Pakistan Institute of Development Economics

Knowledge Brief

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WHAT DO WE KNOW ABOUT THE ONLINE FREELANCING MARKET IN PAKISTAN

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The fourth industrial revolution with the remarkable advancement of the internet has transformed production, management, and governance systems (Kathuria et al., 2017). These developments have also disrupted the conventional understanding of the labor market. Since many new job opportunities have been created and many others are destroyed. The dynamics of the labor market in Pakistan are also undergoing similar transformations. The use of technology and digital platforms has provided employment opportunities to a large segment of the labor market. Among the job opportunities created by the expansion of technology, freelancing is one of the leading ones (Kuek et al., 2015), and online freelancing is showing a growing trend in Pakistan, especially among urban youth.

Freelancing has now become the buzzword among the youth of Pakistan due to the saturated job market conditions and easy earning opportunities that it offers. Considering the level of unemployment in the country and the emphasis of the government on promoting freelancing among the masses, it is worth looking into the structure of the online freelancing market at present, which is the aim of this brief.

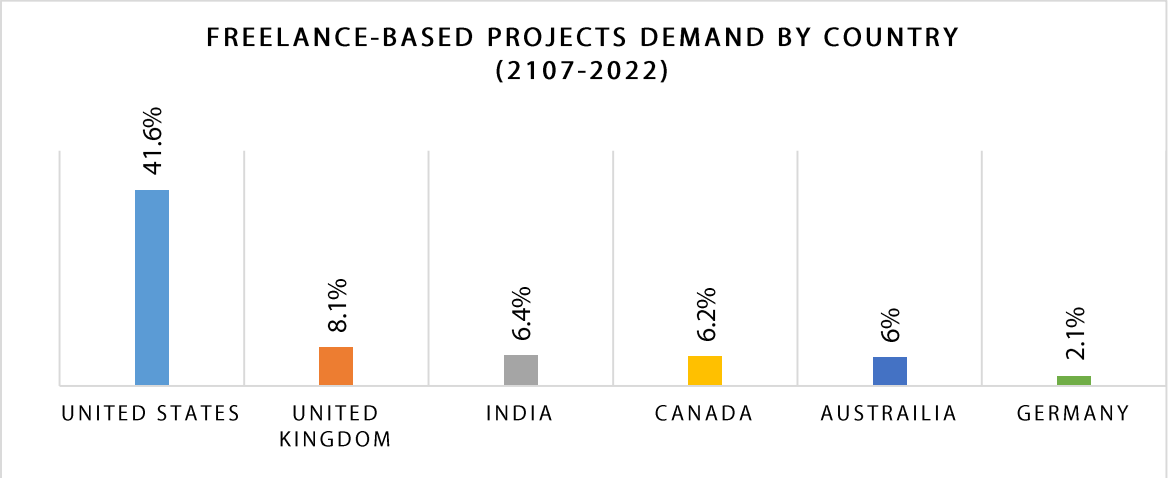
Defining Freelancer

"Dating as far back as medieval times, the term "Freelancer' was commonly used as a way of referring to a hired lance, a mercenary who offered to fight for the highest bidder. Over time the word transcended battlefields and found usage in business - loosely, someone willing to offer unique and much-needed skills to those willing to pay for them. The Internet allowed for the dynamic growth of freelancing. It became much easier for independent professionals to publish their profiles, while for those seeking a service, the Internet allowed for a far more efficient and expansive search. Freelancers were no longer constrained by barriers of time and geography or limited to cold-calling, print advertisements, and local area networks to find freelance opportunities."

Borrowed from: Kathuria et al. (2017)

Online Freelancing Market

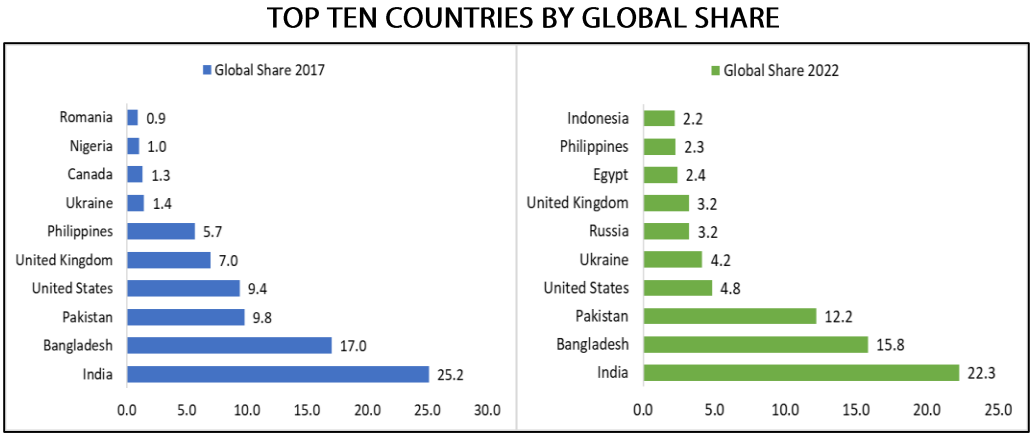
The emergence of digital technologies has made possible the advent of online labor platforms that are now facilitating the online labor force i.e., commonly referred to as freelancers. Individuals who engage in freelancing activities can work remotely, on an hourly or project basis, with multiple clients across the globe, instead of working for one employer as in the case of traditional employees. The demand for online freelance work is significant and is increasing with an average annual growth rate of 10 percent (Stephany, et. al. 2021). Insights from the online freelancing market show that compared to 2016 the demand for freelancing-based projects through online platforms has increased by more than 90 percent in 2021.[1] The leading market for freelancing-based projects is the USA and the dominant services in demand are related to software and technology (ILO, 2020).



Source: ILO — Online Labor Observatory

As per estimates, the total number of online freelancers registered at different online platforms across the globe is around 163 million.[2] The online freelancing market observes an excessive supply of freelancers that can be validated by seizing the fact that out of these 163 million registered freelancers, only 8.6 percent have ever worked (which means completed at least one project) through an online platform. The supply of freelancers is dominated by developing countries, especially India, Bangladesh, and Pakistan. The figure below depicts the top ten freelancers registered/supplying countries.

[1] See; Kässi and Lehdonvirta (2018) and Stephany, et. al. (2021) among others.
[2] Kässi and Lehdonvirta (2018)

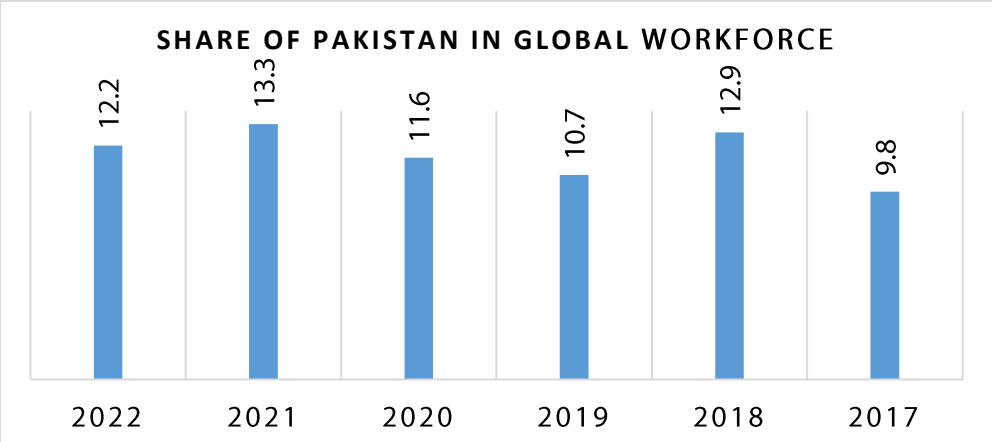


Source: ILO — Online Labor Observatory

The Footprint of Pakistan in the Online Freelancing Market

To measure the footprint of Pakistan in the online freelancing market, we extracted data from the two most popular freelancing platforms in Pakistan, namely Freelancer.com and Upwork.com. Through web scrapping, we were able to extract data from 15,000 freelancers from Pakistan registered at these two platforms. We focused on 5 skill tags for each registered freelancer, however, cleaning and preliminary analysis drove us to drop some observations, and the remaining data were categorized into 19 groups based on 419 skill sets. The information of interest while data scrapping includes skills and asked hourly wages. Based on these considerations, our findings are as follows;

The number of freelancers:[3] Our estimates show that approximately 19.7 million freelancers from Pakistan have registered their profiles across different platforms, which accounts for around 12.2 percent of the online freelancing workforce. Out of these registered freelancers, only 1.6 million are active (which means they have completed at least one project through the online platform). While significant freelancers (who have completed 10 or more projects through online platforms) are only 0.39 million.



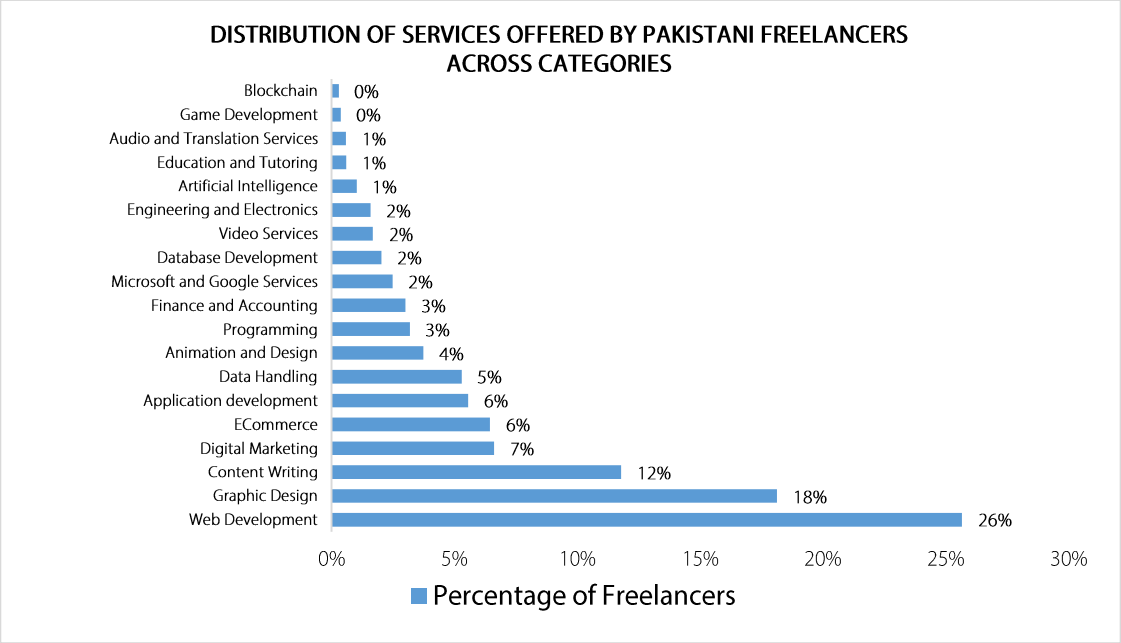
Source: ILO — Online Labor Observatory

[3] To calculate the number of freelancers in Pakistan, we adopted the methodology of Kässi et. al. (2021). To apply the said method, the average shares of Pakistani freelancers providing services in the global freelance market (12.10 percent from 2018 to 2022) were used.

Since the nature of online platforms, both multi-homing (multiple profiles on multiple platforms) and multi-working (multiple freelancers working through one profile), the estimates need to be adjusted. After adjusting for these issues, the number of active freelancers estimated is around 1.1 million in Pakistan and only 260,818 have worked significantly. The table below further explains our estimates.

NUMBER OF FREELANCERS FROM PAKISTAN (Last Five Years Average)			
	Estimated Numbers	Error Bands	
		Min	Max
Online Registered Freelancers	19,723,000	18,392,000	24,805,000
Active Freelancers (*who have completed at least one project*)	1,696,178	367,840	9,128,240
Significant Freelancers (*who have completed 10 projects or earned USD 1,000*)	394,460	18,392	2,480,500
Active Freelancers - After adjusting for multi-homing	926,873	367,840	2,282,060
Significant Freelancers - After adjusting for multi-homing	215,552	18,392	620,125
Active Freelancers - After adjusting for multi-working	1,121,517	434,051	2,829,754
Significant Freelancers - After adjusting for multi-working	260,818	21,703	768,955
Source: Authors' calculation based on the methodology used by Stephany et al. (2021) and Kassi et al. (2021).			

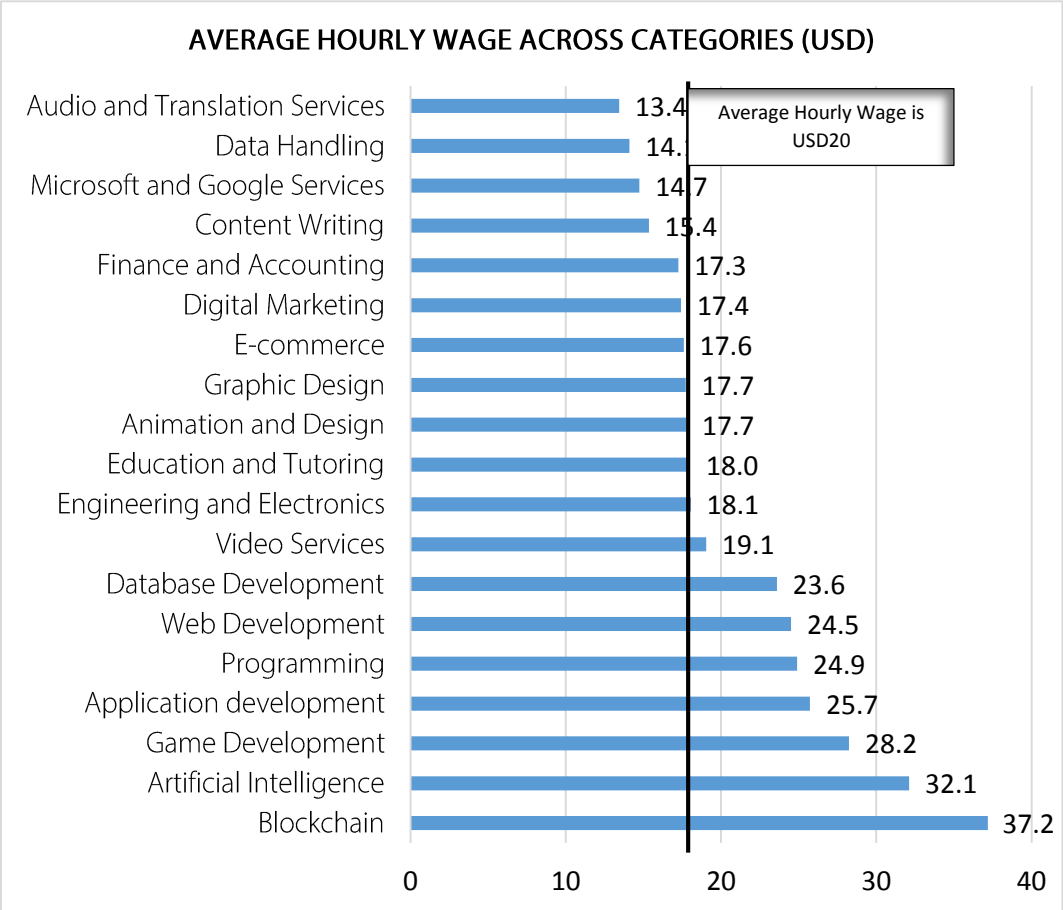
Services Offered: The services freelancers from Pakistan provide are summed in 19 broad categories.[4] The majority of the freelancers in Pakistan provide web development-related services followed by graphic designing and content writing. These three categories cover around 56 percent of online registered freelancers from Pakistan. while services offered in game development and blockchain by Pakistani registered freelancers fall on the lower end of the distribution. Artificial intelligence-related services are provided by only 1.02 percent of Pakistan freelancers even though globally the demand for AI-related services is significantly increasing.



Source: Authors' Calculations based on Data collected

[4] A pictorial depiction of service categories is given in the annexure A.

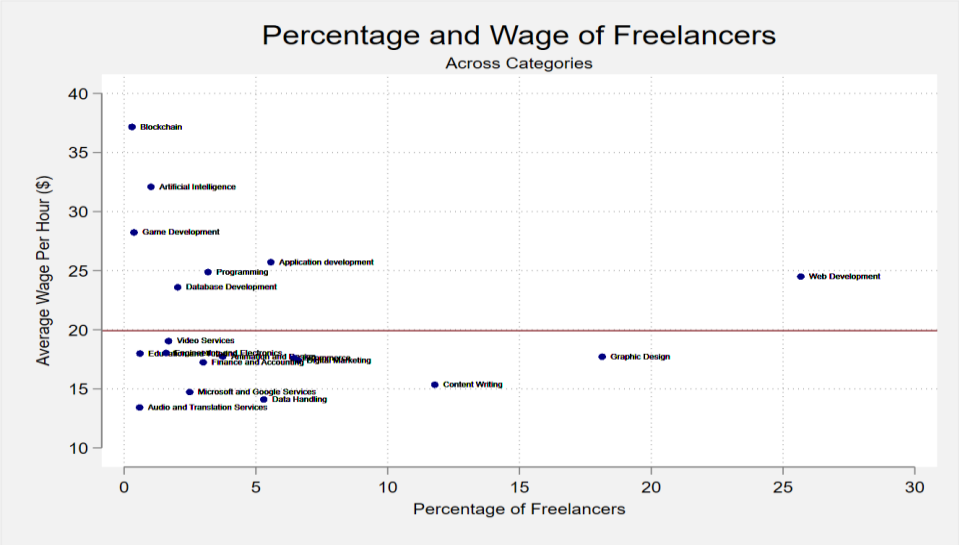
Wage Earning: The average wage per hour for freelancers in Pakistan is around USD20. Across categories, the highest-paying skills are related to services in blockchain, AI, game development, application development, programming, web development, and database development. Only 38 percent of online freelancers are providing services in high-paying high-skilled services, while the remaining are earning below an average wage per hour of USD 20 in their respective categories. The average Wage per hour across categories is given in the figure below.



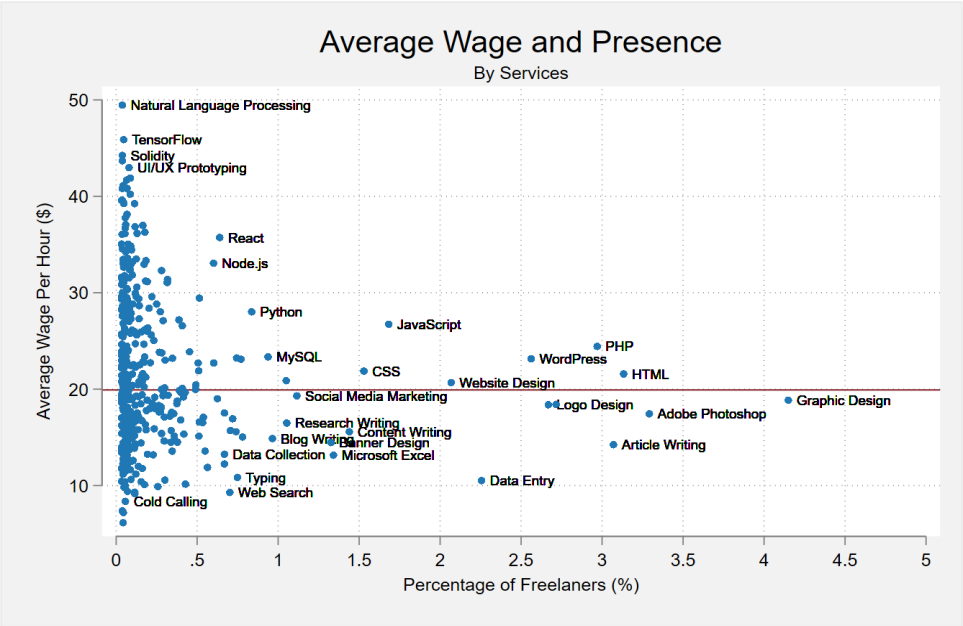
Source: Authors' Calculations based on Data collected

Services Offered Across Wage Earnings: In the case of Pakistan, the majority of the freelancers are providing web-development-related services average wage of which is ISD 25.7 per hour. Graphic design and content writing-related services are provided by 18.9 percent and 11.7 percent respectively, however, the average wage per hour in these categories is below USD 20 per hour. Blockchain, artificial intelligence, and game development-related services have the highest wage per hour, yet the collective percentage of freelancers providing services in these categories is 1.6 percent.[5]

[5] Skill-wise details are presented in the annexure B.



Presence Across Categories: Among skills that offer the highest average wage, natural language processing services, which fall under the category of artificial intelligence, are the highest with a USD 49.5 average per hour. In the top 20 highest wages per hour skills, the presence of Pakistani freelancers is only 1.2 percent. The highest number of freelancers are providing graphic design, Adobe Photoshop, HTML, and article writing services. The skills-wise services are shown in the figure below.



Key Take Aways

- Pakistan does have a significant presence in the online freelancing market with a global share of 12.2 percent.
- Around 56 percent of online registered freelancers from Pakistan provide services related to web development, graphic designing, and content writing.
- Only 1.02 percent offer services in the fields related to artificial intelligence and blockchain, which are the highest-paying services.

- The average hourly wage of a freelancer in Pakistan is USD 20, more than 60 percent of online freelancers are earning less than the average.
- In the top 20 highest wages per hour skills, the presence of Pakistani freelancers is only 1.2 percent.

What can be Done?

- A low percentage of freelancers providing services for high-paying skills represents a misallocation of talent (human resource). Rectification of which through the development of high-paying skills can translate into more dollar inflow and higher economic value.
- If the government does intend to intervene in the market, then there is a need for policy intervention evident from the results to increase the number of freelancers that are providing services in high-paying categories. This can be achieved through the promotion and provision of technical skills at universities and enhanced enrollment in categories that offer the likelihood of employability in the freelance market,
- Addressing unemployment – Categories are identified that offer high wages, and pursuance of education and training in the identified categories will help in building a skilled workforce and entering the freelance market for earning.

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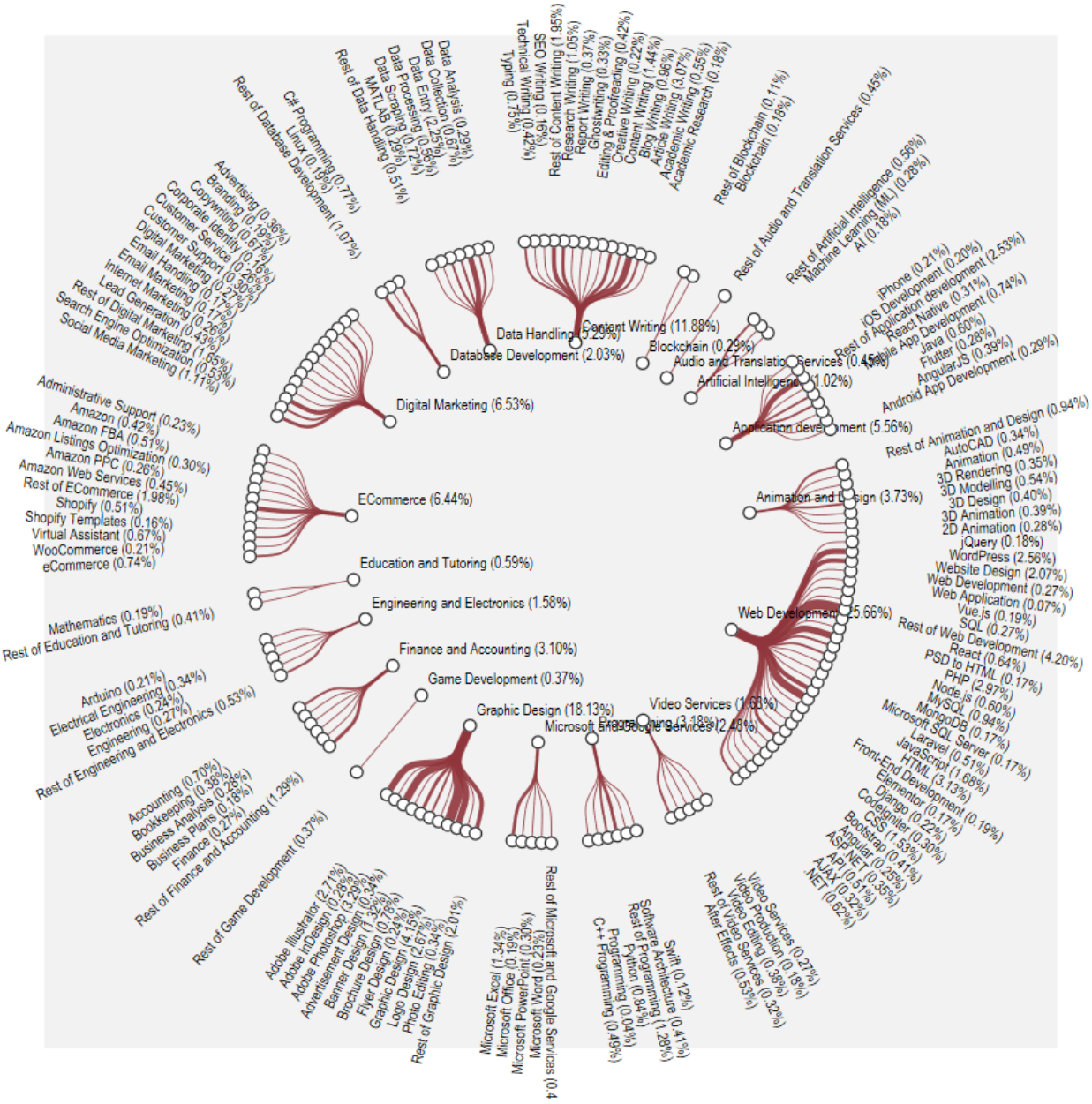
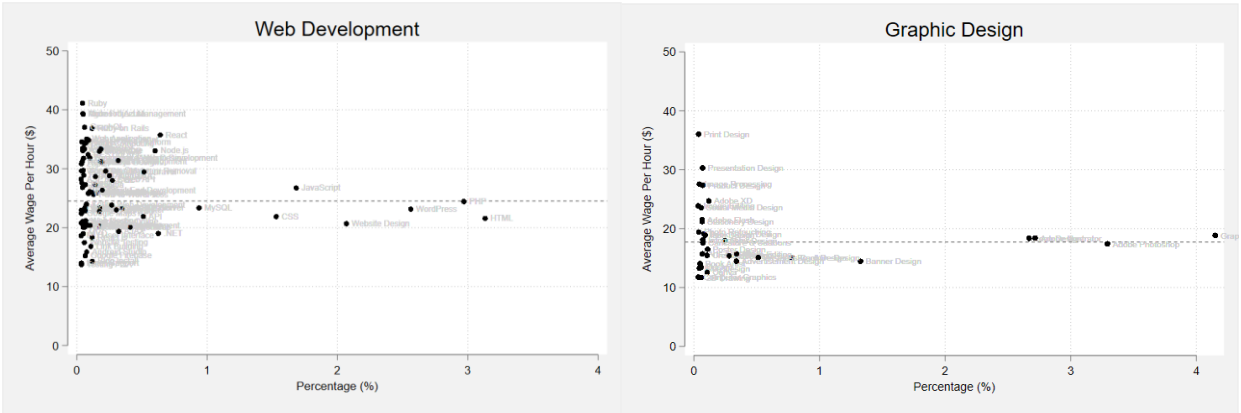
- Stephany, F., Kässi, O., Rani, U., & Lehdonvirta, V. (2021). Online Labour Index 2020: New ways to measure the world's remote freelancing market. *Big Data & Society*.

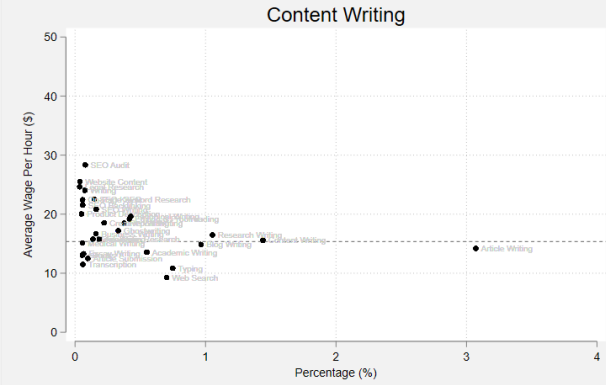
Annexure A

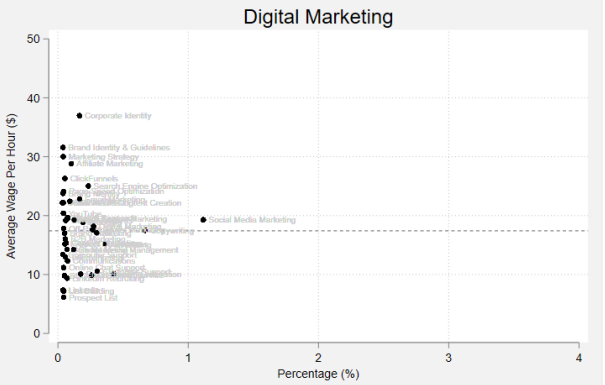

Digital Marketing (6.53%)
Data Handling (5.29%)
Database Development (2.03%)
Content Writing (11.88%)
Blockchain (0.29%)
Audio and Translation Services (0.45%)
Artificial Intelligence (1.02%)
Application development (5.56%)
ECommerce (6.44%)
Education and Tutoring (0.59%)
Engineering and Electronics (1.58%)
Finance and Accounting (3.10%)
Game Development (0.37%)
Graphic Design (18.13%)
Microsoft and Google Services (2.48%)
Video Services (1.68%)
Animation and Design (3.73%)
Web Development (25.66%)
Rest of Digital Marketing (0.43%)
Search Engine Optimization (1.65%)
Social Media Marketing (1.11%)
Administrative Support (0.23%)
Amazon (0.42%)
Amazon FBA (0.51%)
Amazon Listings Optimization (0.30%)
Amazon PPC (0.26%)
Amazon Web Services (0.45%)
Rest of ECommerce (1.98%)
Shopify (0.51%)
Shopify Templates (0.16%)
Virtual Assistant (0.67%)
WooCommerce (0.21%)
eCommerce (0.74%)
Mathematics (0.19%)
Rest of Education and Tutoring (0.41%)
Arduino (0.21%)
Electrical Engineering (0.34%)
Electronics (0.24%)
Engineering (0.27%)
Rest of Engineering and Electronics (0.53%)
Accounting (0.70%)
Bookkeeping (0.38%)
Business Analysis (0.28%)
Business Plans (0.18%)
Finance (0.27%)
Rest of Finance and Accounting (1.29%)
Rest of Game Development (0.37%)
Adobe Illustrator (2.71%)
Adobe InDesign (0.28%)
Adobe Photoshop (3.29%)
Advertisement Design (0.34%)
Banner Design (0.32%)
Brochure Design (0.78%)
Flyer Design (0.24%)
Graphic Design (4.15%)
Logo Design (2.67%)
Photo Editing (0.34%)
Rest of Graphic Design (2.01%)
Microsoft Excel (1.34%)
Microsoft Office (0.19%)
Microsoft PowerPoint (0.30%)
Microsoft Word (0.23%)
Rest of Microsoft and Google Services (0.4
Software Architecture (0.41%)
Python (0.94%)
Rest of Programming (1.28%)
Swift (0.12%)
C++ Programming (0.04%)
Programming (0.49%)
Video Production (0.38%)
Video Services (0.32%)
Rest of Video Services (0.27%)
After Effects (0.53%)
Video Editing (0.18%)
.NET (0.62%)
AJAX (0.51%)
API (0.25%)
ASP.NET (0.35%)
Angular (0.41%)
Bootstrap (0.22%)
CSS (1.53%)
CodeIgniter (0.30%)
Django (0.22%)
Elementor (0.17%)
Front-End Development (0.19%)
HTML (3.13%)
JavaScript (1.68%)
Laravel (0.51%)
Microsoft SQL Server (0.17%)
MongoDB (0.17%)
MySQL (0.94%)
Node.js (0.60%)
PHP (2.97%)
PSD to HTML (0.17%)
React (0.64%)
Rest of Web Development (4.20%)
SQL (0.27%)
Vue.js (0.19%)
Web Application (0.07%)
Web Development (0.27%)
Website Design (2.07%)
WordPress (2.56%)
jQuery (0.18%)
2D Animation (0.28%)
3D Animation (0.39%)
3D Design (0.40%)
3D Modelling (0.54%)
3D Rendering (0.35%)
Animation (0.49%)
AutoCAD (0.34%)
Rest of Animation and Design (0.94%)
Android App Development (0.29%)
AngularJS (0.39%)
Flutter (0.28%)
Java (0.60%)
Mobile App Development (0.74%)
React Native (0.31%)
Rest of Application development (2.53%)
iOS Development (0.20%)
iPhone (0.21%)
AI (0.16%)
Machine Learning (ML) (0.28%)
Rest of Artificial Intelligence (0.56%)
Blockchain (0.18%)
Rest of Blockchain (0.11%)
Rest of Audio and Translation Services (0.45%)
Academic Writing (0.55%)
Academic Research (0.18%)
Article Writing (3.07%)
Blog Writing (0.96%)
Content Writing (1.44%)
Creative Writing (0.22%)
Editing & Proofreading (0.42%)
Ghostwriting (0.33%)
Report Writing (0.37%)
Research Writing (1.05%)
Rest of Content Writing (1.95%)
SEO Writing (0.16%)
Technical Writing (0.42%)
Typing (0.73%)
Data Analysis (0.29%)
Data Collection (0.67%)
Data Entry (2.25%)
Data Processing (0.58%)
Data Scraping (0.72%)
MATLAB (0.29%)
Rest of Data Handling (0.51%)
C# Programming (0.77%)
Linux (0.18%)
Rest of Database Development (1.07%)
Advertising (0.36%)
Branding (0.19%)
Copywriting (0.67%)
Corporate Identity (0.16%)
Customer Service (0.16%)
Customer Support (0.36%)
Digital Marketing (0.30%)
Email Handling (0.17%)
Email Marketing (0.27%)
Internet Marketing (0.26%)
Lead Generation (0.17%)
Rest of Digital Marketing (0.43%)
Search Engine Optimization (1.65%)
Social Media Marketing (1.11%)

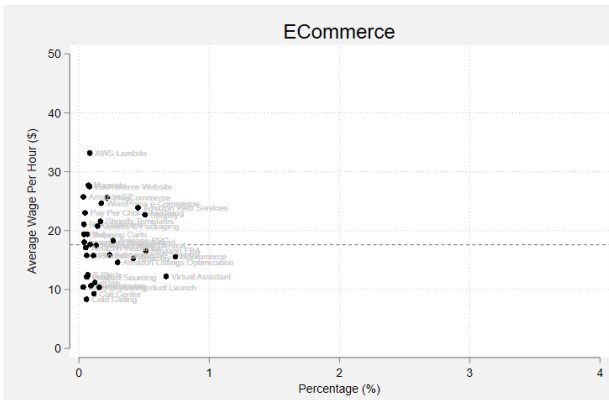
Annexure B

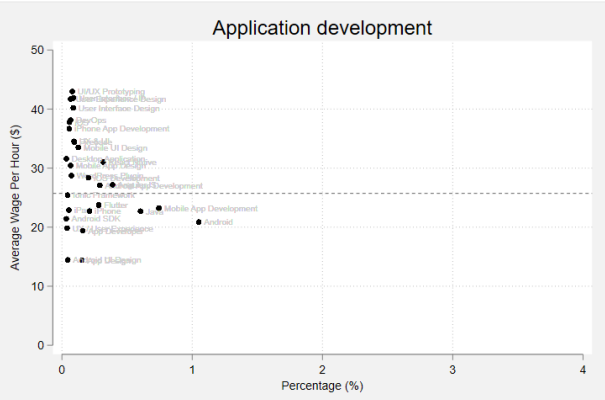

Web Development
Average Wage Per Hour ($)
Percentage (%)
JavaScript
PHP
MySQL
WordPress
HTML
CSS
Website Design

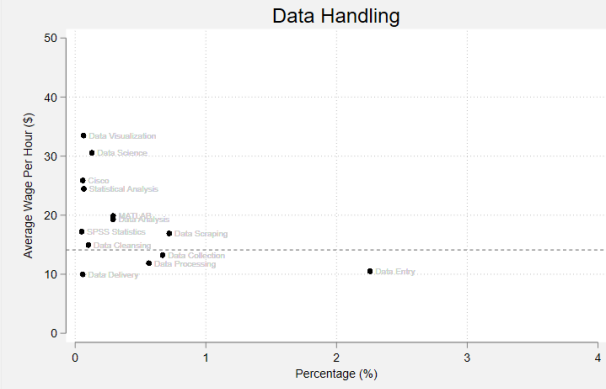
Graphic Design
Average Wage Per Hour ($)
Percentage (%)
Print Design
Banner Design

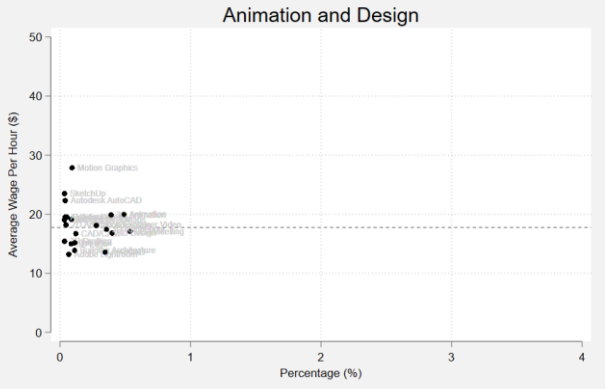

Content Writing
Average Wage Per Hour ($)
Percentage (%)
SEO Audit
Article Writing
Research Writing
Academic Writing
Typing
Web Search

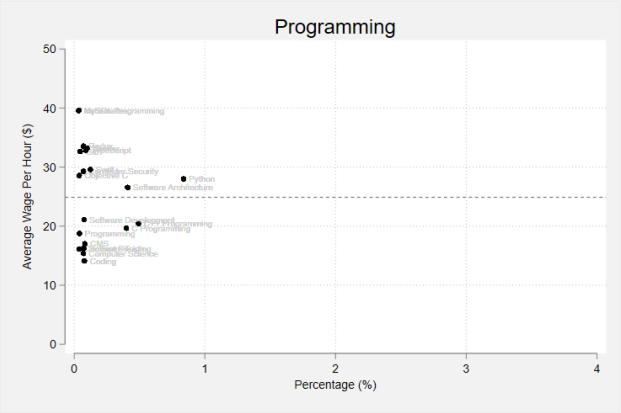

Digital Marketing
Average Wage Per Hour ($)
Percentage (%)
Corporate Identity
Social Media Marketing

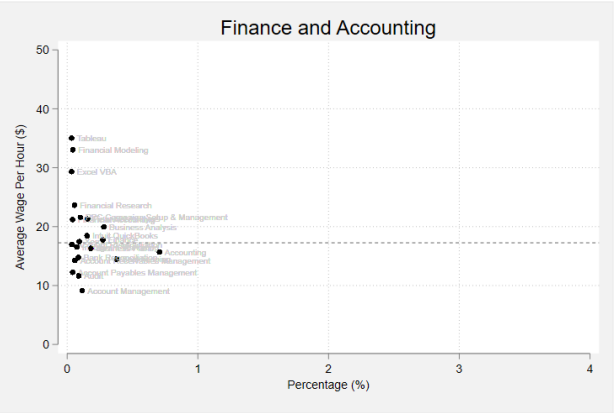

ECommerce
Average Wage Per Hour ($)
Percentage (%)
AWS Lambda
Virtual Assistant
Cold Calling

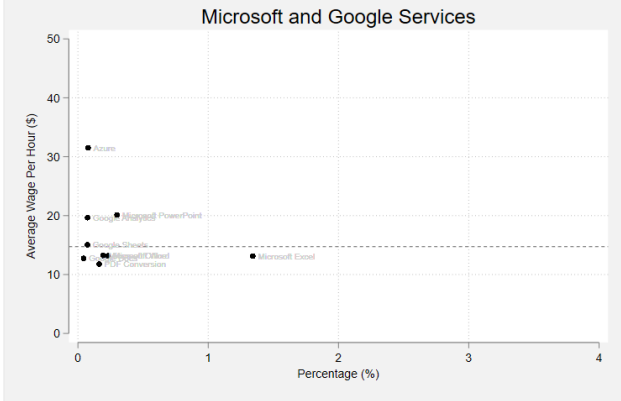

Application development
Average Wage Per Hour ($)
Percentage (%)
Mobile App Development
Android
Flutter


Data Handling
Average Wage Per Hour ($)
Percentage (%)
Data Visualization
Data Science
Data Scraping
Data Entry

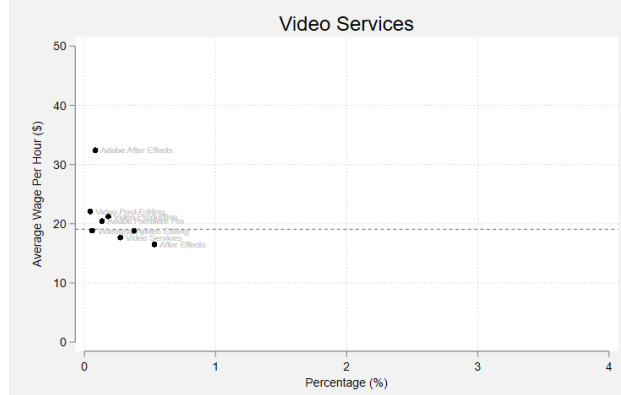

Animation and Design
Average Wage Per Hour ($)
Percentage (%)
Motion Graphics
Autodesk AutoCAD

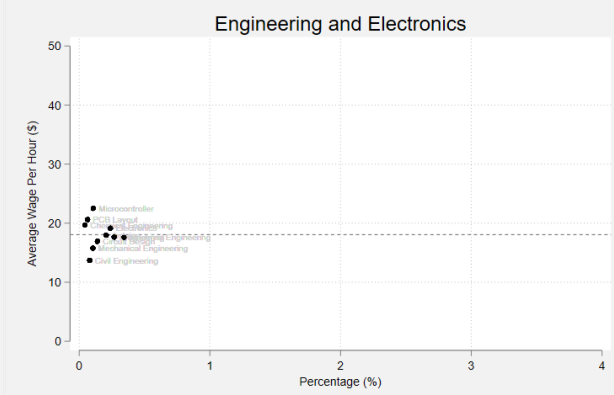

Programming
Average Wage Per Hour ($)
Percentage (%)
Python
Software Architecture

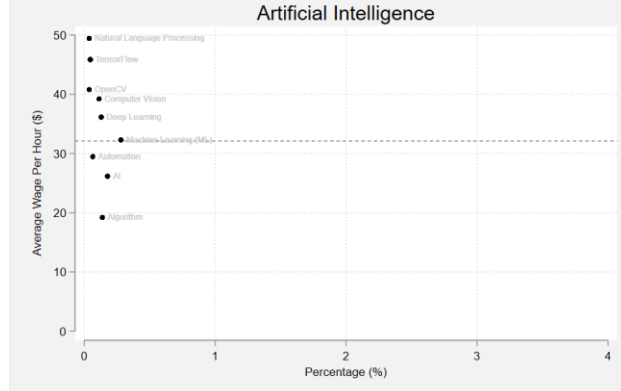

Finance and Accounting
Average Wage Per Hour ($)
Percentage (%)
Tableau
Financial Modeling
Excel VBA
Financial Research
Business Analysis
Accounting
Account Payables Management
Account Management

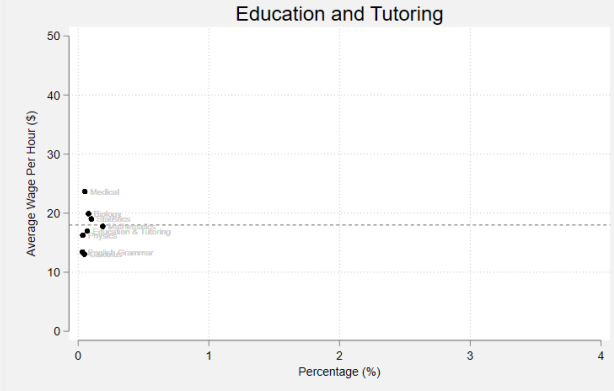

Microsoft and Google Services
Average Wage Per Hour ($)
Percentage (%)
Azure
Microsoft Excel

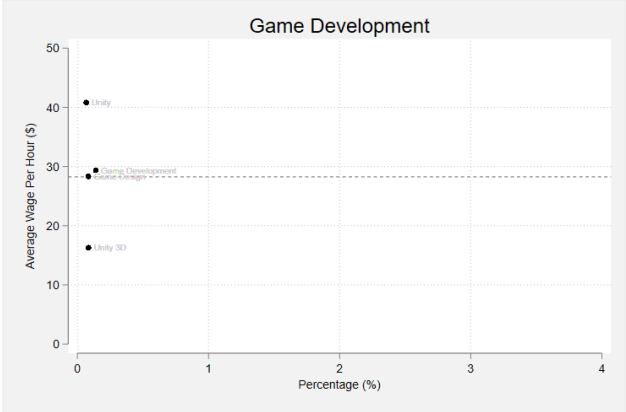
Database Development
Average Wage Per Hour ($)
Percentage (%)
.NET Framework
Linux
C# Programming
.NET Core
Database Development

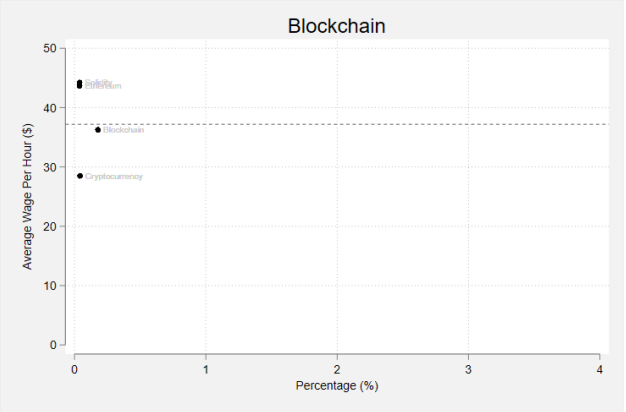

Video Services
Average Wage Per Hour ($)
Percentage (%)
Adobe After Effects

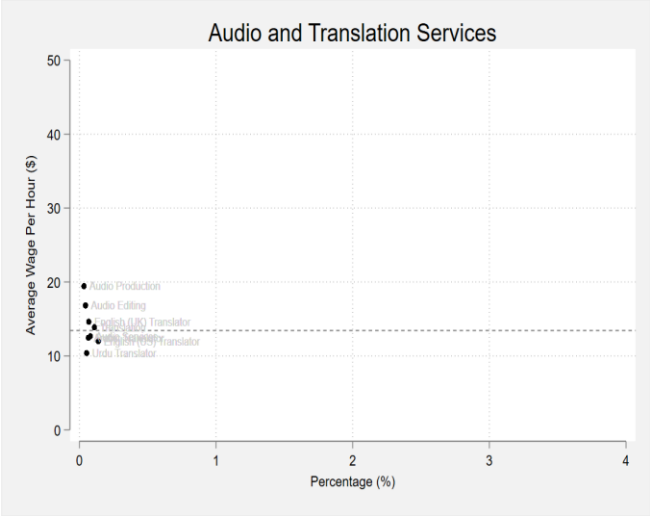

Engineering and Electronics
Average Wage Per Hour ($)
Percentage (%)
Microcontroller
Mechanical Engineering
Civil Engineering


Artificial Intelligence
Average Wage Per Hour ($)
Percentage (%)
Natural Language Processing
TensorFlow
OpenCV
Computer Vision
Deep Learning
Automation
AI
Algorithm


Education and Tutoring
Average Wage Per Hour ($)
Percentage (%)
Medical


Game Development
Average Wage Per Hour ($)
Percentage (%)
Unity
Unity 3D


Blockchain
Average Wage Per Hour ($)
Percentage (%)
Blockchain
Cryptocurrency


Audio and Translation Services
Average Wage Per Hour ($)
Percentage (%)
Audio Production
Audio Editing
Urdu Translator