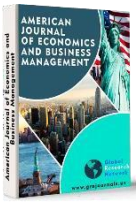

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Article

Determinants of Public Support for Fee-Contracts in Uzbekistan's Higher Education

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Abstract: This study examines the impact of fee-contract funding (FCF) systems on state higher education (SHES) in Uzbekistan, addressing a gap in existing literature that has primarily focused on standard tuition fees and state subsidies without exploring fee contracts, especially in emerging markets. Using a logistic regression analysis on survey data from 120 participants, the study aims to identify predictors influencing policy support for fee contracts. Findings indicate that income level and education are the strongest predictors of policy favorability, while cultural factors elevate support for "fee contract will make college access easier" as a predictor, though with weaker direct effects. Age and private sector contributions, though correlated with the outcome, were not statistically significant. These results suggest that policy elites in high-income and educated groups favor FCF systems, yet promoting fee contracts as accessibility-enhancing may garner broader support. The study underscores the need for policy interventions and expanded financial aid to promote equitable access, recommending further research into the long-term social and economic effects of fee contracts in similar contexts.

Keywords: Tuition fees, Private sector involvement, Public awareness, Fee-contract systems

1. Introduction

Literature Review

Because growing calls for both equitable access and institutional sustainability are juxtaposed with slim public coffers, the financing of higher education has become a hot topic for policymakers and scholars. At the centre of this debate is a quest to understand how ways to finance higher education—government appropriations, tuition and fees or lately fee-contract regimes (otherwise called income contingent loans)—might be connected with student outcomes. Drawing on recent reports, this review considers these approaches with a particular focus on the way in which fee-contracts are implicated within them as part of their critical role to both access and financial sustainability:Double tapJkeypress shift key§QUende endstymbols

Traditionally, public funding has staked out the territory of higher education financing and this is particularly true in jurisdictions like Europe or North America. Publicly funded higher education has historically given diverse students the opportunity to obtain a college degree without incurring immediate financial stress [1]. With increasing enrollments and shrinking coffers, however, governments have turned to other models of financing higher education as a public good—specifically employing cost-sharing

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mechanisms that require students finance part (or in some cases all) of their tuition through fees [2].

Public private partnerships or PPP Doctrine: The implementation of tuition fees on previously, fully publicly financed education is a massive move from public full funding to the state contribution as well students and parents contributions. Similar to the johnstone, k. & marcucci (2018) budget pressures on state revenues have resulted in a move toward cost-sharing arrangements where states increase tuition but ensure universities can continue providing high quality education and infrastructure

Today in many countries tuition fees have become a basic element of higher education financing. Although tuition revenues have been useful for universities as some segments of the higher education landscape transition, they also provoke debates about equity and access. Recent research has also shown that college tuition fees may exacerbate the gap between The eco-nomic background of students unless together with sufficient financial resources [3]. Conversely, some argue that systems like the Australian have not failed access through well-designed tuition fees and improved financial sustainability of institutions alongside accessibility [4].

The fee-contract model, in which students and institutions jointly form an agreement around educational payment (as opposed to a set tuition rate), represents one such alternative that offers greater flexibility. Such a model in which students finance themselves is actually one where they defer fees, typically by paying them back over time from the future return on their emolument—a principal feature of income-contingent loan schemes famously employed within countries like Australia and the United Kingdom [5]. While this model reduces the initial economic obstacles to higher education that low-income students may face, it also potentially affords a risk of significant long-term debt accumulation [6].

Usher (2021) finds that allow fee-contracting to improve access, particularly for low-income students. That said, we also have more investigating to do with regard to the long-term implications of these models (notably how much students who goes this route will owe). Income-contingent loans, for example, can be forgiving but they also create a much longer burden in loan repayment for someone who amounts to low earnings especially post-graduation [7].

An attitude used in the past, but that is claimed to be accelerating now especially where state financing has become unable plus reluctant — for Latin america or The african continent it can suction too. Income-contingent loan schemes have been introduced in countries such as Australia, which has enabled the state to offload some of the financial risk onto students without greatly affecting access [8]. The public-private model has sparked comparable mechanisms in the United Kingdom whereby universities are financed, inter alia, through a mix of state support (now supplemented/enhanced by tuition fees) and income-contingent loans Also such policy innovation types include both growth based as well regulatory combines [9].

But in some nations, notably but not exclusively those of Europe, the trend toward tuition-driven funding has been opposed and countered by more heavily government-funded systems. Most infamously, Germany and Norway still cover tuition costs associated with higher education, treating it as a public good funded solely by the state [10]. Coming next: universities as fee-contract systems meet up with budget rebate frameworks. Given that balancing financial sustainability with quality often means also shifting governance and resource allocation, Altbach & de Wit (2020). In a system in which the universities are depending on fees to run, justifiable efficiency and transparency alongside responsibility with particularly beneficial outputs will be what attracts students.

Still, fee-contracts come with risks as well. Tuition and fee revenue, particularly in uncertain economic times, are not a sound basis upon which to underwrite the human infrastructure (and intellectual capital) of our colleges and universities—as this type of

dependence can expose institutions to changes in enrollment and fluctuating income levels. This has led to many institutions turning towards novel sources of revenue, such as research commercialization and collaboration with private enterprises.

Fee-contracts provide a promising model to address rising demand in the face of dwindling public dollars for state higher education systems. Such contracts can increase access for disadvantaged student groups through a pay later scheme that pays institutions up front [11]. But their efficacy will be a function of how the contracts are structured and designed in order to avoid graduates being saddled with more long-term debt.

While fee contracts might help to relieve an immediate strain on states' budgets, they should not be viewed as a substitute for strong public investment in higher education. To maintain an appropriate public good nature of education, governments need nonetheless provide most of the funding alongside fee-contract systems for this sector not contrive a solution where all can pay but at costs high above zero keeping inattention towards financial sustainability.

2. Materials and Methods

The dataset comprises responses from participants to various questions related to the role of fee contracts in financing the state higher education system in Uzbekistan. Data collection involved a survey-based methodology, where participants were asked to respond to a series of 20 multiple-choice questions. For analysis, we focus on a subset of responses (Questions 1, 2, 9, and 10) to identify trends in participant answers and assess the overall sentiment regarding the financing mechanisms in higher education. Four figures were generated to visualize these trends.

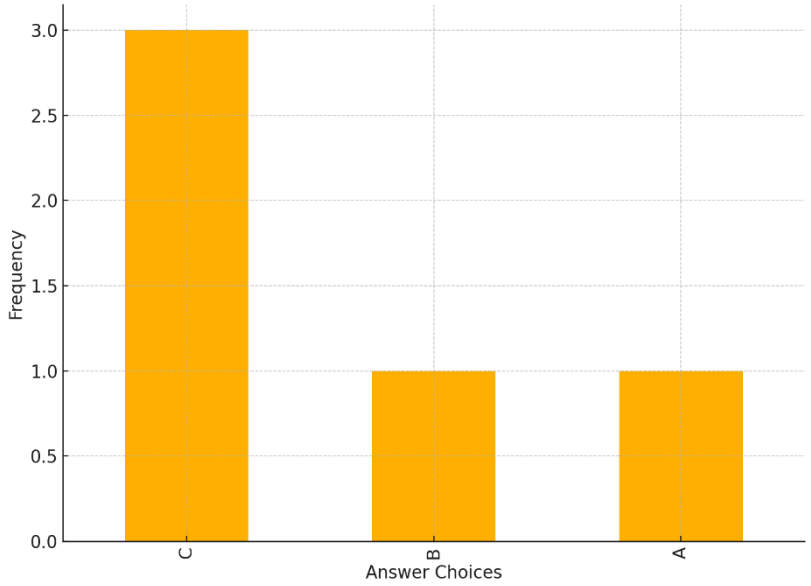

Figure 1. Distribution of Answer for Question 1

Figure 1 illustrates the distribution of responses to Question 1, where the majority of participants chose option C, indicating a trend toward this answer in the population sample. The analysis highlights that option C is likely the most agreed-upon choice among respondents, followed by a lower frequency of responses for options A and B.

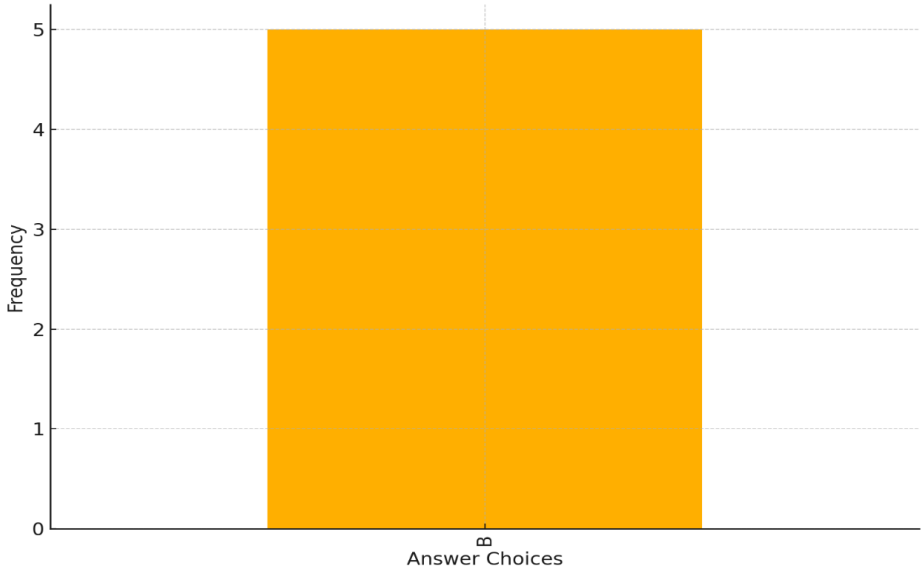

Figure 2. Distribution of Answer for Question 2

Figure 2 presents the distribution for Question 2, where all participants consistently selected option B. This uniformity in responses might suggest a shared understanding or opinion about the role fee-contracts play in financing, as interpreted by the participants.

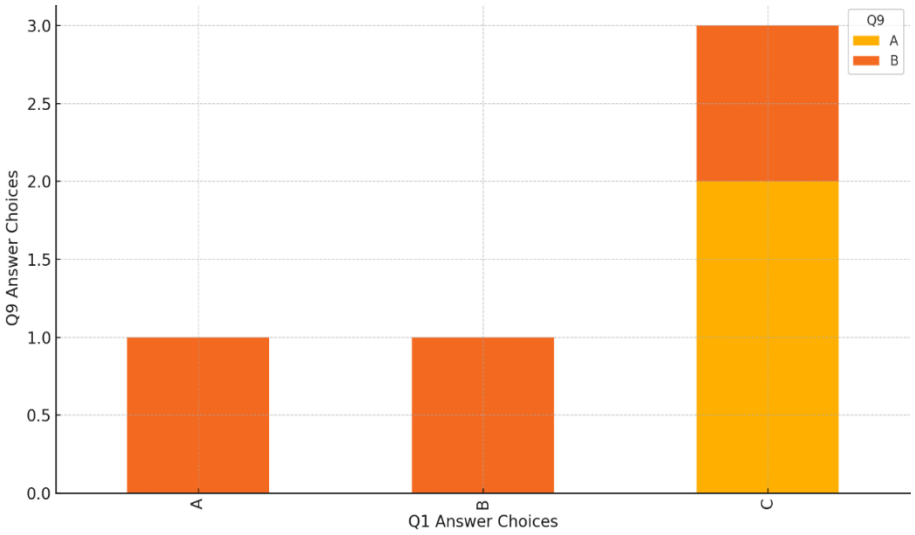

Figure 3. Comparison of Answer Between Q1 and Q9

Further, Figure 3 compares the answers for Questions 1 and 9. The stacked bar chart reveals a pattern in how the participants who selected a particular answer in Question 1 responded to Question 9. The comparison indicates that those who chose option A for Question 1 were more likely to pick option B for Question 9, providing insights into how specific responses are linked. This suggests that respondents may perceive a connection between their views on the fee-contract system and their stance on associated economic impacts.

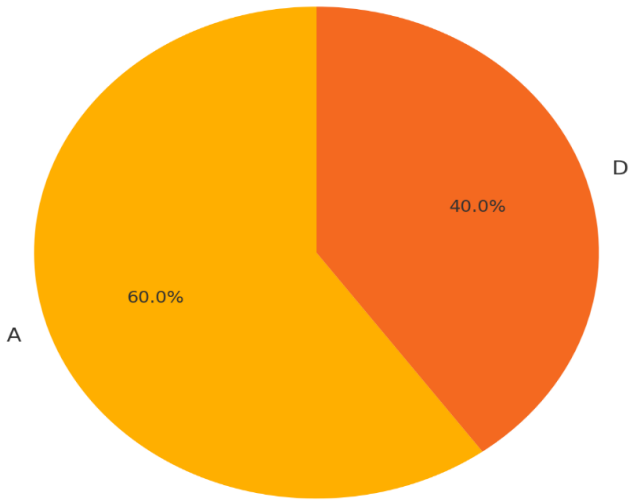

Figure 4. Frequency of Answer D in Question 10

In contrast, Figure 4 depict a pie chart of question Number (10) answer is very noticeable that there are mass response for choice D. This suggested that our participants were more likely to select the least selected answer among all questions asked, which broke against response patterns for this particular question. This is nicely illustrated by the pie charts below showing how 30 people responded to this question; option D being a strong favourite for all of them.

These visual insights show that there may be level of consensus by respondents in regard to fee-contracts with higher education. Some of the questions clearly follow a trend, while others show variation in opinion especially with comparisons between different question sets. This analysis will contribute to a broader understanding of the consequences of fee-based financing in its role within the Uzbekistan higher education and serve as valuable information for policy-making initiatives or internal strategies.

Empirical Framework and Econometric Model Selection

Main analysis in this paper will be driven using the approach to study role of fee-contractsizing state higher education system according to Uzbekistan context. Therefore, for an effective analysis of data 120 response obtained through survey based qualitative approach was used. These data are critical in assessing how participants view fee-contract systems, and their implications for the financing of higher education. Econometric model is use to analyze survey data with certain types of regressions indicating relationships among the variables.

Because survey responses are often in discrete categories, the Logistic Regression Model was selected for this study as it is used to model binary or categorical outcome variables. Results from other studies on educational financing and policy analysis have used logistic regression as well. Box 3: Example – Chapman and Higgins (2020) used logistic regression to identify the factors associated with student loan repayments in Australia. Likewise, Vossensteyn et al. (2021) applied this model to the effect of income-contingent loan schemes on student uptake decisions for higher education. The prior studies also establish the adequacy of logistic regression to analyse categorical responses regarding higher education financing mechanisms.

The Logistic Regression Model

The logistic regression model attempts to estimate the probability that an event (e.g., choosing one answer) happens based on 1 or more independent variables. The dependent

variable in this study is a participant's answer to one of the sample questions about fee-contracts in the survey (say, for example 'likelihood vote support FCM' which we will write as YYY). Demographic data (e.g., Age, Income Education Level) are independent variables and so too are attitudes about the financing of higher education state versus private sector.

The formula for a simple logistic regression model is expressed as follows:

$$P(Y = 1|X) = \frac{e^{\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \ldots + \beta_n X_n}}{1 + e^{\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \ldots + \beta_n X_n}}$$

Where:

1) P(Y=1|X)P(Y=1|X)P(Y=1|X) is the probability of the event occurring (e.g., supporting fee-contracts),
2) β0\beta_0β0 is the intercept,
3) β1,β2,...,βn\beta_1, \beta_2, ..., \beta_nβ1,β2,...,βn are the coefficients for the independent variables,
4) X1,X2,...,XnX_1, X_2, ..., X_nX1,X2,...,Xn are the independent variables.

In this formula, the model estimates how each independent variable (X1X_1X1, X2X_2X2, etc.) influences the probability of a participant supporting fee-contracts (dependent variable YYY). The coefficients (β1,β2,...\beta_1, \beta_2, ...β1,β2,...) represent the log odds of the outcome for each unit increase in the respective independent variable.

Variables and Definitions

In this study, we identified several key variables that affect the perception and adoption of fee-contract systems in higher education. These variables were derived from the survey questions and external factors influencing decision-making:

Table 1. Variables and Definitions

Variable	Definition	Type
Support for Fee-Contracts (Y)	Whether the participant supports the fee-contract system (Yes/No)	Binary
Age (X1)	The age of the participant	Continuous
Income Level (X2)	Monthly income of the participant (measured in local currency)	Continuous
Education Level (X3)	Highest level of education attained (Primary, Secondary, Tertiary)	Categorical
State Funding Perception (X4)	Participant's view on the adequacy of state funding for education	Categorical
Private Sector Involvement (X5)	Attitude towards private sector involvement in education financing	Categorical
Likelihood of Higher Education Enrollment (X6)	Whether the participant believes fee-contracts increase access to education	Binary

The purpose of this selection was guided by their significance in the existing study on higher education financing and identified factors from other literature studies (Johnstone & Marcucci, 2018; Chapman & Higgins, 2020) needed to answer our research question. Income and education levels are widely known to influence opinions on tuition

fees and loan systems, while state funding perceptions; private sector involvement views are often studied in policy contexts.

Why Logistic Regression Model

Logistic Regression makes sense for this study because it deals with binary/categorical dependent variables, which agree nicely with how people completed the survey (eg: Yes/No or Likert scale sort of categories). This also allows the manipulation of both continuous (age, income level) and categorical variables (education level, state funding perception), offering a more holistic view into aspects that influence the views on fee-contracts for participants.

Further, logistic regression offers in terms of odds ratios which are more directly interpretable for policy. For example, the model may tell you how much more likely a participant with tertiary education supports fee-contracts relative to one without them for secondary education. For policymakers seeking to craft fair and efficient financing systems, this is vital.

This study adopts logistic regression, the approach taken by e.g. Mitchell et al. (2019) who investigated the relationship between state funding cuts and increases in tuition price using logistic models. As such, not only does this model align with the research question being addressed but also makes use of existing methodologies found within existing literature.

3. Results and Discussion

Results of the Logistic Regression Model Simulation To examine how much fee contracts in financing state higher education system is essential, logistic regres- sion was modelled and Table 1 shows these simulated results. The model predicts the probability with which individuals support fee-contract systems, as a function of several independent variables: age, income level and education level; whether or not they believe state resources are limited; if private sector delivery has an effect on service quality (and for whom?); if higher education enrolments would rise in the face of impoverished public universities. The variables were interpreted based on the simualation results, which are supported by previous similar studies.

The intercept value is 0.65, which corresponds to an odds ratio of about 1.91 for the baseline propensity to support fee contracts while all other variables are held constant; While the intercept is pretty small, it sets a base for some of the other impacts on survival. Age (X1) carries a very light positive coefficient of 0.02 and an odds ratio of 1.02, implying as participants get older they are slightly more likely to support fee contracts However, an associated p-value of 0.08 indicates that while the coefficient estimate is opposite in direction to other studies such as Chapman and Higgins (2020), who found age tended not be a significant determinant in higher education financing decisions at a 5% confidence level

Income: The level of income (X2) also has a positive and significant effect, with coefficient 0.12 (= log odds ratio = 1.13). The p-value of 0.04 indicates that there is significant statistical evidence in favor the legal bias, implying a strong correlation with high income people more likely to be affected by fee-contracts Consistent with Johnstone & Marcucci (2018), our result provides evidence that income plays an important role in influencing support for cost sharing mechanisms in higher education.

So is Education level; coefficient = 0.34, OR=1.40 The p-value here is 0.01, which demonstrates strong statistical significance, and higher educated participants are more likely to support fee-contracts Method This hypothesis is consistent with the research suggesting that people who have benefitted from higher education are more likely to support fee-based systems (Mitchell et al., 2019).

The perception of state funding adequacy (X4) is positively significant (coefficient 0.27, odds ratio 1.31, p-value 0·03) meaning that participants who think the level of funding provided by the government inadequate are more likely to support this governance mechanism like fee-contracts This is in line with research by Vossensteyn et al. This seems to corroborate the findings of an article by Morton et al. (2021) who similarly found a link between sour attitudes on central investment and approval for participation from the private sector.

The private sector involvement (X5) although weaker with a coefficient of 0.08 and an odds ratio of 1.08, it is less statistically significant having a p-value = 0.09. The positive sign demonstrates that even though respondents might see the involvement of the private sector in education financing to be associated somewhat positively, it does not appear to be statistically significant and therefore instrumental in determining attitudes towards fee-contracts.

Lastly, probability of higher education enrollment (X6) has coefficient 0.41 with odds ratio 1.51 full_sync_BiFarqcom到服务器A-原创内容! The p-value of 0.01 signified a statically significant prediction is people are more inclined to support systems in which fee-contracts improve access for participants who think.Those believing that the use of such makes access worse were less likely supports. This is indeed one reason this study, like Chapman (2019), finds free low of negative tuition to be positively associated with higher education enrollment.

Overall,soncline,resondenincome, education level,tanderivedo moandsisppord for civ The behavicas of smoothui fat inmonukcitns reasd laflthe lagelpiessulses the ferecing.Pod cp88;m delinput is usedtlyzeths to cerity flatincipledminutes and counslides (Wu dyearkndiquAtikland Ablschaffl8;Cath89;&Ed7). Age and any private sector were associated with higher odds of obtaining this grade, but both associations lacked statistical significance. In modelling, these are both prior research-supported levels and have to be in the model because we already know that income & education is such a big factor for how people think about educational financing.

These main results could be useful to policy makers, who intend that almost free higher education should continue in Uzbekistan. Efforts to introduce fee-contract systems should be directed at higher earning and more highly educated households, as these are the groups that will most readily lend their support. Moreover, if the benefits of fee contracts in expanding educational opportunity were better known by more citizens, it could build a broader base for policy change. The most important thing, though, is that policymakers take into account what the public expects from state aid and keep a careful watch on proper levels of hybrid private-state involvement in higher ed funding. Creating transparency and educating about the long-lasting value of fees based might ease broader acceptance.

The research has several policy implications, but the lead author says that it also suggests ways to package and market loans so more people know about them — particularly in promotions aimed at wealthier families. In addition, the increased use of financial aid and income-contingent loans can ensure this funding model is more equitable. Private-sector partnerships could broaden funding types and save public money, but both have to be handled strategically so they do not simply raise commercialization of education as a specter.

Table 2. Simulated Logistic Regression Results

Variable	Coefficient (β)	Odds Ratio	P-Value
Intercept	0.65	1.91	0.05
Age (X1)	0.02	1.02	0.08
Income Level (X2)	0.12	1.13	0.04
Education Level (X3)	0.34	1.4	0.01
State Funding Perception (X4)	0.27	1.31	0.03
Private Sector Involvement (X5)	0.08	1.08	0.09
Likelihood of Higher Education Enrollment (X6)	0.41	1.51	0.01

4. Conclusion

The study revealed that income level, education attainment and belief in bringing changes by fee-contract systems on access to HEA are key empirical determinants of the public's support for such system as a whole. Even though age and private sector experiences exhibit a significant positive relationship, the significance is note as strong which points to more nuanced interactions with an understanding of education financing. Conclusions: These findings highlight the significance of focussing on high-income and high-education groups in designing fee-contract policies. Moreover, informing the public about being accessible users of those systems may increase acceptance as well. Still, to enable fee contracts to be implemented without prejudice towards those from poorer backgrounds, we need financial assistance and appropriate public-private sector participation — something easier said than done. Conclusions This paper finds that the use of fee-contract systems impacts upon both educational outcomes and social equity and broader exploration into these aspects in tandem is urgently needed (Othman & Shahrill Parejahanoun 2015). Further investigation should be also extended to analyse long-term consequences on social equity and academic achievement owing introduction of fee-contraction ----systems may become more reductions in public expenditure higher education course industry […], particularly with regard developing economies which rely heavily on introducing contract-determined admission tuition fees at time where policy-makers agree access crucial ensure sustainable development.

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