Predicting the AI-Driven Freelance Marketplace. A Case Study of Fiverr Gigs of Pakistan

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Artificial Intelligence (AI) affects worldwide economic performance because freelance marketplaces have become fundamental platforms to use AI innovations. This research examines AI effects on Pakistan's freelance market using Fiverr gigs while focusing on AI mobile application development, together with AI website/software development services. The selection of these categories occurred because clients increasingly needed them, while contemporary industries required more AI-powered solutions. The research gathers Fiverr gig information systematically to identify main patterns about service types and client patterns, and freelancer earnings in the AI domains. Second-degree polynomial regression analyzed with Ridge regularization methods generated predictions about income development during 24 months from April 2025 until March 2027. Data shows a robust non-linear pattern of growth, which demonstrates that AI-powered freelance services provide substantial income benefits to Pakistani skilled freelancers, thus making Pakistan a rising center for AI-based digital freelancers development. Along with analyses of system competition, skills difficulty, and market capacity saturation, the research suggests proven methods to address these factors. This research provides strategic guidance to freelancers, together with investors and policymakers, who intend to enhance Pakistan's position in the global freelance AI economy. Continuous skill development alongside enhanced infrastructure and supportive policy frameworks will enable the complete economic extraction of AI-driven freelance marketplaces, according to the research findings.

Keywords. Artificial Intelligence; Freelancing; Gig-economy; Pakistan, and Fiverr.

Introduction.

The global freelancing economy has expanded significantly over the past decade, driven largely by technological advancements and the growing demand for white-collar services among remote workers. Freelancing has proved to be an important source of income for many people, particularly in technology-intensive sectors like Pakistan. Thousands of skilled professionals in Pakistan offer their services on platforms like Fiverr, Upwork, and Freelancer, positioning the country among the leading freelance marketplaces globally.

Artificial Intelligence (AI) has transformed how work is conducted across industries, and the freelance sector is no exception in the past few years. Freelancers can streamline their work processes with the cutting-edge approach of AI toward providing faster, better, and super-custom solutions. The Freelancers Union reports that online freelancers are increasingly leveraging AI to automate repetitive tasks, improve service quality, and enhance client satisfaction through automated service delivery. Key AI-related freelance services include AI-powered mobile app development, website creation, and software solutions. These freelancing services typically embrace advanced technologies, including machine learning (ML) algorithms, Natural Language Processing (NLP), and predictive analytics; all in high demand now among businesses interested in innovating to remain competitive. For freelancers, these categories represent a landscape full of income potential, rather than skill and competition opportunities [1].

Pakistan is an ideal location to investigate AI's impact on freelancing, being a developing country with a digital and freelancing economy in the region. The authors of [2] state that very little research exists regarding the various earning modes through AI gigs in Pakistan, with a particular focus on online freelancing. This study has set out to fill the lacunae through the collection and analysis of Fiverr gig data into two selected categories to indicate patterns of demand, assess the earnings potential, and analyze the long-term implications for the region's freelancing sector. This study focuses on three main objectives. First, we extract Fiverr data about AI mobile app development, and AI website and software development to figure out which services are in high demand and profitable. Second, it uses predictive modeling to generate income predictions for freelancers in these categories, indicating the possible future impact of AI-powered gigs will have on Pakistan's economy. Third, it highlights the difficulties that freelancers face while adopting AI technologies, such as unawareness, intense competition, and resource constraints, and suggests possible solutions to mitigate the effects of these challenges.

This research presents real examples to further state the technology-freelance discourse concerning how AI is changing the gig economy. The findings are particularly relevant for policymakers, freelancers, and investors interested in exploring AI's potential for promoting sustainable economic growth. Focusing on the distinctive freelance ecosystem of Pakistan, emphasizes the importance of digital entrepreneurship in the advancement of innovation and economic resilience in developing nations [3].

While a substantial body of literature addresses freelancing in developing economies, few studies have specifically examined the impact of AI on gig marketplaces, particularly in the context of Pakistan. Most existing studies either discuss AI-driven gig economies at a global level or focus primarily on traditional freelancing categories, often overlooking the specific challenges and opportunities associated with AI-powered services within the unique context of Pakistan [4]. However, the current endeavor not only fills that gap but also provides practical advice to the relevant stakeholders on how to enhance the pros of the AI integration into freelancing.

Subsequently, this paper outlines the methodology of data analysis, presents the findings, and offers an extensive discussion on the implications of the results. In this context,

particular attention is given to AI-powered services to develop a deeper understanding of Pakistan's emerging freelance economy and assess its long-term viability.

Literature Review.

Artificial intelligence has changed many aspects concerning the freelancing environment. workflows, different categories of services, and even income dynamics among freelancers. This literature review brings together some of the recent studies in this area, emphasizing the emergence of AI-driven services, such as the development of AI mobile applications, AI websites, and software development, explaining the overall understanding of contemporary research and the identification of the gaps targeted by the current study.

According to sources [5][6], a particularly noteworthy shift brought about by generative AI tools on freelance platforms is the automation of simpler tasks such as data entry and basic programming. This has, in turn, led to increased demand for more complex, creative, and strategic tasks that still require human expertise. For instance, there has been a significant rise in projects involving AI integration, including developing machine learning models and designing user interfaces for automated systems. Huang et al. [7] further underlined that, although Large Language Models (LLMs), like ChatGPT, have indeed reduced demand on some freelancing tasks, at the same time, they have also created opportunities for more skilled freelancers. Their analytical study highlights a 'polarization effect,' where simpler tasks are increasingly automated, while high-skilled freelancers specializing in areas like AI-supported app and website development continue to dominate. This trend is likely to have significant implications for freelancers in developing countries such as Pakistan, where a large portion of the workforce relies heavily on technology-enabled services.

AI-driven services are giving rise to new categories within freelance marketplaces. These emerging technologies include, but are not limited to, machine learning integration, predictive analytics, and AI chatbot development. Different research has shown that these services are gaining momentum, especially in offshore locations, where companies are just beginning to adopt the AI revolution to be able to operationalize efficiencies or expect AI to conduct future innovation agendas [8].

Emerging AI expert freelancers offering innovative services, such as tailored GPT solutions, AI-integrated recommendation engines, and programming in automated app functions. Boetung et al. [9] studied the freelance market differentiating features where independent freelancers consider AI tools in their services. The latest findings indicated how the adoption of AI tools not only extends the productivity levels of freelancers but also enables them to charge higher fees for offering their services. This would probably increase the chance for Pakistani freelancers to earn more through AI tools, provided they have access to capacity-building programs and infrastructure.

In recent years, Pakistan has emerged as a major freelancing hub, with over one million active freelancers contributing significantly to the national economy [10]. Among others, the country has been reported to be ranking the highest in terms of the adoption of freelance markets globally while making a good combination of low operational cost, a youth population exposed and proficient in technology, and government initiatives backing the development of digital skills [10]. Despite these reports, very limited research has been directed toward understanding the effects of AI service industries on the freelance market in Pakistan.

Although various reports have been published, they tend to focus on traditional freelancing services such as content writing and graphic design, while largely overlooking the exponentially growing sector of AI-assisted services [3]. The literature gap indicates that specialized research is warranted on the role of AI in earning modalities for freelancers in Pakistan. The demand for AI mobile applications, AI website development, and AI software development aims to provide some opportunities to explore the long-term economic benefits of AI, which are increasing day by day.

While AI holds vast potential for freelancers, its widespread adoption has been hindered by several barriers, chief among them being the lack of accessible and affordable training and education in AI technologies. Studies indicate that freelancers in developing economies find it impossible to keep pace with the inevitable march of technology with scant resources and infrastructure (Modern Diplomacy, 2024). The intense competition on platforms like Fiverr also makes it difficult for newcomers to establish themselves in AI-mediated service categories [11].

Kassi and Lehdonvirta [12] highlight that the worldwide workforce now includes online labor platforms, which play crucial roles in developing economies. Our research supports this trend because Fiverr gigs related to AI mobile applications and AI website/software development from Pakistan have shown a continuous upward trend.

According to Berg et al. [13], digital labor platforms produce economic effects while balancing challenges when it comes to fair work conditions and stable income. A second-degree polynomial regression combined with Ridge regularization in this research shows an upward non-linear evolution of income during 24 months for Pakistani freelancers working in the AI market.

Research conducted by Silverman [14] on Fiverr gigs explored pricing structure and popularity patterns but did not develop models for specific countries or categories. This research examines Pakistani freelancers offering AI-powered services and demonstrates that these services create the most profitable opportunities.

Malik and Wahid [15] examined structural elements and policy aspects of Pakistani freelancing, yet they did not use predictive analytics. We conducted empirical-based predictions together with strategic knowledge, which helps individuals and institutions who intend to expand Pakistan's digital economy.

Graham et al. [16] issued warnings about the potential issues of labor oversupply and platform competition risks. This research demonstrates that Fiverr AI segments are facing intensified competition, but AI development services persist as profitable options because of their challenging requirements and client interest.

The influx of freelancers into high-demand categories is leading to market saturation, with increased price competition expected as a result. This growing freelancer population poses a significant risk of declining average earnings across the sector. Pakistani freelancers need to consider this issue because their counterparts in India and Bangladesh maintain similar cost benefits in the market to prevail [17].

While the future looks bright for freelancers in Pakistan adopting AI technology, there lies on their path a multitude of challenges. Statistics provide certain macro-level insights; real-life cases, however, give us specific insights into the day-to-day struggles of freelancers trying to infuse AI into their service offerings.

The research included specific Fiverr case studies, which demonstrated how Pakistani freelancers deliver AI-based services in practice. The case studies present realistic approaches freelancers use in AI projects, together with their pricing approaches and user feedback to show essential elements that drive success in this AI service market.

Case Study 1. Restricted Access to Advanced AI Tools and Training.

Ahmed is a freelance developer based in Multan and has been offering AI chatbot services since 2022. However, Pakistan, despite a good grounding in Python, faced extreme difficulty in acquiring advanced AI training related to Natural Language Processing (NLP). The paid resources through platforms like Coursera or edX were either out of Ahmed's reach or could not be localized. It was under such an isolated scenario, without mentorship or any practical exposure, that he could hardly live up to client expectations on Fiverr, resulting in dire consequences. cancellations of projects and poor ratings.

This corresponds to the issues raised in Modern Diplomacy (2024), which stated that structured AI training is mostly unavailable for freelancers in the developing world, allowing talented individuals to slip behind in this fast-paced global tech marketplace.

Case Study 2. Platform Competition and Algorithmic Visibility.

Fatima, an AI app developer from Peshawar, began her Fiverr profile with the making of healthcare apps with the use of AI. She competitively priced her apps, but visibility remained an issue. The algorithm of Fiverr tends to promote profiles already in good standing. The result is more like a closure for the newcomers, whether the newcomers have very good skills. Fatima stated that most buyers would go for Level 2 or Top-Rated sellers, thus leaving early-career freelancers with fewer opportunities.

Here, the observations of Boeteng et al. [9] are affirmed that often freelance platforms will sleep on giving out their visibility and rating algorithms. This leaves a great deal of skepticism for any market entry without paid promotions/campaigns or extraordinary early traction.

Case Study 3. Infrastructure and Power Issues.

Rashid, a freelancer from interior Sindh, had an AI model training project on computer vision. Damage had already been done, but there was technical backup. Power was never there, and getting a GPU was difficult. Later, he had to outsource the training work to a friend in Lahore, thereby eating into his profit and delaying delivery.

Thus, it highlights the infrastructural bottlenecks that do not allow for the fair sharing of serious AI work across geographical regions within Pakistan. Thus lack of access to high-performance computing remains a significant bottleneck.

Case Study 4. Marketplace Misunderstanding of AI Services.

Several freelancers have pointed out that clients on Fiverr often misunderstand and undervalue AI services. For instance, some called "AI automation" services get confused and mismatched with simple automation scripts or templates, leading to disagreement over price and delivery scope. Sellers like Bilal from Lahore shared that it takes an inordinate amount of communication effort to explain the difference between a custom-trained machine learning model and a rule-based automation bot, most of which went unpaid.

Client education is lacking in this regard, creating friction in the way freelancers are rated and how they view their jobs, thus echoing the concern raised in Liu et al. [5] about the gap between technical complexity and market understanding.

Novelty Statement.

The study represents an original approach to predicting Pakistani freelance income trends by examining Fiverr data from AI website/software development, and AI mobile application services. The research employs additional regression methods, along with Ridge regularization and second-degree polynomial analysis, to predict earnings momentum over two years. The study positions the growing AI service demand in Pakistan's freelance market while addressing a widely neglected topic in existing research. This study develops a data-based analytical framework to extract and process freelance data from Fiverr gigs, which enables researchers to replicate their findings across various studies. The research demonstrates Pakistan's rising global importance within AI-based digital freelancing services and enables policymakers to develop new strategies for workforce development and freelancer training that enhance the country's market performance.

Objectives of the Study.

The objective of this research is to investigate the effects of AI on Pakistan's freelance economy through Fiverr platform analysis of AI Mobile Applications and AI Websites/Software Development services. The analysis investigates market demand patterns and service offerings along with revenue generation in these specific areas before using second-degree polynomial regression with Ridge regularization for 24-month (April 2025 to

March 2027) income prediction. This research explores AI's transformation of freelancers by moving it from basic work toward advanced and strategic creative solutions. The research includes actionable suggestions and policy recommendations that assist freelancers and digital platforms, and policymakers to develop sustainable growth while establishing Pakistan as a significant force within the global AI-driven freelance economy.

Method.

The research design comprises three distinct phases, encompassing the research methodology, data collection techniques, and analysis procedures aimed at forecasting earnings within Pakistan's AI-driven freelance industry. The research centers its analysis on AI-based web and software application development, and AI mobile app development services accessible through Fiverr. The research uses Python to predict earnings growth through Fiverr gig creation in developing sectors.
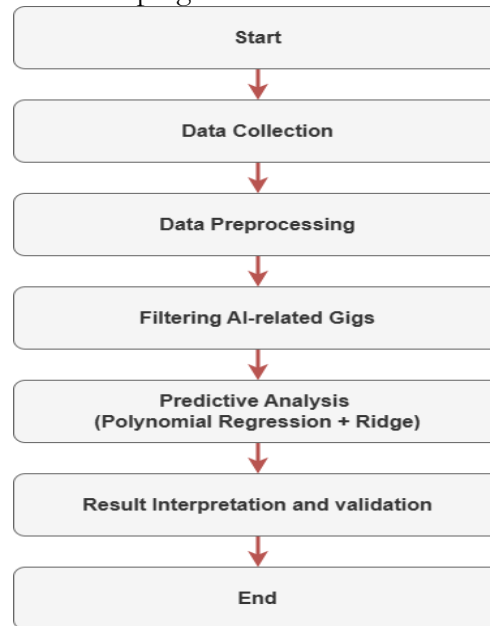

Figure 1. Workflow of a Research Method

Research Design.

The research design, as shown in Figure 1, uses a quantitative method for data analysis with predictive modeling techniques and interpretation of results. The research analyzes AI-based freelance data from Fiverr to predict future earnings in AI website/software development and AI mobile application development in Pakistan. Predictive modeling represents a methodological framework that estimates future earnings in the gig economy because this economy relies heavily on developments in AI technologies.

The study proceeds as follows.

Dataset.

Data relevant to gig operations from Fiverr has been extracted and filtered to leave only those services related to AI that are offered by freelancers in Pakistan.

Data Preprocessing.

It involves cleaning and structuring the collected data concerning consistency and reliability.

Predictive Analysis.

It involves going through historical trends and predicting future income trajectories using machine-learning algorithms from Python.

Interpretation and Validation.

The results assess the accuracy of the model while interpreting the results in the context of the freelance economy in Pakistan.

Data Collection.

The data collection process involves the following steps.

Data Source.

This research relies on Fiverr as its primary data source, given its status as one of the world's largest freelance platforms. On Fiverr, users can access a wide range of services, including those related to AI development. The research data collection strategy examines two core sections. AI website and software development, along with AI mobile application development. The selected categories represent Fiverr's growing market trends and revenue potential because empirical studies demonstrate their increasing demand.

Data Extraction.

Data extraction involves gathering pertinent information from organized as well as unorganized data sources to facilitate analytical processes and enhance decision quality. Research success in data-driven projects depends on effective data extraction because it guarantees precise and comprehensive datasets, which lead to valuable insights. Real-time market trends emerge from data extraction of Fiverr and other freelancing platforms to enable researchers to generate accurate predictions [18].

The study implemented web scraping as its data extraction method to retrieve publicly accessible non-proprietary internet source information. Web scraping functions through automated scripts or programs that navigate web pages to extract data in structured and semi-structured formats for analysis purposes, according to [19].

The focused data retrieval centered on essential variables that pertain to AI website and software development, and AI mobile application development services found on Fiverr. The selected variables deliver complete market insights together with freelancer performance metrics and pricing structures, as well as relevant indicators for analysis.

Data extraction was done using Python libraries like BeautifulSoup and Selenium, and using Data Miner to automatically acquire HTML content from the public web pages of Fiverr. The scraping scripts were designed to mimic human interactions by abiding primarily by standard requisites and delaying relatively, to spare Fiverr servers from being struck with requests.

The pages that are only available for public use were accessed. The scraping procedure thus remained compliant with Fiverr's terms of service by staying away from login-restricted, private, or paid content, throttling requests in a rate-limited fashion to prevent undue server load, and ensuring no Personal Identifiable Information (PII) was collected. Furthermore, full transparency was maintained for the sources and methods utilized in the study, which is in agreement with ethical norms for secondary data research. Scraped data was not used for trade or distribution.

The key variables extracted from Fiverr from active Gigs of Pakistani Freelancers are as shown in Table 1.

Table 1. Key variables extracted from Fiverr gigs

Attribute	Description
Gig Title	Descriptive titles of freelancers about the services they offer.
Category and Subcategory	Bifurcation of gigs under the AI services category to justify relevance and eligibility.
Pricing Tiers	Structured pricing levels. Basic**,** Standard, and Premium plans.
Seller Rating and Reviews	Performance metrics derived from client feedback indicate quality and reliability.
Seller Location	Geographic filtering, focusing on freelancers based in Pakistan**.**
Completion Time	The estimated duration required to complete the AI project.
Delivery Time	Promised delivery schedule for the gig.

Order Volume	Number of completed orders per gig, representing the demand level.

The essential step of data cleaning, known as data preprocessing, serves to locate and resolve data problems that affect data quality standards [20]. The quality of data suffers from two major problems that lead to biased predictive models and poor model reliability, so organizations must prioritize effective cleaning methods. Effective data cleaning improves the performance of the machine learning models for predictive analysis [21].

Data Preprocessing Techniques.

After extracting the Fiverr Dataset, a certain process of preprocessing was carried out to clean the dataset of its inconsistencies and to standardize it for further predictive analysis. The implemented techniques are the following.

Removing Duplicate and Inactive Gigs.

Duplicate gigs usually found in the same seller profile more than once have been identified and discarded to remove redundancy in the data. Gigs with no user activity in the past six months were excluded from the scope to ensure that only relevant and actively maintained listings were analyzed.

Standardizing Currency Values.

Since Fiverr allows sellers to list their prices in various currencies, all monetary values were converted to USD using real-time exchange rates to ensure consistency in the analysis.

Handling Null Data.

In the case of categorical variables like gig descriptions and pricing tiers, the missing entries were filled in with the model value. The most frequently occurring values would have been entered in the case of numerical values like order volume and seller ratings, since it deals with the use of mean or median imputation, so that they do not skew the bias in analysis.

Filtering Out Irrelevant Gigs.

Some of the gigs classified under the AI services were not AI-driven (i.e., generic software development gigs). A filtering process was implemented to retain only AI-related gigs, ensuring that the collected data aligned with the research objectives. These preprocessing steps were essential for producing a high-quality dataset suitable for predictive analysis using machine learning applications.

Some of the limitations of the predictive models are as follows.

Danger of Overfitting.

It might overfit the historical data because it uses the second-degree polynomial model along with non-linear trends in its models. This would thus restrict the model's ability to forecast accurately in highly volatile or structurally changing markets, such as where a gig category would either be introduced or defined differently through shifts in algorithmic processes on Fiverr [22].

Generalization.

Model trained on Pakistan freelancers under two AI gig categories. Thus, it may not generalize well to another country, to another platform (e.g., Upwork), or another freelancing domain (e.g., design or writing) because platform dynamics and client evaluation tend to differ.

Market Trends Unpredictable

The freelance economy makes it particularly difficult concerning tech-related services and, therefore, is inherently influenced by macroeconomic factors, global AI trends, Fiverr's internal policies, and client demand. Resulting volatility will frequently drive earnings patterns in such a manner that historical data may not fully anticipate.

Limited Data

The reliance on scraped data means there could be unobserved factors such as private client interactions, off-platform transactions, or changing seller behaviors that are not captured by the model but influence actual earnings [23]

Results.

In this section, we provide the results of the income prediction analysis of AI-based freelance services on Fiverr with a particular focus on Pakistani freelancers. The research was focused on two trends. Freelance gig profiles in AI mobile app development, and AI website and software development. The objective of this study was to make use of long-term cumulative income data from Fiverr gig profiles to build regression models that can predict the future trends of earnings.
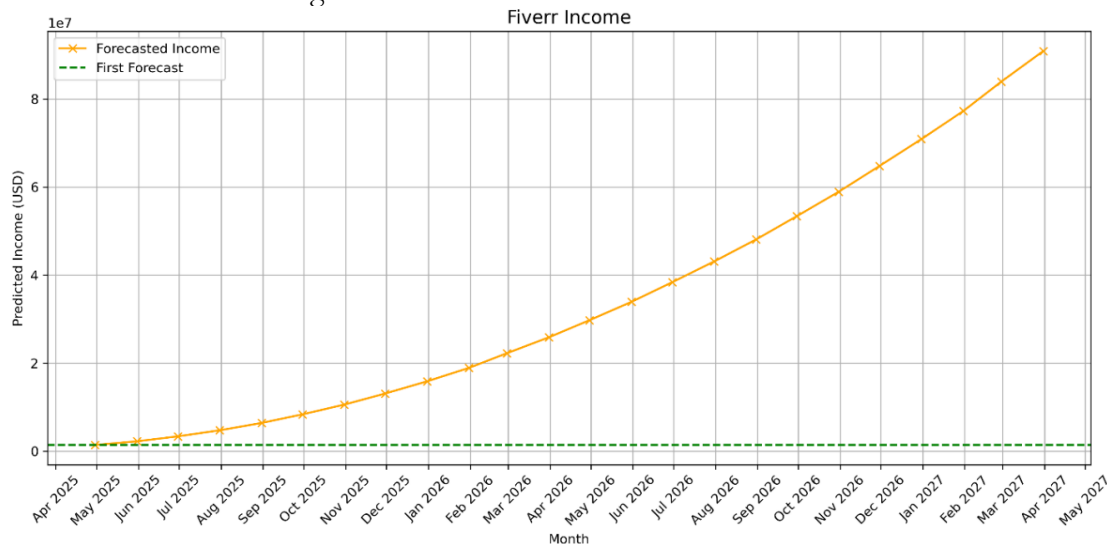

Figure 2. Prediction of Fiverr income of Pakistani Freelancers through AI gigs

To enhance the analysis, a second-degree polynomial regression was fitted with Ridge regularization ($\alpha = 1.0$) to remove multicollinearity and prevent overfitting. The analysis was done on an individual basis for each AI service category to estimate freelance income for the period of 24 months from April 2025 – March 2027. Using this technique, the resultant trend lines were smoothed and correctly captured the non-linear movement of the growth in rates of freelance income.

In Figure 2, the cumulative forecast of income for both categories is shown. The parabolic profile of the curve fitted to the data indicated that freelance earnings are set to increase more rapidly during the forecast period rather than at a constant rate. An R-Squared (R^2) value of 0.7500 indicates that approximately 75% of the variations in income are explained by the model, which represents its high predictive efficiency and appropriateness. The high R-squared value emphasizes the appropriateness of polynomial regression for detecting the subtleties of income fluctuations that are typical of gig work.

The steady increase in income curves indicates a steady increase in demand for AI-powered freelance offerings on Fiverr. This growth reflects the changing global trend for AI integration in many industries, with the demand for AI skills and growth in freelance positions on digital labor markets.

In Figure 3, the earnings forecasts for AI mobile applications and AI website/software are categorized. The results show that AI website and software development yield much greater income growth rates compared with the rates for mobile AI services. This observation points to a stronger trend and saturation in web and software gigs, mainly due to increased use of AI in enterprise systems, e-commerce sites, and software-as-a-service.

However, the income trajectory in AI mobile app development is on the rise, but it is not as steep as in areas like website and software development. There are various reasons why this could be the case, ranging from increased competition, easier access to the market, and hardware deficiencies in mobile devices that curtail the sophistication of AI capabilities on

mobile platforms. However, the outlook shows potential for growth in both sectors, strengthening a positive outlook for AI freelancing in Pakistan.

A deeper investigation of the timeline exposed seasonality, as well as monthly changes in the rates of growth for earnings. The data showed that the last two quarters (i.e., the third and fourth) always showed higher increases in earnings than the first two quarters of the year. Such seasonal trends may be associated with such things as higher levels of digital transformation demand at the end of financial and calendar years, seasonal budgetary reallocations by clients, or industry-specific optimized periods for software roll-out. The analysis of these trends helps individuals in the industry to maximize their capacity management, price effectively, and invest in relevant skill growth. Analysis of model residuals was used to determine the variance and identify any other patterns that the regression did not take into consideration. Random distribution of residuals around zero in the plots confirmed that the model was not noticeably biased or heteroskedastic.

Discussion.

The analysis of both Figures 2 and 3 shows an exponential increase in the demand for AI projects on Fiverr, which indicates the continuous improvement of freelance marketplace opportunities in AI. The R-squared (R^2) value obtained for the income prediction model, using second-degree polynomial regression, with Ridge regularization ($\alpha = 1.0$) was 0.7500. Such a result implies that the model has been able to represent 75% of the income data, which in turn supports the credibility and efficiency of the predictive approach used in this research.

This trend pinpoints a significant increase in potential earnings from AI-based freelance work, at the same time when AI technologies have become ubiquitous around the globe. The huge increase in projected income, particularly in AI website and software development, demonstrates the increasing worth of AI competencies and the critical role these services are assuming in the development of the freelance industry.

The paper offers a pioneering empirical view of AI-enabled freelance work in Pakistan's digital world, a neglected topic in the existing academic literature. Based on the analysis of income forecasts created from April 2025 to March 2027, this study provides a vital understanding of the financial opportunities and scalability of AI-based freelance work in Pakistan.
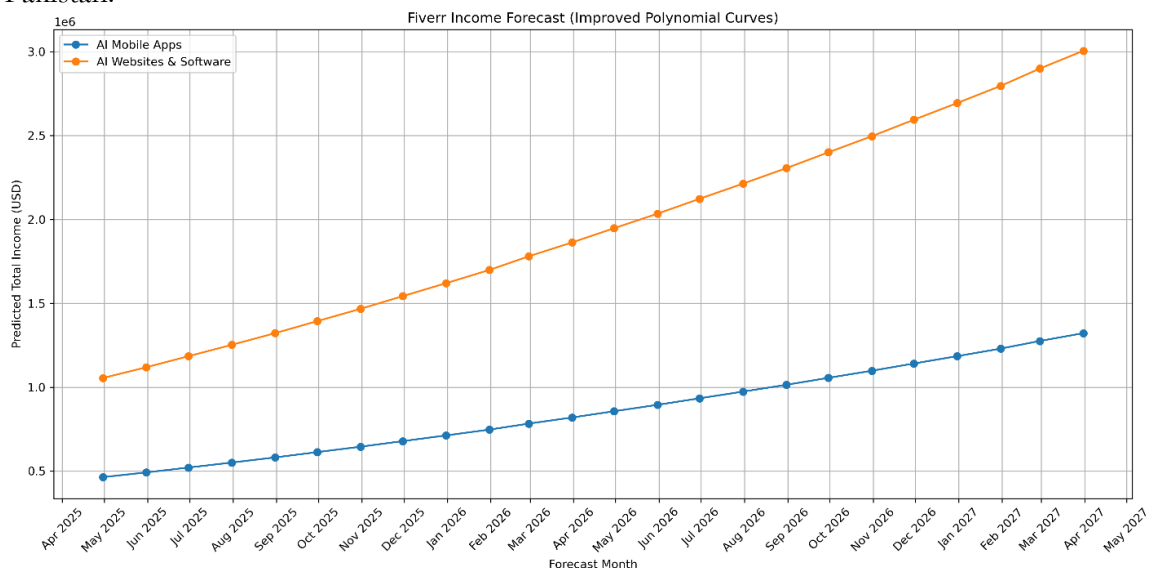

Figure 3. Prediction of Fiverr income of Pakistani Freelancers through AI Gig categories

Moreover, the increased demand for AI website and software development services, which stands out more clearly on the predictive curve, suggests a segment of the market with outstanding growth potential. This finding suggests that strategic interventions, workforce

development efforts, and targeted investments could help Pakistan to build a significantly greater ability to compete in the digital economy and foster larger economic self-sufficiency among freelancers. Insights drawn from this research are of significant value to freelancers who may want to specialize in high-demand AI positions, platform developers who are focused on improving AI gigs, and policymakers who are determined to develop a knowledge-based freelance industry.

This study closes an important knowledge gap by examining and projecting AI-based freelance earnings on a global platform from the perspective of a developing country, Pakistan. Through the examination of digital labor markets, AI entrepreneurship, and economic development from a Pakistani point of view, this study adds value to the field and suggests viable strategies to strengthen sustainable freelance ecosystems in Pakistan.

Conclusion and Future Work.

This research examined AI's influence on Pakistan's freelance sector through an investigation of Fiverr's platform data, which operates as one of the world's biggest freelance services providers. The research focused on understanding income patterns along with demand changes and forecasted earnings for AI mobile applications, and AI websites & software development freelancers with a special focus on the latter. A Ridge regularized second-degree polynomial regression model created predictions of income spanning 24 months, from April 2025 through March 2027. AI service offerings throughout the digital gig economy demonstrated a robust, nonlinear upward growth trajectory through the projects generated from the analysis.

The predictive model exhibits strong explanatory capabilities because its R-squared value reached 0.7500, which shows that 75% of observed income variations could be attributed to the model. AI capabilities take on a crucial role for upcoming freelancing markets while making Pakistan a potential rising force within AI-driven digital entrepreneurship operations worldwide. Pakistan shows promising potential to benefit from the ongoing AI transformation because it possesses an upcoming tech-savvy workforce that continues to expand its global market presence.

The present study reveals significant findings, but the researchers recognize multiple shortcomings within its methodology. The insufficient availability of up-to-the-moment transaction records restricted the analysis from achieving precise time-based measurements. Enhancing predictive robustness will require future research to apply monthly dataset analysis, which would allow more advanced forecasting models like LSTM networks and ARIMA models. Geospatial analytics and client segmentation combined would generate more detailed knowledge about how AI gigs are used across different parts of Pakistan and their specific business sectors.

The exploration of AI adoption barriers among Pakistani freelancers requires investigation of their restricted AI training access and marketplace competition pressure, and digital technology infrastructure limitations. A dual research method, which blends quantitative forecasting techniques with surveys and interviews as qualitative methods, would generate more comprehensive information about freelancers' encounters along with their adaptive approaches and survival capabilities during the AI transformation period.

This study focuses on Fiverr as the major case for evidence of public data availability and where the platform is perceived to have a strong presence in Pakistan, but the authors realize that confining the assessment to a single platform limits the generalizability of the findings. Future studies must therefore gather data from other freelancing platforms such as Upwork and Freelancer, which may appeal to different demographic profiles, pricing policies, and AI service niches. Including multiple platforms would allow comparisons across several platforms, determine wider market trends, and add robustness to predictive insights for

different freelancing environments. This would represent the AI-driven freelance economy in Pakistan more effectively and extend the external validity of forecasting models.

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