access to structured computer training (independent variable) enhances digital competence, professional confidence, and awareness of freelance opportunities (mediating variables). These factors, in turn, contribute to improved employability, income-generation potential, and financial autonomy.

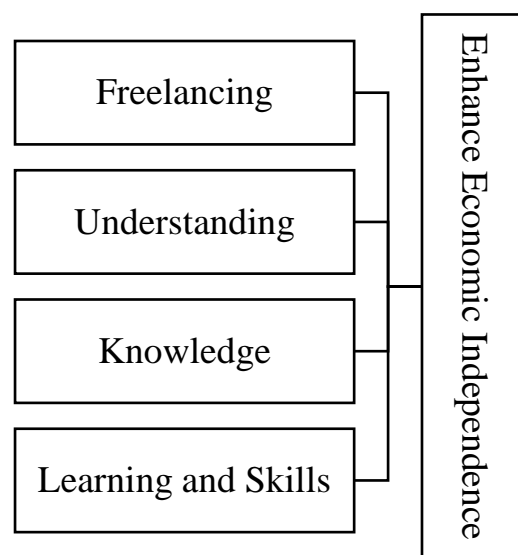


Figure 1: Hypothetical Framework Model

Validation of Research Tool

To ensure the validity of the research instrument, the researcher undertook a systematic validation process that included expert review and pilot testing. Prior to conducting the pilot study, the questionnaire was submitted to four subject specialists (Appendix A) to assess its content validity. These experts possessed academic and professional expertise relevant to freelancing education, digital skills training, and research methodology. They carefully examined the instrument for clarity, relevance, alignment with research objectives, and appropriateness of language for higher

secondary students. The experts provided detailed feedback and constructive suggestions regarding item wording, conceptual coverage, and structural organization.

Following expert validation, a pilot study was conducted to further evaluate the effectiveness of the instrument. Participants completed the questionnaire, and their responses were analyzed to determine the clarity of the questions, the adequacy of instructions, and the average time required for completion. The pilot phase also helped identify any ambiguities, misunderstandings, or practical difficulties encountered by respondents.

Table 3: Participants for Pilot Testing

Tehsil	Higher Secondary Female Students		
	11 th	12 th	Total
Multan	19	13	32

Table 3 shows the participants of pilot study. They were 32 (19 (11th class) & 13 (12th class)) female higher secondary female students.

Reliability of Tool

Cronbach's alpha coefficient was utilized in order to evaluate the research instrument's level of dependability. The coefficient is a measurement that indicates how closely related the questionnaire items are to one another in terms of determining the intended construct that they are trying to measure.

Table 4: Reliability of Tool

Statements	Respondents	Cronbach Alpha
40	Higher Secondary School Students	.77

Data Collection and Data Analysis Techniques

Participants were given a brief orientation about the purpose of the instrument and clear instructions on how to mark their responses on the optical answer sheet according to their level of agreement. Once completed, the questionnaires were collected and the optical sheets were processed for data entry. The responses were compiled to generate overall ratings and item-wise distributions. Frequencies were calculated for each statement to identify patterns in participants' perceptions, particularly regarding their views on freelancing education and economic independence. A total of 1,400 questionnaires were distributed, out of which 1,390 were properly completed and returned, yielding a response rate of 99.28%, which reflects a high level of participant engagement and enhances the credibility of the findings. For statistical analysis, the data were analyzed using the Statistical Package for the Social Sciences (SPSS). Descriptive statistics, including frequency, percentage, mean, and standard deviation, were computed to summarize participants' responses. Inferential statistical techniques such as the t-test and Analysis of Variance (ANOVA) were applied to examine differences between groups and determine the statistical significance of observed variations. This combination of descriptive and inferential analysis ensured a comprehensive interpretation of the collected data.

Results

Demographic Information of Respondents

This section presents/ deals with demographics information of students.

Table 5: Demographics information and variable of students

Demographic Variables		Participants Response	
		Frequency	%Age
Subject	Science	716	53.8%
	Arts	615	46.2%
Locality	Urban	683	51.3%
	Rural	648	48.7%
Monthly Expenses	1-5000	528	39.6
	6-10000	441	33.1
	More than 10000	362	27.1
Interest in Computer	Yes	1156	86.9%
	No	175	13.1
Use Internet	Daily	338	25.4%
	Weekly	290	21.8%
	Monthly	264	19.8%
	Never	439	33.0%

The demographic analysis of the participants reveals a fairly balanced distribution across academic streams and localities. Among the 1,390 female students surveyed, 53.8% were enrolled in the science stream while 46.2% belonged to the arts stream, indicating a slightly higher representation from science. In terms of locality, 51.3% of participants were from urban areas and 48.7% from rural areas, reflecting a near-equal urban-rural composition. Monthly expenses varied, with 39.6% of students spending between 1,000–5,000 PKR, 33.1% spending 6,000–10,000 PKR, and 27.1% reporting expenses above 10,000 PKR, suggesting a moderate financial diversity among the respondents. Regarding interest in computers, a significant majority (86.9%) expressed a positive inclination, while only 13.1% reported a lack of interest, highlighting a strong overall enthusiasm toward technology. Internet usage patterns showed variability, with 25.4% using it daily, 21.8% weekly, 19.8% monthly, and 33% never accessing it. These findings indicate that while interest in computers is high, regular digital engagement is limited for a substantial portion of students, particularly those who may lack access or exposure, which has implications for implementing computer-based courses and freelance skill training effectively.

Descriptive Analysis of Students Data

This section presents descriptive analysis of students’ data.

Table 6: Explore the Knowledge on the basis of students’ opinion

Sr.#	Statements of Questions	SA f (%)	A f (%)	N f (%)	SA f (%)	SDA f (%)	M	SD
1.	I have knowledge about freelancing.	432 (32.5)	432 (32.5)	107 (8.0)	264 (19.8)	105 (7.9)	3.60	1.32
2.	The rise of technology has made it easier for me to work as freelancer.	354 (26.6)	472 (35.5)	115 (8.6)	277 (20.8)	113 (8.5)	3.50	1.30
3.	Freelancing has the potential to	378	457	118	280	98	3.55	1.29

	disrupt traditional employment models.	(28.4)	(34.3)	(8.9)	(21.0)	(7.4)		
4.	I am familiar with what freelancing is and how it works.	395 (29.7)	472 (35.5)	135 (10.1)	236 (17.7)	93 (7.0)	3.63	1.26
5.	Freelancing is a type of self-employment where the female students can work.	347 (26.1)	533 (40.0)	124 (9.3)	239 (18.0)	88 (6.6)	3.61	1.23
6.	Freelancing as a career is an ideal option for females.	456 (34.3)	441 (33.1)	153 (11.5)	214 (16.1)	67 (5.0)	3.75	1.22

The analysis of participants' responses regarding freelancing indicates a generally positive perception among female higher secondary students. For the first statement, "I have knowledge about freelancing," 65% of students either strongly agreed or agreed, with a mean of 3.60 and a standard deviation of 1.32, suggesting moderate familiarity. Regarding the impact of technology, 62.1% acknowledged that technological advancements have made freelancing more accessible, reflecting optimism about leveraging digital tools for economic activities. When asked about freelancing's potential to disrupt traditional employment models, 62.7% agreed or strongly agreed, indicating awareness of freelancing as an emerging alternative to conventional jobs. Familiarity with the mechanics of freelancing was high, with 65.2% in agreement, while 66.1% recognized freelancing as a viable self-employment option for female students, highlighting its relevance for economic empowerment. Notably, 67.4% of respondents considered freelancing an ideal career option for females, the highest agreement among all statements, supported by a mean of 3.75 and a lower standard deviation of 1.22, signifying consensus.

Table 7: Freelancing on the basis of Students' Opinion

Sr.#	Statements of Questions	SA f (%)	A f (%)	N f (%)	DA f (%)	SDA f (%)	M	SD
12	I am aware of the legal and financial requirements for freelancing.	443 (33.3)	370 (27.8)	177 (13.3)	250 (18.8)	91 (6.8)	3.61	1.29
13	I have an idea of how to set appropriate rates for my freelance services.	395 (29.7)	503 (37.8)	113 (8.5)	212 (15.9)	108 (8.1)	3.64	1.27
14	I believe that freelancing can enhance my economic independence.	348 (26.1)	518 (38.9)	125 (9.4)	253 (19.0)	87 (6.5)	3.59	1.24
15	I feel confident in my ability to learn computer skills for freelancing.	309 (23.2)	519 (39.0)	203 (15.3)	206 (15.5)	94 (7.1)	3.55	1.20
16	I am willing to invest time in learning computer skills for freelancing.	385 (28.9)	598 (44.9)	180 (13.5)	137 (10.3)	31 (2.3)	3.87	1.015
17	I am willing to invest money in learning computer skills for freelancing.	505 (37.9)	558 (41.9)	97 (7.3)	137 (10.3)	34 (2.6)	4.02	1.04
18	I believe that freelancers enjoy a lot of exposure by working.	509 (38.2)	577 (43.4)	93 (7.0)	120 (9.0)	32 (2.4)	4.06	1.01

19	Computer courses enhance the ability of working for females' students.	511 (38.4)	574 (43.1)	92 (6.9)	131 (9.8)	23 (1.7)	4.06	.999
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The responses related to awareness, skill acquisition, and willingness to invest in freelancing demonstrate a positive outlook among female higher secondary students. For legal and financial awareness in freelancing, 61.1% of participants either strongly agreed or agreed, with a mean of 3.61 and SD of 1.29, indicating moderate knowledge in this area. Regarding setting appropriate rates for services, 67.5% were confident, showing that students have some understanding of the financial aspects of freelancing. A total of 65% of respondents believed that freelancing could enhance their economic independence, reflecting recognition of its practical benefits. Confidence in learning computer skills scored slightly lower, with 62.2% agreement, yet 73.8% expressed willingness to invest time in acquiring these skills, and 79.8% were ready to invest money, which are the highest agreements in this set, supported by means of 3.87 and 4.02 respectively, indicating strong commitment. Furthermore, 81.6% recognized the exposure benefits of freelancing, and 81.5% agreed that computer courses enhance the working ability of female students, both with mean scores above 4.0 and low standard deviations, reflecting strong consensus.

Table 7: Learning and Skills on the basis of Students' Opinion

Sr.#	Statements of Questions	SA f (%)	A f (%)	N f (%)	DA f (%)	SDA f (%)	M	SD
20	I am comfortable using technology.	522 (39.2)	547 (41.1)	94 (7.1)	144 (10.8)	24 (1.8)	4.05	1.02
21	A flexible schedule is important to students while learning computer skills.	389 (29.2)	619 (46.5)	122 (9.2)	163 (12.2)	38 (2.9)	3.87	1.05
22	I need guidance while learning computer skills for freelancing.	420 (31.6)	552 (41.5)	151 (11.3)	180 (13.5)	28 (2.1)	3.86	1.06
23	I am confident in their ability to market freelancing services.	501 (37.6)	478 (35.9)	118 (8.9)	206 (15.5)	28 (2.1)	3.91	1.12
24	A community of female freelancers is important to support and networking.	415 (31.2)	435 (32.7)	191 (14.4)	238 (17.9)	52 (3.9)	3.69	1.19

The analysis of participants' responses regarding technology use, learning preferences, and networking highlights a positive attitude toward freelancing and computer-based learning. A majority of students (80.3%) reported being comfortable using technology, with a mean of 4.05 and a low SD of 1.02, indicating strong confidence in digital tools. Regarding learning flexibility, 75.7% agreed that a flexible schedule is important while acquiring computer skills, reflecting the need for adaptable learning environments. Similarly, 73.1% of respondents acknowledged that guidance is necessary during computer skill development for freelancing, emphasizing the value of structured support. In terms of marketing abilities, 73.5% of participants expressed confidence in their capacity to promote freelancing services, demonstrating self-assurance in applying acquired skills. However, when asked about the importance of a female freelancing community for support and networking, agreement dropped slightly to 63.9%, suggesting that while students recognize the benefit of peer support, some may rely more on individual learning.

Table 8: Learning and Skills on the basis of Students' Opinion

Sr.#	Statements of Questions	SA f (%)	A f (%)	N f (%)	DA f (%)	SDA f (%)	M	SD
25	I have experience with freelancing.	279 (21.0)	535 (40.2)	194 (14.6)	267 (20.1)	56 (4.2)	3.53	1.15
26	Learning skills are high demand in freelancing market.	484 (36.4)	484 (36.4)	145 (10.9)	215 (16.2)	29 (2.2)	3.84	1.12
27	Having a certificate upon completion of the course is important to students.	468 (35.2)	515 (38.7)	122 (9.2)	192 (14.4)	34 (2.6)	3.89	1.11
28	Computer courses are knowledgeable for best freelancing.	487 (36.6)	537 (40.3)	126 (9.5)	150 (11.3)	31 (2.3)	3.97	1.05
29	Freelancing enhances economic independence of females at various levels.	422 (31.7)	598 (44.9)	111 (8.3)	165 (12.4)	35 (2.6)	3.90	1.06

The responses regarding experience, skill relevance, certification, and economic impact highlight both awareness and perceived value of freelancing among female higher secondary students. Only 61.2% of participants reported some prior experience with freelancing, indicating that direct exposure is limited, supported by a mean of 3.53 and SD of 1.15. A large proportion (72.8%) acknowledged that learning relevant skills is highly demanded in the freelancing market, reflecting awareness of market needs. Similarly, 73.9% emphasized the importance of obtaining a certificate upon completing a course, suggesting that formal recognition motivates engagement and credibility in freelancing. When asked whether computer courses provide essential knowledge for effective freelancing, 76.9% agreed or strongly agreed, with a mean of 3.97, highlighting strong recognition of the academic value of these courses. Furthermore, 76.6% believed that freelancing enhances economic independence at various levels, indicating widespread acknowledgment of its practical benefits.

Table 9: Enhancement of Economic Independence on the basis of Students' Opinion

Sr.#	Statements of Questions	SA f (%)	A f (%)	N f (%)	DA f (%)	SDA f (%)	M	SD
30	Occupational training can help students become economically independent.	384 (28.9)	598 (44.9)	146 (11.0)	171 (12.8)	32 (2.4)	3.84	1.05
31	I can make financial decisions with financial literacy programs.	345 (25.9)	574 (43.1)	174 (13.1)	204 (15.3)	34 (2.6)	3.74	1.08
32	I can learn about job alternatives and make decisions with mentorship.	507 (38.1)	517 (38.8)	99 (7.4)	183 (13.7)	25 (1.9)	3.97	1.08
33	Entrepreneurship can help students become financially independent	429 (32.2)	412 (31.0)	193 (14.5)	253 (19.0)	44 (3.3)	3.69	1.19

34	Business growth can help students become financially independent.	282 (21.2)	469 (35.2)	203 (15.3)	325 (24.4)	52 (3.9)	3.45	1.18
35	Addressing gender norms can help students become economically independent.	366 (27.5)	482 (36.2)	176 (13.2)	285 (21.4)	22 (1.7)	3.66	1.14
36	Resume writing help higher secondary girls economically independent.	361 (27.1)	490 (36.8)	131 (9.8)	301 (22.6)	48 (3.6)	3.61	1.20

The analysis of responses related to occupational training, financial literacy, entrepreneurship, and gender awareness demonstrates that female higher secondary students recognize multiple pathways toward economic independence. A majority of students (73.8%) agreed or strongly agreed that occupational training can support economic independence, with a mean of 3.84 and SD of 1.05, highlighting strong perceived relevance of skill-based programs. Similarly, 69% of participants believed that financial literacy programs help them make informed financial decisions, reflecting moderate confidence in their financial competencies. Mentorship and exposure to job alternatives were highly valued, with 76.9% agreement and a mean of 3.97, indicating that guided career support is considered critical for decision-making. Entrepreneurship was seen as a viable path by 63.2% of respondents, while 56.4% acknowledged that business growth contributes to financial independence, suggesting awareness but lower confidence in self-driven business initiatives. Addressing gender norms received 63.7% agreement, highlighting recognition of social barriers, and 63.9% felt that resume-writing skills could aid economic empowerment.

Table 10: Enhancement of Economic Independence on the basis of Students' Opinion

Sr.#	Statements of Questions	SA f (%)	A f (%)	N f (%)	DA f (%)	SDA f (%)	M	SD
37	Providing freelancing mentorship opportunities helpful for female students.	348 (26.1)	610 (45.8)	155 (11.6)	179 (13.4)	39 (2.9)	3.788	1.06
38	Freelancing help in financial literacy program at secondary level for female.	382 (28.7)	533 (40.0)	168 (12.6)	205 (15.4)	43 (3.2)	3.75	1.12
39	Freelancing provides career development services such as resume building.	323 (24.3)	528 (39.7)	226 (17.0)	205 (15.4)	49 (3.7)	3.65	1.11
40	Vocational training develops and path to make decisions for their future.	368 (27.6)	542 (40.7)	193 (14.5)	171 (12.8)	57 (4.3)	3.74	1.12

The responses concerning freelancing mentorship, financial literacy, career development, and vocational training indicate strong support among female higher secondary students for structured programs that enhance economic independence. A combined 71.9% of participants agreed or strongly agreed that providing freelancing mentorship opportunities would be beneficial, with a mean of 3.79 and SD of 1.06, reflecting recognition of the value of guidance and professional support. Similarly, 68.7% acknowledged that freelancing can contribute to financial literacy programs at the secondary level, demonstrating an understanding of its practical role in developing economic skills. Career development services, such as resume building offered through

freelancing, were recognized by 64% of students, indicating moderate awareness of its benefits for employability. Vocational training, which aids decision-making and prepares students for future career paths, received 68.3% agreement, with a mean of 3.74 and SD of 1.12, highlighting the perceived importance of skill-based training.

Analysis of Difference between Students’ Opinion regarding Freelancing Computer Courses to Enhance Economic Independence of Female Students at Higher Secondary Level

This section reveals the analysis of data to find the difference between students’ opinions based on their subject, locality, monthly expenses, interest in computer and use of internet. Researchers applied both the descriptive and inferential statistical techniques (i.e., Mean, SD and Independent samples t-test) to analyze need analysis of freelancing computer courses to enhance economic independence of female students at higher secondary level.

Table 11: Difference between Students based on Subject

Variables	Category	N	Mean	SD	Df	t	Sig.
Subject	Science	716	151.9651	23.79005	1329	3.261	.000
	Art	615	148.0130	19.81568			

The independent samples t-test was conducted to examine whether female students’ opinions regarding freelance computer courses differed based on their academic stream. The results indicate a statistically significant difference between science and arts students ($t = 3.261$, $df = 1,329$, $p = .000$). Science students ($n = 716$) reported a higher mean score ($M = 151.97$, $SD = 23.79$) compared to arts students ($n = 615$, $M = 148.01$, $SD = 19.82$), suggesting that science students hold a more favorable perception of freelancing and computer courses for enhancing economic independence.

Table 12: Difference between Students’ Opinions by Locality

Variables	Category	N	Mean	SD	Df	t	Sig.
Locality	Urban	683	155.2767	20.12507	1329	8.954	.000
	Rural	648	144.7238	22.84527			

An independent samples t-test was conducted to examine differences in students’ opinions regarding freelance computer courses based on their locality. The results revealed a statistically significant difference between urban and rural students ($t = 8.954$, $df = 1,329$, $p = .000$). Urban students ($n = 683$) had a higher mean score ($M = 155.28$, $SD = 20.13$) compared to rural students ($n = 648$, $M = 144.72$, $SD = 22.85$), indicating that urban students perceive freelance computer courses as more beneficial for enhancing economic independence than their rural counterparts. This difference may reflect greater access to technology, internet resources, and exposure to freelancing opportunities in urban areas, whereas rural students may face infrastructural or informational limitations.

Table 13: Difference between Students’ Opinions by Interest in Computer

Variables	Category	N	Mean	SD	Df	t	Sig.
Interest in Computer	Yes	1156	151.2777	22.31626	1329	4.867	.006
	No	175	142.6171	19.22632			

An independent samples t-test was conducted to examine whether students’ opinions regarding freelance computer courses differed based on their interest in computers. The results show a

statistically significant difference between students who expressed interest in computers and those who did not ($t = 4.867$, $df = 1,329$, $p = .006$). Students with an interest in computers ($n = 1,156$) reported a higher mean score ($M = 151.28$, $SD = 22.32$) compared to those without interest ($n = 175$, $M = 142.62$, $SD = 19.23$), indicating that students who are enthusiastic about technology perceive freelance computer courses as more beneficial for enhancing economic independence.

Table 14: Difference between Students' Opinions by Use of Internet

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	1043.523	3	347.841	.710	.546
Within Groups	649883.763	1327	489.739		
Total	650927.286	1330			

A one-way ANOVA was conducted to examine whether students' opinions regarding freelance computer courses differed based on monthly expenses. The results indicate no statistically significant difference among the groups ($F = 0.710$, $df = 3, 1,327$, $p = 0.546$). This suggests that students' perceptions of the benefits of freelancing and computer courses for economic independence are consistent regardless of their monthly expenditure. In other words, financial background, as reflected in monthly expenses, does not appear to influence how students value or respond to the idea of acquiring freelancing skills.

Table 15: Difference between Students' Opinions b Monthly Expenses

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	2588.803	3	862.934	1.766	.152
Within Groups	648338.483	1327	488.575		
Total	650927.286	1330			

Table 15 indicates the difference between students' opinions by monthly expenses. The calculated significance value is (.152) greater than tabulated significance level 0.05. This shows that there is statistically no significant difference between students' opinions by monthly expenses.

Findings

The interpretation of open-ended responses (S41–S42) revealed that students identified market demand and customer service quality as key factors influencing success in freelancing. Respondents emphasized that the availability of clients and the relevance of skills to current market trends significantly affect earning opportunities. In addition, maintaining strong communication and positive relationships with clients was viewed as essential for sustaining freelance work. Regarding suggestions, participants recommended continuously upgrading skills, learning new technological innovations, managing time effectively, and developing professional relationships with clients. These responses indicate that students recognize freelancing not only as a technical activity but also as a dynamic profession requiring adaptability, professionalism, and interpersonal competence.

Findings related to demographic characteristics showed that 53.8% of respondents were science students and 46.2% belonged to the arts group. Monthly expenses varied, with 39.6% spending between 1–5000, 33.1% between 6–10000, and 27.1% above 10000. Urban students constituted 51.3% of the sample, while 48.7% were from rural areas. A large majority (86.9%) expressed interest in computers, though internet usage patterns differed, with 33% reporting no regular use. Knowledge-related findings demonstrated strong awareness of freelancing concepts. More than

65% agreed they understood freelancing and its potential benefits, with mean scores ranging from 3.50 to 3.75. Students largely perceived freelancing as an ideal career option for females and recognized its potential to reshape traditional employment structures.

In terms of understanding and practical orientation, most respondents showed positive perceptions of freelancing. Over 68% agreed that freelancing is affordable and provides autonomy, while high mean scores (above 3.60) reflected favorable attitudes toward marketing skills and workload control. Regarding freelancing readiness, more than 73% expressed willingness to invest time in learning computer skills, and nearly 80% were willing to invest money. Over 81% believed computer courses enhance female students' working capacity and provide professional exposure. Similarly, findings related to learning and skills indicated strong technological comfort (80.3%), recognition of flexible schedules (75.7%), and the importance of certification (73.9%). Students also valued mentorship, networking communities, and high-demand digital skills.

With respect to enhancing economic independence, the majority agreed that vocational training, financial literacy programs, mentorship, entrepreneurship, and addressing gender norms contribute to financial autonomy, with mean scores generally above 3.60. Statistical analysis further revealed significant differences in opinions based on subject group, locality (urban–rural), and interest in computers, as indicated by a significance value of .000 ($p < 0.05$). However, no significant differences were found based on monthly expenses or frequency of internet use.

Discussion

The findings of this research indicate a clear relationship between the independent variables, such as access to computer courses and skill development, and the dependent variable, economic independence of female students. Freelancing offers students the opportunity to engage in diverse projects for different clients, which promotes both professional and personal growth. Exposure to a variety of tasks allows students to develop new technical skills, broaden their professional networks, and gain practical experience across multiple fields. This diversity also encourages creativity and innovation, enhancing students' overall employability and market competitiveness, while preparing them to adapt to evolving societal and technological demands.

Acquiring new skills and technological competencies is essential for success in freelancing. Computer courses provided to female students serve this purpose by equipping them with knowledge and hands-on experience necessary for delivering professional services. Many students face financial constraints and seek opportunities to earn by offering their expertise. Freelancing provides a platform for students to understand client expectations, offer services aligned with their skills, and earn income based on their work quality. However, this field also involves risk and uncertainty, as freelancers do not have guaranteed income or job security. They must independently manage finances, plan for workload fluctuations, and prepare contingency measures for periods of reduced demand.

Freelancing, particularly in the Pakistani context, has proven to be an accessible and empowering option for women, including those who are educated or illiterate, enabling them to work from home while contributing economically (Iftikhar, 2017). Female freelancers need to understand time management, client relations, market demands, and innovative work strategies to succeed. Each project completed allows freelancers to improve and diversify their skills, gain practical exposure to new processes and technologies, and stay competitive in the freelancing market. These continuous learning opportunities build confidence, foster self-reliance, and encourage long-term professional growth.

In addition to skill development, building strong client relationships is essential for sustainable success in freelancing. By understanding clients' goals and providing personalized solutions, freelancers can secure repeat business and referrals. The study highlights that computer courses not only enhance technical skills but also promote communication, social skills, and entrepreneurial capabilities among students. As noted by Kuznetsova (2018), outsourcing and freelance work have gained significant trust from employers, who increasingly rely on freelancers to reduce costs while maintaining quality. These trends underscore freelancing as a viable pathway for female students to achieve financial independence, professional recognition, and career advancement.

Conclusions

The findings indicate that freelancing plays a vital role in promoting financial autonomy, allowing students—particularly women—to earn income by providing services and adapting their work according to societal demands. However, freelancing also involves inherent risks, such as the lack of guaranteed income and job stability. To navigate these challenges effectively, freelancers must manage their finances prudently, anticipate fluctuations in work opportunities, and prepare contingency plans to mitigate the impact of decreased client demand. The study highlights that developing a strong understanding of personal skills, market requirements, and the advantages and disadvantages of freelancing is essential for success. The second objective focused on analyzing differences in students' opinions based on demographic factors such as subject, locality, monthly income, interest in computers, and internet usage. The results revealed significant differences in opinions based on students' subject (science vs. arts), locality (urban vs. rural), and interest in computers, indicating that these factors influence perceptions of freelancing computer courses and their impact on economic independence. Conversely, no significant differences were observed based on monthly income or internet usage, suggesting that these variables do not strongly affect students' attitudes toward freelancing.

Recommendations

The following recommendations of the study based on the findings were made:

1. The Ministry of Education, Science, and Technology should acknowledge the significance of computer courses in enhancing students' academic and professional development.
2. Assistive technologies can enable students to access the mainstream curriculum and eventually achieve financial independence.
3. Teachers, students, parents, guardians, and all relevant stakeholders should be made aware of the substantial benefits of these courses, fostering collective efforts toward sustainable educational empowerment.
4. Freelancing skills should be integrated into the curriculum at all levels of education.
5. Computer and freelancing skills should be introduced as compulsory subjects across educational programs.

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