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Determinants of Online Freelancer Income in C2B E-Commerce: In the Perspective of Upwork

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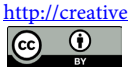

Abstract

Online job markets are preferred by skilled workers around the world as traditional job markets are shrinking because of technology. C2B e-commerce is connected to this online job market where online workers or freelancers earn money according to their work. This paper empirically investigated the contributing factors that affect the level of earnings of freelancers on the Upwork platform. Moreover, this study has taken six parameters to assess the income level of a freelancer. A total of 397 samples were taken from the Upwork platform for the calculation of the OLS regression method. The results of this study revealed that experience, skills, and a few areas of work are significantly important when a freelancer earns from the crowdsourcing platform or C2B e-commerce platform, whereas gender, education, and performance review are not significant.

Subject Areas

Electronic Commerce

Keywords

Freelancer, C2B, E-Commerce, Income, Upwork, Crowdsourcing

1. Introduction

Jobs in online platforms have become popular in recent times as continuous growth is observed in hiring employees from outside the organizations [1] [2]. Most freelancers have shifted from offline platforms to online platforms in the last few years [3] [4]. Because online platforms can provide more flexibility and independence for workers [5] [6]. Moreover, organizations are also getting solutions or assistance from freelancers on crowdsourcing platforms [7]. About 160 million workers have searched for work on online platforms in the gig economy [8]. Better opportunities are possible on online platforms, mainly for workers in less devel-

oped countries [4]. On the other hand, the talents and skills of people can be managed efficiently through crowdsourcing or C2B e-commerce in different areas of work [9]. This talented and skilled group of people is known as online freelancers. However, this group of workers faces high competition on the open platform. A large group of freelancers wants to get high payment but the majority of the freelancers accept decent rates for their work [10]. As a result, freelancers are not clear about why their income levels fall below their expectations. It is clear from the literature that freelancers and the fluctuations of their incomes are not getting enough attention from researchers.

There are some popular online C2B e-commerce platforms where freelancers can work for their financial and career development. Upwork is one of the leading C2B e-commerce platforms in the global arena. Upwork, which was formed after merging oDesk and Elance, is predominantly the biggest marketplace for clients and freelancers around the world [11] [12]. For the year 2022, the revenue of Upwork was $618.3 million with 827,000 active clients and the total value of all job postings was $4.1 billion [13]. The workers in Upwork had earned more than $20 billion from the beginning of this company up to December 31, 2022 [13]. High skills are required by the workers to complete Upwork jobs as this company follows different methods for coordinating relationships between clients and workers [14]. As a result, academic literature is shifting attention towards the career of workers in Upwork because of its recent popularity and growth in the global market [11]. After studying Upwork workers in Finland, we can know the contributions of the platform when the jobs were completed by the workers with the help of clients [15]. Additionally, there is a relationship between reviews by clients and payment rates for freelancers considering Upwork and other popular platforms [16]. It is very clear that researchers have shown interest in Upwork and studied this platform. However, this study has considered the Upwork platform to determine the factors that influence freelancer income. In this study, six relevant factors are used to determine the contributing factors of income for freelancers on Upwork.

This paper has a few sections. The first section is an introduction of the concepts and then a literature review describing hypotheses that should be examined in the later section of this study. The next section describes the methodology of this paper covering the data analysis method, sample size, and the demographics of the sample for the analyses. The fourth section covered the results and discussions covering descriptive statistics, multicollinearity analysis, and empirical results. The final section described the conclusions with practical implications for freelancers, researchers, managers, and trainers.

2. Literature Review and Hypothesis Development

Economists have shown interest in the affecting factors of income recently as labor economics mainly deals with the earnings function of the worker [17]. Researchers have found many factors that influence the income of a worker such as experience and education [18] [19]. Education is one of the important factors in determining the income of an individual [20]. Researchers have shown a strong re-

lationship between education and income for the last 60 years of studies [21] [22]. Moreover, the average salary increases with the additional years of experience of the worker [23]. It is very clear that education and experience have a very strong connection with the income of an employee or worker. The following hypotheses could be drawn from the above discussions.

H_1: Education can increase the income of an online freelancer.

H_2: Experience has a positive impact on the income of an online freelancer.

There is a traditional view that high skills will help a worker achieve a high income [24]. It is very difficult to reach a higher income without adequate skill sets. As a result, the new skills of a worker are strongly connected with the earnings of the worker [25] [26]. Moreover, industry or area of work, gender along with experience, and education have an impact on the payment rates of the freelancers [27]. Specifically, there is a significant difference between men and women when they receive payments from business organizations [28]. This gender difference could play a role in the income of freelancers in C2B e-commerce platforms. Additionally, there is a strong positive correlation between the unemployment rate and the diversity of industry [29]. As a result, there is a possibility that a specific area of work or industry will influence the income of a freelancer. Furthermore, a proven track record or review is another important factor or issue with expertise, and industry for freelancers when they receive payments from the C2B e-commerce platforms [30]. Finally, we can draw the remaining hypotheses from here.

H_3: Skills of an online freelancer are positively associated with income.

H_4: Gender plays a vital role in the income of an online freelancer.

H_5: Area of work or industry sets the level of income of an online freelancer.

H_6: There is a strong connection between the performance review and the income of an online freelancer.

Figure 1 shows the framework for this study considering all the hypotheses from H1 to H6 sequentially. This manuscript has tested all six hypotheses considering the data collected from freelancers on Upwork. After testing all these hypotheses, a modified framework has been shown with accepted and rejected hypotheses showing results of studies in the fifth section of this paper.

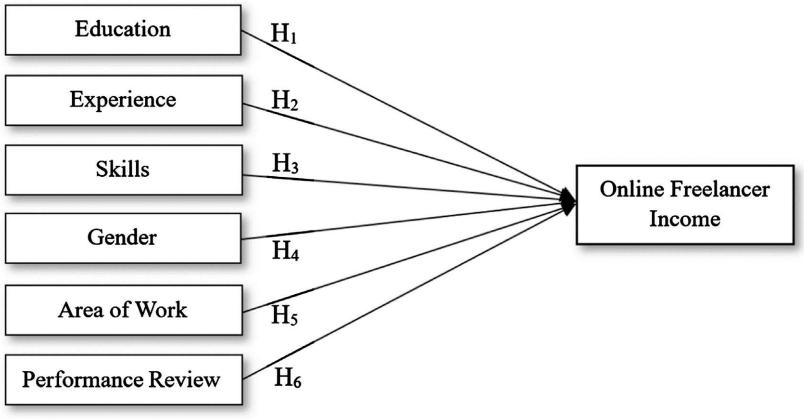

Figure 1. Conceptual framework.

3. Methodology

3.1. Data Analysis Method

The formula using the ordinary least squares (OLS) regression method is

$$Y_i = \beta_0 + \beta_1 Ed_i + \beta_2 Ex_i + \beta_3 Sk_i + \beta_4 Ge_i + \beta_5 Ar_i + \beta_6 Re_i + \varepsilon_i$$

where Y_i means the total income of a freelancer in the C2B e-commerce platforms, Ed_i means the level of education in years, Ex_i means the total experience in years, Sk_i means the number of skills in different software tools, Ge_i means the gender, Ar_i means the area of work or industry chosen by the freelancers, and Re_i means the review of previous works given by the employers or job creators. The β_0 indicates the intercept of this model and the ε_i indicates the error term.

This study has taken samples from the Upwork platform considering 12 different categories of work for freelancers. A quantitative approach was taken to analyze the data that were collected from the samples. This study has deleted the incomplete samples and is limited to 397 complete samples from the Upwork platform. However, the IBM SPSS package (version 23) was used to analyze the collected data.

3.2. Sample Size

In this paper, G-Power analysis software is used for the appropriate sample size. Because this software is efficient in calculating the sample size of research to reach a certain level of power [31]. The software shows that the total sample size should be 146 (**Figure 2**) for six predictors of a dependent variable whereas this study has taken 397 samples. However, the sample size is more than sufficient to test the hypotheses.

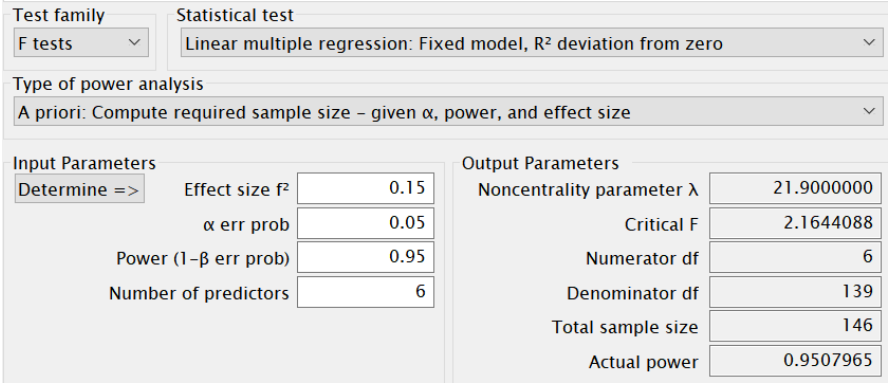

Figure 2. G*Power software results.

3.3. Demographics of the Sample

A total of 397 valid samples were collected from freelancers on the Upwork platform over 2 weeks. Random selection was done to collect samples when the freelancers crossed $100 in lifetime earnings. Around 55% (220) of freelancers are male, and 45% (177) of respondents are female in the samples (**Table 1**). The ed-

ucation of freelancers having 10 - 17 years of schooling consists of 45% whereas 21% freelancers have at least 20 years of education. Additionally, the average annual income of freelancers mostly falls between $500 and $10,000 (67%) while 2% freelancers earn more than $50,000.

Upwork has a total of 12 categories of work for freelancers. Accordingly, this study has taken samples from 12 areas of freelancing or crowdsourcing work from Upwork (Table 2). At least 22 samples were collected for each area of work from this C2B e-commerce platform. Only three areas have less than 30 samples which are sales & marketing, translation, and legal whereas data science & analytics and web, mobile & software development areas have a sample size of more than 40.

Table 1. Profile of freelancers in the samples.

Demographic Factors	Frequency	Percent
Gender		
Male	220	55%
Female	177	45%
Total	397	100%
Education		
10 - 17 Years	179	45%
18 - 19 Years	135	34%
20 Years or More	83	21%
Total	397	100%
Average Annual Income		
$0 - $500	50	13%
$501 - $2000	104	26%
$2001 - $5000	86	22%
$5001 - $10,000	77	19%
$10,001 - $30,000	54	14%
$30,001 - $50,000	17	4%
$50,000+	9	2%
Total	397	100%

Table 2. Specific works of the freelancers in the samples.

Area of Work	No. of Samples
Web, Mobile & Software Development	41
Design & Creative	39
Writing	30
Sales & Marketing	26
Admin Support	37

Continued

Translation	27
Engineering & Architecture	38
Accounting & Consulting	32
Data Science & Analytics	44
Customer Service	31
IT & Networking	30
Legal	22
Total	**397**

4. Results and Discussion

4.1. Descriptive Statistics

The minimum total earning of a freelancer is $100, and the average total earning is $85,718. Table 3 shows that the average experience of a freelancer is 9.496 years and the maximum experience of a freelancer is 45 years. Furthermore, the average value of the performance review of a freelancer is 95.3% whereas the average value of the skills of a freelancer is 13.38 areas. Moreover, the education level of freelancers is very high where a freelancer has a minimum of 14 years of schooling and a maximum of 26 years of schooling.

Table 3. Descriptive statistics.

	N	Minimum	Maximum	Mean	Std. Deviation
Total Earnings	397	100.0	1,300,000.0	85718.957	166156.7177
Experience	397	1.0	45.0	9.496	5.7426
Education	397	14.0	26.0	18.398	1.7109
Performance Review	397	46.0	100.0	95.343	7.3532
Skills	397	2.0	40.0	13.375	4.8171
Valid N (Listwise)	397				

4.2. Multicollinearity Analysis

This study has tested the multicollinearity effect to know the pairwise correlations between variables. For this purpose, the correlation matrix proposed by Karl Pearson and the Variance Inflation Factor (VIF) test invented by Cuthbert Daniel were used to check the multicollinearity effect for this study. The correlation matrix (Table 4) shows that there is no significant correlation between the variables in this study. Almost all the values are close to zero which means there are no relationships between the variables. Additionally, Table 4 shows only experience is insignificantly connected to the total earnings where a correlation coefficient of 0.342 reveals a weak positive correlation between experience and total earnings of a freelancer. Therefore, multicollinearity is totally absent in the analysis of this manuscript.

Table 4. Correlation matrix (Pearson).

Variables	*TE*	*Exp*	*Edu*	*PR*	*Sk*	*Gen*	*WMS*	*DC*	*Wri*	*SM*	*AS*	*Tra*	*EA*	*AC*	*DSA*	*CS*	*IT & N Legal*
TE	1.000																
Exp	0.342	1.000															
Edu	0.090	0.250	1.000														
PR	0.140	0.183	0.013	1.000													
Sk	0.045	−0.088	0.032	−0.071	1.000												
Gen	0.009	0.022	0.084	−0.053	0.063	1.000											
WMS	0.120	−0.058	−0.094	−0.067	−0.044	0.055	1.000										
DC	0.135	0.041	−0.092	0.041	−0.020	−0.096	−0.112	1.000									
Wri	−0.032	0.008	0.090	0.001	−0.058	−0.127	−0.097	−0.094	1.000								
SM	0.013	−0.069	−0.032	−0.008	−0.080	0.094	−0.090	−0.087	−0.076	1.000							
AS	0.033	−0.023	−0.049	0.024	0.056	−0.026	−0.109	−0.106	−0.092	−0.085	1.000						
Tra	−0.055	−0.057	0.083	0.117	−0.073	−0.180	−0.092	−0.089	−0.077	−0.072	−0.087	1.000					
EA	−0.062	0.021	−0.006	0.118	0.014	0.085	−0.110	−0.107	−0.093	−0.086	−0.104	−0.088	1.000				
AC	−0.066	0.028	0.061	−0.065	0.115	−0.032	−0.100	−0.098	−0.085	−0.078	−0.095	−0.080	−0.096	1.000			
DSA	−0.074	−0.067	0.073	−0.081	0.073	0.107	−0.120	−0.117	−0.101	−0.093	−0.113	−0.095	−0.115	−0.105	1.000		
CS	−0.037	−0.027	−0.123	0.022	−0.029	−0.079	−0.099	−0.096	−0.083	−0.077	−0.093	−0.079	−0.095	−0.086	−0.103	1.000	
IT & N	−0.052	0.027	−0.117	−0.121	0.055	0.141	−0.097	−0.094	−0.082	−0.076	−0.092	−0.077	−0.093	−0.085	−0.101	−0.083	1.000
Legal	0.069	0.213	0.259	0.035	−0.037	0.040	−0.082	−0.080	−0.069	−0.064	−0.078	−0.065	−0.079	−0.072	−0.086	−0.070	−0.069	1.000

Moreover, VIF test results in Table 5 show that all the values are located between 1.00 and 2.00 which are far lower than 5.00 (a standard for the VIF test) [32]. Once again, the VIF test confirms that there is no multicollinearity effect in the data collected from samples. As a result, the results of OLS regression are free from multicollinearity issues in this study.

4.3. Empirical Results

This study examines the factors that affect the income level of an online freelancer which are shown in Table 5. This study has taken six factors to determine the influence on the income level of an online freelancer. Only two factors significantly affected the level of income out of six independent variables and one factor partially affected the level of income (Figure 3). The education of an online freelancer is not significant ($\beta = 0.037$, $p > 0.05$, $t = 0.718$) to the income level, which rejects H1. In the same way, gender ($\beta = 0.000$, $p > 0.05$, $t = -0.002$) and performance review ($\beta = 0.090$, $p > 0.05$, $t = 1.847$) both are insignificant to the income of an online freelancer. On the other hand, experience ($\beta = 0.334$, $p < 0.05$, $t = 6.664$) and skills ($\beta = 0.100$, $p < 0.05$, $t = 2.098$) have significant influences on the income of an online freelancer which leads to the acceptance of H2 and H3. Table 6 shows that there is a moderate correlation between actual and predicted. Moreover, the value of R Square and the value of Adjusted R Square are very close, which means the model is efficient and the predictors are meaningful. The level

of education is not a significant factor in earnings on online platforms [33], and the gap between male and female incomes is decreasing in China [34]. Moreover, the relationship between freelance earnings and performance reviews is complex and connected with other factors [35].

Table 5. Coefficients[a].

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	−336548.286	142492.406		−2.362	0.019		
Experience	9670.744	1451.270	0.334	6.664	0.000	0.851	1.175
Education	3580.259	4986.469	0.037	0.718	0.473	0.812	1.232
Performance Review	2026.061	1097.196	0.090	1.847	0.066	0.908	1.102
Skills	3446.122	1642.308	0.100	2.098	0.037	0.944	1.059
Gender	−32.655	16475.684	0.000	−0.002	0.998	0.879	1.138
Area of Work or Industry							
Web, Mobile & Software Dev.	100463.140	33545.427	0.184	2.995	.003	.566	1.768
Design & Creative	86994.153	34421.818	0.156	2.527	0.012	0.562	1.781
Writing	6572.945	36927.899	0.010	0.178	0.859	0.619	1.616
Sales & Marketing	54333.696	38171.300	0.081	1.423	0.155	0.661	1.513
Admin Support	43187.714	34465.083	0.076	1.253	0.211	0.587	1.703
Translation	−904.381	38774.684	−0.001	−0.023	0.981	0.618	1.617
Engineering & Architecture	−16016.245	34291.986	−0.028	−0.467	0.641	0.579	1.727
Accounting & Consulting	−21361.317	35819.933	−0.035	−0.596	0.551	0.620	1.613
Customer Service	12614.304	36619.934	0.020	0.344	0.731	0.611	1.638
IT & Networking	−4342.576	36866.920	−0.007	−0.118	0.906	0.621	1.611
Legal	17603.093	41323.524	0.024	0.426	0.670	0.659	1.517

a. Dependent Variable: Total Earnings.

Table 6. Regression statistics.

Multiple R	0.65707
R Square	0.43174
Adjusted R Square	0.40781
Standard Error	343778.5
Observations	397

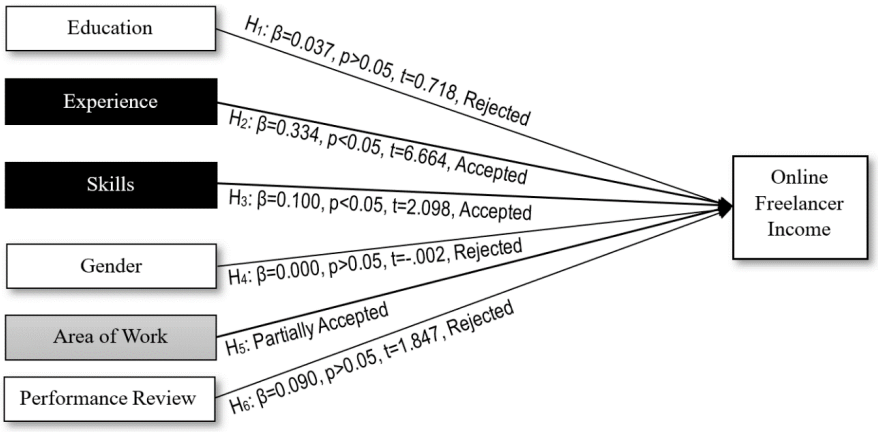

Figure 3. Results of all hypotheses.

However, all the areas of work are not equally significant or important for the income level of an online freelancer. Only the web, mobile & software development area ($\beta = 0.184$, $p < 0.05$, $t = 2.995$) and the Design and creative area ($\beta = 0.156$, $p < 0.05$, $t = 2.527$) have a strong influence on the income of a freelancer which leads to partially accepted H5. The remaining areas of work or industry are insignificant for the online freelancers when they want to earn more from the C2B e-commerce platform. Furthermore, the SPSS software automatically excluded one variable which is data science & analytics because of the unacceptable range of VIF (Table 7).

Table 7. Excluded variables[a].

Model	Beta In	t	Sig.	Partial Correlation	Collinearity Statistics		
					Tolerance	VIF	Minimum Tolerance
Data Science & Analytics	.[b]	.	.	.	−4.508E−14	−22185219839263.527	−4.508E−14

a. Dependent Variable: Total Earnings; b. Predictors in the Model: (Constant), Legal, Performance Review, Sales & Marketing, Writing, Skills, Customer Service, Gender, Admin Support, Accounting & Consulting, Experience, IT & Networking, Translation, Engineering & Architecture, Education, Web, Mobile & Software Dev, Design & Creative.

5. Conclusion

Online freelancers are very important in C2B e-commerce platforms. Online freelancers are motivated when they receive higher payment from the C2B e-commerce platform compared to the traditional market. This study explored the contributing factors toward the income level of an online freelancer using Upwork data. But existing literature somehow missed this important area which needs to be addressed. According to the findings of this research, experience, and skills are the indicators of higher payment for an online freelancer. On the other hand, gender, education, and performance review are not so significant for the income level

of a freelancer. Moreover, choosing the design & creative area and web, mobile & software development area by the freelancers is crucial for the level of payment for the workers. Other areas of work are not so significant, such as whether a freelancer receives more payment or not.

5.1. Practical Implications

This study has several implications for online freelancers, managers, researchers, and trainers. The findings of this study suggested that online freelancers need to emphasize the different sets of skills and gather years of experience and they should choose web, mobile & software development, and design & creative areas as their working fields to increase payment or income levels. Moreover, managers should not look at the education level, gender, and the review of previous works of a freelancer when they select any worker from the C2B e-commerce platforms. This study also provides implications for the researchers as they should study how to improve skills for an online freelancer to get a sufficient amount of income from the C2B e-commerce platforms. Furthermore, this study advised that trainers should not be concerned a lot about reviews of past work and the education of the current workers who are working at C2B e-commerce platforms. The trainers should emphasize skill development and selection of specific areas of industry in C2B e-commerce platforms.

5.2. Future Research Directions

There are some limitations to this study through which the researchers can get directions for future research. Firstly, this study has taken all data from the Upwork platform. But there are some other popular platforms where different results may occur. Hence, a large sample size from different platforms may be considered in future studies. Secondly, this study relied solely on quantitative research and skipped the quantitative part when making decisions. Therefore, researchers can consider quantitative research in future studies to explore other contributing factors to the income level of an online freelancer. Finally, this study collected data from freelancers who earned at least $100 from their work and ignored freelancers who did not earn any money or earned less than $100. Hence, future researchers have the scope to explore those freelancers and show the difference in contributing factors on income level between freelancers who earn more and those who earn less from the C2B e-commerce platforms.

Conflicts of Interest

The authors declare no conflicts of interest.

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