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Financial Anxiety among International Students in Higher Education: A Comparative Analysis between International Students in the United States of America and China

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Abstract: Financial anxiety is one of the most stress-causing factors, destabilizing students' academic activities and performance. This study investigated whether there was any financial anxiety in international students in higher education institutions by comparing students in the USA and mainland China. The study employed a random-effect ordered probit model that utilised a sample size of 3953 international students during the academic years 2017–2019. The findings showed a significantly low rate of financial anxiety among international students in the United States, while international students in China experienced a highly significant financial anxiety as far as academic life was concerned. Additionally, a robustness check using marginal effects in probit showed a positive life satisfaction towards financial behaviour after the study period in the USA, while a negative life satisfaction towards financial behaviour existed in mainland China. Nevertheless, the study put forward vital recommendations to help address this phenomenon and strengthen the relationship between international students and administrators of higher education institutions in both countries.

Keywords: USA; China; financial anxiety; international students; probit model

1. Introduction

The growing participation of foreign students in international higher education in recent decades has drawn attention to students' well-being and the impact of financial stress on them. Recent national surveys show that college students' finances are one of the leading causes of stress [1]. For example, most Americans experience top sources of anxiety, which include money, followed by work and the economy [2]. Again, personal financial difficulties are worth exploring in detail, given the challenges international students face regarding the growing burden of academic finances. A recent report from a nonprofit financial education advocate found that four of the top five stressors among college students involved problems related to personal finances [3]. Additionally, higher education institutions at all levels are facing extraordinary challenges at the present time; namely, demographic shifts, rising costs of providing higher education, and limited sources of funding [4]. It has been well established that effective decision making is related to both financial competencies and

levels of financial anxiety [5]. Empirically, this suggests that those experiencing financial stress have difficulty making decisions [6].

Anxiety has steadily increased in recent years for college students [7]. For instance, in a multisite study, approximately 7 out of 10 college students experienced stress in their finances [8]. In addition, other studies indicated that women are more likely to report financial stress than men [9]. Financial stress has been linked to reduced course loads or dropout and poorer academic performance [10,11]. Reference [12] explored college students' financial characteristics affecting their academic success. As a result, students rely heavily on such financial resources for better education [13].

Significantly, it is imperative to recognise that stress and anxiety are common among students at every level of the academic sphere. Fortunately, financial aid such as scholarships, grants, and other cost-reduction measures help more students break out of the poverty cycle and earn their academic degrees. This study explored the financial behaviour and academic life satisfaction among foreign students in the USA and mainland China, and further, provided an understanding of financial stress in higher education institutions in the above-mentioned countries. Moreover, this study can serve as an information source for stakeholders in the industry, and importantly, add to the existing literature on the subject matter. Specifically, it provides more empirical evidence on how international students in China encounter financial anxiety; therefore, it can guide policymakers and the various higher education institutions in China to implement intervention programs to mitigate the impact of financial anxiety on international students. The study addressed a research question regarding whether there is financial distress among foreign students in higher education, and how significantly this impacts their academic performance. Given the critical developmental stage of financial stress among students, we paved the way to a more detailed analysis on the subject matter based on the application of the Roy adaptation model [14] in explaining financial anxiety among international students at higher education institutions.

2. Literature Review

Financial anxiety is a significant concern due to its adverse outcomes associated with an increased risk of stress. Financial anxiety among students is often chronic. There is a direct link between mental health and financial wellness [15]; likewise, research has identified a link between financial difficulties and health problems such as anxiety and depression [16–18]. Therefore, it is helpful to adopt a health-related model in examining how college students deal with financial stress in higher education institutions. Ref. [19] posited that financial stress is the inability to meet one's financial obligations but can also include psychological or emotional effects. A similar finding reported by [5] fit well with a person's physiological behaviour, whilst [20] explained that high levels of anxiety can lead to a form of learned helplessness. This demonstrates the unpleasant feeling that one cannot meet financial demands, afford the necessities of life, and have sufficient funds to make ends meet [21]. Additionally, Ref. [22] defined the concept as a process in which someone has an unhealthy attitude towards thinking about, engaging with, or administrating their financial situation effectively. In a nutshell, financial anxiety is any worry or stress surrounding personal finances or money. Experts recognised this as a phenomenon that can have a profound negative impact on an individual's health and well-being [23,24].

According to [25], financial anxiety affects students' minds and bodies, which eventually leads to counseling and medical treatment. Financial anxiety can have significant effects on students' health. Some expected consequences of stress include the following: in the body, the affected persons experience health issues such as headache, muscle pain/tension, fatigue, sleeping problems, chest pain, stomach upset, and changes in sex drive, among others; while on behavioural grounds, students experience restlessness, a lack of motivation (focus), irritability/anger, depression, drug or alcohol abuse, social withdrawal, fear, and panic. In sum, common developmental effects of financial anxiety include sleeplessness, mood swings, tiredness, loss of appetite, and withdrawal from others [26].

Traditionally, college students are uniquely vulnerable to stress and anxiety, but managing these experiences can make a world of difference. The leading causes of financial anxiety for students include the inability to meet tuition or loan payments or the desire to go on school trips, since the lack of adequate funds causes financial anxiety and stress.

Financing education through grants and financial support from governments worldwide is widely perceived to ensure access to quality education. A study by Ohio State University shows the primary funding support in higher education. According to the study, about 36% of students are financially supported by loans, 35% supported by scholarships, 19% are supported by their families, 4% of students are financially supported by the jobs they are engaged in, 3% by savings, and another 3% by other support systems [12]. Primarily, these figures depict the extent to which students are supported by different sources in the pursuit of their higher education. Globally, this helps eliminate or mitigate the gap between low-income countries (students) and high-income countries (students) accessing the same quality tutoring at all levels of education.

The internationalization of higher education has proliferated the mobility of students to access higher education abroad. Many rationales inform students' travel abroad to access foreign higher education. A study conducted by [27] showed the rationale of student mobility based on the push–pull model. The study revealed that the push factors consist of high cost of graduate education, unavailability of some academic courses in students' home country, international exposure, and unemployment issues, these factors influence international students' decision to move abroad to access higher education. On the other hand, the pull factors to attract international students by other countries consist of scholarship opportunities, global job opportunities, university's prestige, and the global ranking, and technological advancement in certain oversea countries [27]. International students focus on several factors to access foreign higher education, especially in developed countries. This has intensified the competition among countries to improve their higher education to attract many international students.

The United States stands as the country with the highest number of international students globally. There has been a steady increase in the number of international students studying in the USA annually. For instance, there were 572,509 international students studying in the USA in 2003/2004 academic year, this number increased tremendously to 819,644 international students in 2012/2013, and 1,095,299 in 2018/2019 academic year respectively [28]. However, the number dropped to 1,075,496 in the 2019/2020, in 2020/2021 academic year, there was a sharp drop to 914,095 international students' due to the impact of the global pandemic (COVID-19) affecting global academic mobility [28].

On the other hand, China hosted 492,185 international students in the 2018/2019 academic year [28]. Among this number, 63,041, or 12.81% of the total of international students, received a Chinese government scholarship (full or partial scholarship), while 429,144, equivalent to 87.19%, were also self-funded students [29]. According to [30], the number of international students studying in both the USA and China during the 2018/2019 academic year showed that the USA hosted more than twice the total number of international students in China due to several factors. On this premise, the study compared the financial anxiety experienced by international students in the USA and China, because the United States hosts the largest number of international students globally, while China is an emerging global hub of higher education. Currently, China is the third-largest host of international students, approximately 10% of the total number of international students globally [31] and is the top international destination of international students in Asia. Hence, in this narrative, it is essential to assess the financial anxiety that international students in both countries are likely to encounter, and recommend measures to ease this anxiety to provide a conducive academic environment for international students.

Hence, from the above discussion of related studies, we formed four key hypotheses:

Hypothesis 1 (H1). *Student financial behaviour is inadequate and more likely to cause financial stress.*

Hypothesis 2 (H2). *Graduating students will be more likely to be financially stressed.*

Hypothesis 3 (H3). *Students with high family income support will display lesser financial stress than students with low or middle levels of family income.*

Hypothesis 4 (H4). *Students' college aftermath experiences will be more likely to cause financial stress.*

Roy Adaptation Model (RAM)

The adaptation in Reference [14] refers to a process and outcome whereby thinking and feeling persons as individuals or in groups use conscious awareness and choice to create human and environmental integration. A person's adaption level represents the condition of the life processes, and it is described in three stages: integrated, compensatory, and compromised life processes. An integrated life process may change to a compensatory process that attempts to re-establish adaptation. If the compensatory processes are not adequate, compromised processes result [14]. In addition, both researchers identified the basic type of adaptive process; namely, the regulator and cognate subsystem. The former responds through neural, chemical, and endocrine coping channels, producing an automatic unconscious response to events; whilst the latter responds through four cognitive–emotional channels: perceptual and information processing, learning, judgement, and emotion. Significantly, the authors stated that four modes that respond to and interact with the environment can be carried out, and adaptation can be observed. These four behaviour/adaptive modes include physiologic–physical mode, self-concept group identify mode, role function mode, and interdependence mode.

Behaviour in the physiologic–physical mode manifests the physiologic activities of all cells, organs, tissues, and systems making up the body. This behaviour is a clear manifestation of adapting to changes in a person's physical environment. Secondly, the self-concept group identify mode includes the components of the physical self, including body sensation and body image; and the personal self, including self-consistency, self-ideal, and moral–ethical–spiritual self. Thirdly, the role function mode focuses on the roles of persons in societies and the roles within a group. This underlines the role function mode of social integrity, which is the need to know who one is in relation to others to know how to act. Finally, the interdependence mode is a category of behaviour related to interdependent relationships. This mode focuses on interactions related to the giving and receiving of love, respect, and values.

In a nutshell, the Roy adaptation model explores the three classes of stimuli in the environment: the focal stimulus, contextual stimuli, and residual stimuli. The focal stimulus is the internal or external stimulus most immediately in the awareness of the individual or group (the object or event most present in the consciousness). Contextual stimuli are all other stimuli present in the situation that contribute to the effect of the focal stimulus. All the environmental factors present to the human adaptive system are from within or outside, but are not the centre of attention (these factors do influence how people deal with the focal stimulus). Residual stimuli are environmental factors within or outside human systems, the effects of which are unclear in the situation. The effects may be unclear if there is no awareness on the part of the patient that a stimulus is an influence, or it may not be clear to the observer that these stimuli influence the human system.

The concept of the Roy adaptation model is clearly and consistently defined in line with human behaviour and, importantly, enhances the interaction of human systems within the environment. From the model, one can appreciate that the changing environment stimulates a person to engage in adaptive responses, since they have the opportunity to continue to grow, develop, and emotionally process events when they occur. This framework identified the coping mechanism and self-concept as two components of a human adaptive system's control process and effector (respectively). As the international student is confronted with possible financial stressors (stimuli) in a new environment

(coping mechanism) and acts in response through self-concept (studentship package and positivity), the output is either financial stress (illness) or no financial stress (academic excellence). This empirical model based on the RAM is presented in Figure 1.
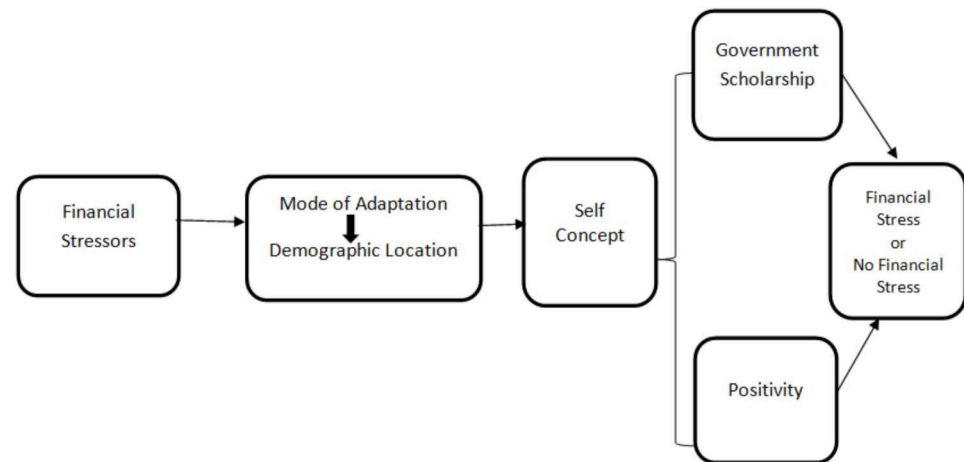

Figure 1. Conceptual framework from the Roy adaptation model.

3. Methodology

This study employed a random-effect ordered probit model with a Mundlak correction to examine financial distress among international students in higher education and how significant this impact was on their academic performance. This model had the advantage of controlling for unobserved time-invariant individual heterogeneity [32]. Through this approach, a quantitative method was used to analyze the data. The quantitative method enabled us to establish whether or not international students encountered financial stress regarding their studentship by analyzing the numerical data to accept or reject the hypothesis stated. First, with eight universities from each country, the survey was conducted in 16 universities across the United States and China, and 4000 respondents completed the questionnaires during the academic period of 2017–2019. The survey was administered online through WeChat (social media software) using student group platforms and snowballing techniques. Additionally, the questionnaires contained 20 items based on a five-point Likert scale, with response options of Strongly Disagree (1), Disagree (2), Not Sure (3), Agree (4), or Strongly Agree (5); and were grouped into four parts based on the experience, thoughts, and feelings regarding anxiety during their study. In addition, the questionnaires were answered by final-year master's students and second-year undergraduate students as the target groups. This option was chosen because these students were more adapted to campus living expenses than first-year students. Afterwards, the study analysed completed surveys from 3953 students (after accounting for missing data) comprising 2091 international students in the USA and 1862 international students in mainland China. As reiterated above, the purpose of the Financial Anxiety Questionnaire (FAQ) was to examine financial distress among international students in higher education and how significant this impact was on academic performance. Systematic sampling was used to collect data due to the fixed academic starting point identified to facilitate participants' selection and involvement. Again, regarding the validity and reliability of the instrument, Cronbach's alpha coefficient was carried out and showed an overall Cronbach's $\alpha = 0.89$; empirically, this was considered high enough for the use of the instrument. Finally, the probit model took into account the dependent and independent variables. The econometric model of the Financial Anxiety Questionnaire (FAQ) can be written as:

$$\gamma_{at} = \beta_1 \, x_{at} + \xi_{at} = \beta_1 \, x_{at} + v_{at} + \mu_a \qquad (1)$$

$$a = 1, 2 \ldots \ldots . \, N; \, t = 1, 2, 3$$

where γ_{at} is a latent variable showing the unobservable satisfaction level of financial anxiety of students "a" at time "t". Additionally, x_{at} is a vector of observable time invariant factors, whilst the time factor shows the pattern in students' feelings or characteristics towards anxiety. In addition, β_1 indicates ξ, an estimated parameter vector and the error term. Moreover, the white noise composition (i.e., $v_{at} + \mu_a$) error term v_{at} is a time- and anxiety-specific error term assumed to be uncorrelated with the explanatory variables.

On the other hand, the financial anxiety of students cannot be observed; instead, a categorical but ordered random variable γ_{at} is estimated as a function of the explanatory variables at academic sampled period Z_j ($j = 1, 2, 3$):

$$\Gamma_{at} \begin{cases} 1 \text{ if } \gamma_{at} \leq Z_1 \\ 2 \text{ if } Z_1 < \gamma_{at} \leq Z_2 \\ 3 \text{ if } Z_2 < \gamma_{at} \end{cases} \tag{2}$$

Therefore, the contingent probability of a given observation can be written as:

$$P_r(\gamma_{at} = j/x_{at}) = P_r(Z_j \leq \beta_1 x_{a_t} + a_t < Z_{j+1}) = P_r(Z_j \leq \gamma_{at} < Z_j+_1) \tag{3}$$

where j is the aggregate average response of respondents, and ranges between the academic period 1 and 3. The probability that financial anxiety will be encountered in the average respondent response of j, given the explanatory variables (x_{at}), corresponds to the distribution region where γ_{at} falls between Z_j and Z_{j+1}. Finally, in this paper, the dependent variable via the FAQ divides the mean response into three scales, coded as: (1) <3.00; (2) 3.00 to <5.50; and (3) ≥7.00, to analyze the marginal effect of the independent variables.

4. Analysis and Discussion of Results

4.1. Summary Demographic Results

The below figures show information about the respondents' genders, age, and education, among others. Figure 2 shows that most of the respondents in both countries were males, with 28% and 26%, respectively, and the minorities were females, with 24% and 22%, respectively.
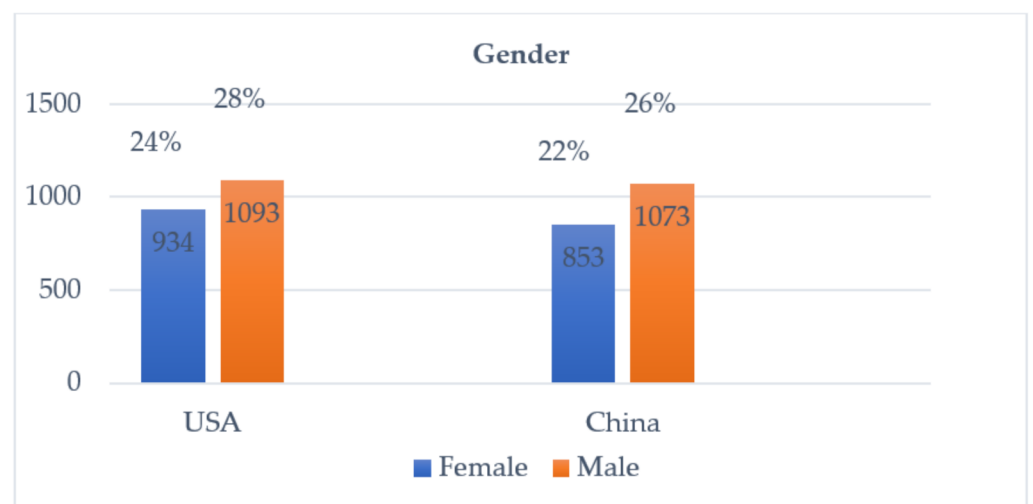

Figure 2. Genders of respondents.

Figure 3 depicts an average score of 3% of the respondents falling in the 30 and above age group; while 23% and 11% were ages 26–30 years and 15–20 years, respectively, across the study countries. A majority of the respondents (64%) fell within 21–25 years, indicating the youthful exuberance of international students in higher education institutions.
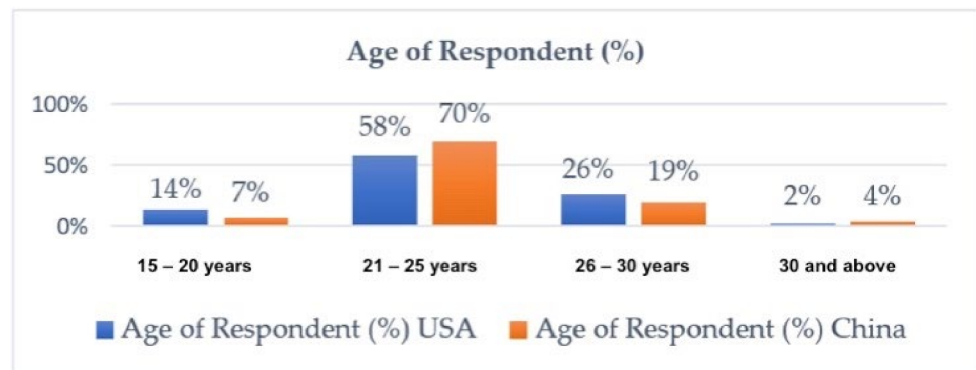
Figure 3. Ages of respondents.

As shown in Figure 4, 19% and 29% of students in the United States, and 22% and 30% of students in China, had master's and bachelor's degrees, respectively.
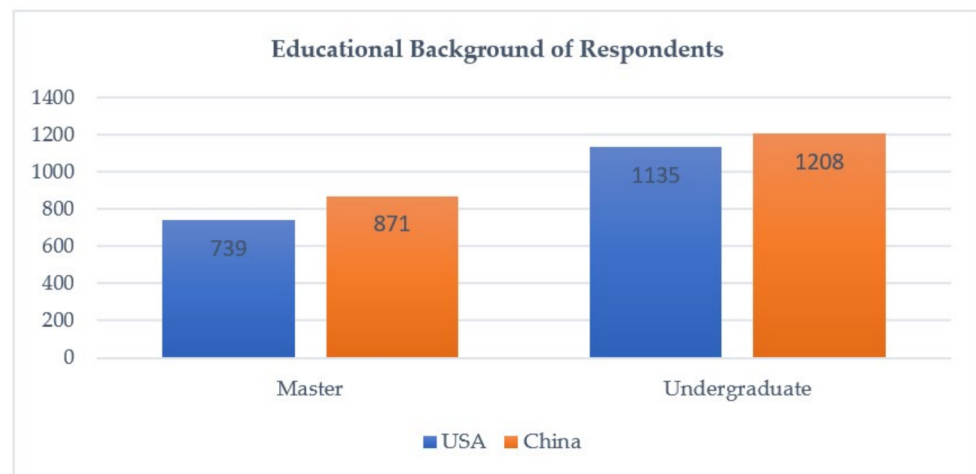
Figure 4. Educational background of respondents.

Figure 5 confirms the near-nonexistence of financial anxiety among international students in the United States, with a 94% score, while 87% of the respondents experienced financial anxiety in mainland China.

Figure 5. Output of financial anxiety respondents.

As seen in Table 1, respondents' aggregate average financial anxiety rate stood at 38.16 and 67.05 (USA and China, respectively). The average scores of approximately 38% and 67% percent showed that the lower the score, the lower the anxiety. Clearly, this indicated

that international students in the USA had lower financial anxiety than those in mainland China. In addition, international students in the United States who could save enough money and had the ability to engage in campus activities stood at a rate of 84% and 89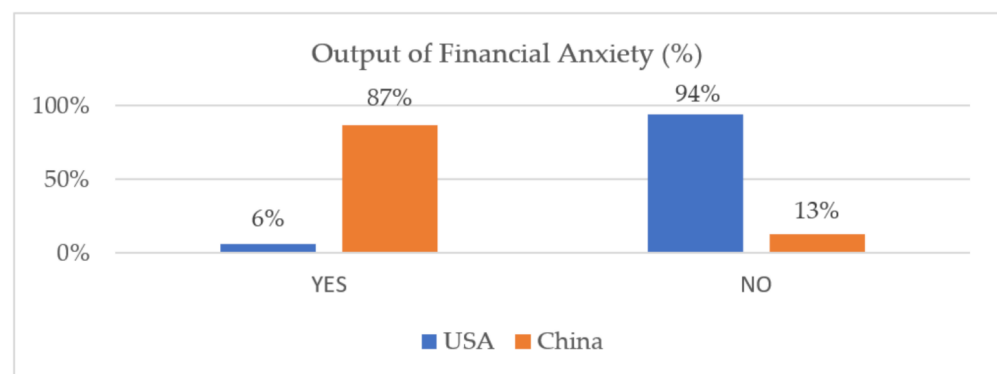%, respectively. In comparison, 39% and 24% of international students in China account for an ability to save money and engage in campus activities, respectively.

Table 1. Descriptive statistics for variables.

Variables	Description	Mean (SD) USA	Mean (SD) China
	Dependent Variable		
Respondents	Aggregate average students' response rate Independent variables		
Financial Stressors			
Campus Activities	Have enough money to engage in campus activities	89.13 (0.17)	39.74 (0.32)
Living expenses	Ability to meet monthly living expenses	70.82 (0.39)	42.03 (0.18)
Savings	Enough to save	84.10 (0.21)	24.95 (0.23)
Scholarship	Scholarship accessibility	15.28 (0.34)	62.32 (0.41)
Burden	Financial burdens on other students for support	23.84 (0.26)	87.93 (0.35)
Travel	Have enough to travel	76.02 (0.41)	81.72 (0.26)
Adaptation level			
Dependence	Have family relatives' dependent on you	46.73 (0.32)	68.25 (0.34)
Performance	Academic performance on lessons	71.04 (0.37)	62.73 (0.23)
Motivation	Experience of desire to want or escape something	82.11 (0.10)	56.28 (0.27)
Management	Ability to control frustration and manage fin. Stress	90.12 (0.39)	47.82 (0.42)
Communication	Ability to communicate on new perspectives on campus	92.83 (0.14)	54.70 (0.11)
Learning	Obtain knowledge and skills needed to succeed	79.52 (0.22)	75.83 (0.35)
Failure	Rate of failure in a course(s)	13.03 (0.38)	66.03 (0.24)
Self-concept			
Investment	Home investment from studentship package	93.07 (0.28)	52.02 (0.27)
Internship	Conducive working environment (part-time)	92.32 (0.33)	23.91 (0.11)
Resistance	Resist financial difficulties after graduation	81.20 (0.15)	48.02 (0.29)
Mind-set	Positive mind-set after graduation	88.03 (0.39)	67.49 (0.38)
Reference	Recommend HEI to others (friends and family)	92.38 (0.21)	59.84 (0.19)
Finance	Demonstrate basic finance management knowledge	79.02 (0.32)	66.03 (0.24)
Output			
Attitude	Financially stressed during studentship	26.07 (0.10)	73.25 (0.29)

Again, international students in both countries had the privilege to access a full scholarship package, where 15% of the participants in the United States applied for such financial support, while 62% of the participants in China applied for A Chinese government scholarship to further their education. This showed that many international students in China had no other source of income to support their education aside from the Chinese government scholarships. Furthermore, 71% and 62% of students had high academic performance in the United States and China, respectively. Likewise, the conducive internship (working) environment of international students stood at a rate of 92% and 23% in the United States and China, respectively. International students had rates of 90% and 47% in the ability to control frustration and manage financial stress in the United States and China, respectively. Lastly, 92% of international students in the United States recommended their universities to others (friends and family members), while in China, 59% of international students would recommend their universities to others.

The independent variables given in Table 2 were quantified using SPSS. Each variable was coded numerically and then input into the software, and then the regression output was generated.

Table 2. Random-effect ordered probit (with Mundlak correction).

Independent Variables	Coefficient (*p*-Value) USA	Coefficient (*p*-Value) China
Have enough money to engage in campus activities	−0.83 *** (0.00)	−0.51 *** (0.00)
Ability to meet monthly living expenses	−0.62 ** (0.02)	−0.34 *** (0.00)
Enough to save	−0.75 *** (0.00)	−0.57 ** (0.04)
Scholarship accessibility	−0.54 ** (0.05)	−0.48 ** (0.02)
Financial burdens on other students for support	−0.61 * (0.07)	−0.39 ** (0.06)
Have enough to travel	−0.68 * (0.09)	−0.54 (0.29)
Have family relatives' dependent on you	−0.85 *** (0.00)	−0.25 ** (0.04)
Academic performance on lessons	−0.91 *** (0.01)	−0.76 *** (0.00)
Experience of desire to want or escape something	−0.56 (0.20)	−0.31 (0.27)
Ability to control frustration and manage financial Stress	−0.82 * (0.07)	−0.59 * (0.08)
Ability to communicate on new perspectives on campus	−0.76 * (0.10)	−0.64 (0.11)
Obtain knowledge and skills needed to succeed	−0.82 * (0.09)	−0.78 ** (0.03)
Rate of failure in a course(s)	0.63 ** (0.05)	0.26 ** (0.02)
Home investment from studentship package	−0.57 *** (0.02)	−0.48 ** (0.06)
Conducive working environment (part-time)	−0.82 ** (0.03)	−0.53 ** (0.08)
Resist financial difficulties after graduation	−0.61 ** (0.04)	−0.52 ** (0.06)
Positive mind-set after graduation	−0.79 * (0.06)	−0.73 ** (0.02)
Recommend HEI to others (friends and family)	−0.92 * (0.09)	−0.58 ** (0.05)
Demonstrate basic finance management knowledge	−0.58 (0.18)	−0.46 (0.29)
Financially stressed during studentship	0.06 *** (0.00)	87.25 *** (0.00)
N	2027	1926
Chi-square (20)	73.49 *** (0.00)	54.26 *** (0.00)

***, **, and * denote significance at 1%, 5% and 10% respectively.

Statistically, the coefficient of campus activities of international students had percentages of 83 and 51. This meant that for every 1% increase in international students' ability to engage in campus activities, there was a decrease in financial anxiety by 83% (USA) and 51% (China). Likewise, every 1% increase in international students' ability to save led to a 62% and 34% decrease in the financial anxiety of students in the United States and mainland China, respectively. In academic performance, overseas students pursuing higher education programs in the United States stood at 91%, whilst those in China scored 76%, meaning that for every 1% increase in high academic performance, financial anxiety decreased by 91% amongst students in the United States and 76% amongst students in China. Significantly, the extent of financial anxiety that international students experienced during internship exercises in the United States and China was 82% and 53%, respectively. Clearly, this showed that the United States has a better/more conducive working environment than China, because overseas students enjoy such working privileges attached to their studentship than those in China. Generally, international students in the United States recorded a lower rate of a 6% mark of financial anxiety in higher education, and this was a result of other factors such as internship opportunities, working environment, academic performance, saving rate, motivation towards studies, and others mentioned above (Table 2). The reverse was true for international students in higher education, for which a higher mark of 87% experienced financial anxiety during their education, as illustrated in Table 2. Likewise, the results in Table 3 expanded the understanding of the anxiety of college students' financial-help-seeking behaviour by combining financial resources, financial attitudes, and mental health status. Again, the data in Table 3 revealed that the magnitude of the positive or negative relationship between the dependent and independent variables did not differ from reality. Significantly, overseas students in China more strongly felt financial anxiety than those in the United States, who experienced lower anxiety as they pursued their educations.

Table 3. Robust check output table on marginal effects.

Independent Variables	Marginal Effect for Average Score (*p*-Value)					
	USA			China		
	<3.00	3−<5.50	≥7.00	<3.00	3−<5.50	≥7.00
Campus Activities	−0.065 ** (0.36)	−0.95 ** (0.07)	−0.033 * (0.21)	−0.042 ** (0.19)	−0.083 * (0.39)	−0.057 * (0.23)
Living expenses	−0.059 * (0.41)	−0.046 ** (0.20)	−0.091 * (0.10)	−0.025 * (0.08)	−0.034 (0.21)	−0.048 ** (0.54)
Savings	−0.074 ** (0.20)	−0.059 (0.32)	−0.035 (0.29)	−0.064 ** (0.32)	−0.023 * (0.39)	−0.034 (0.09)
Scholarship	−0.023 ** (0.22)	−0.085 (0.32)	−0.012 * (0.16)	−0.038 * (0.03)	−0.004 (0.26)	−0.058 ** (0.45)
Burden	−0.045 ** (0.13)	−0.093 * (0.22)	−0.036 (0.14)	−0.047 ** (0.42)	−0.085 (0.19)	−0.049 * (0.26)
Travel	−0.064 * (0.32)	−0.075 *** (0.13)	−0.049 * (0.10)	−0.038 ** (0.23)	−0.047 * (0.27)	−0.039 ** (0.12)
Dependence	−0.052 (0.14)	−0.056 (0.47)	−0.059 (0.19)	−0.044 (0.12)	−0.033 (0.09)	−0.056 (0.45)
Performance	−0.049 ** (0.29)	−0.007 ** (0.32)	−0.064 * (0.29)	−0.059 (0.38)	−0.009 ** (0.47)	−0.029 * (0.37)
Motivation	−0.084 * (0.27)	−0.018 (0.39)	−0.054 (0.46)	−0.045 ** (0.13)	−0.05 ** 4 (0.49)	−0.054 (0.17)
Management	−0.047 ** (0.17)	−0.026 (0.21)	−0.043 ** (0.27)	−0.023 (0.23)	−0.023 (0.32)	−0.062 ** (0.23)
Communication	−0.094 (0.09)	−0.035 (0.23)	−0.033 ** (0.23)	−0.034 * (0.07)	−0.043 * (0.43)	−0.034 (0.09)
Learning	−0.063 * (0.32)	−0.094 (0.15)	−0.084 (0.28)	−0.057 ** (0.18)	−0.035 ** (0.19)	−0.045 ** (0.13)
Failure	0.037 ** (0.14)	0.074 * (0.21)	0.035 ** (0.42)	0.032 * (0.23)	0.035 (0.28)	0.057 ** (0.35)
Investment	−0.086 ** (0.15)	−0.067 (0.09)	−0.041 (0.03)	−0.048 (0.38)	−0.048 ** (0.39)	−0.039 (0.29)
Internship	−0.082 (0.25)	−0.042 * (0.28)	−0.083 ** (0.10)	−0.075 (0.08)	−0.029 (0.12)	−0.042 (0.04)
Resistance	−0.073 * (0.18)	−0.072 * (0.32)	−0.022 * (0.18)	−0.002 (0.53)	−0.003 ** (0.48)	−0.009 * (0.34)
Mind-set	−0.093 * (0.37)	−0.043 (0.13)	−0.012 (0.05)	−0.012 * (0.48)	−0.015 (0.07)	−0.045 (0.27)
Reference	−0.083 (0.15)	−0.037 (0.34)	−0.026 * (0.41)	−0.062 (0.37)	−0.064 ** (0.14)	−0.043 * (0.47)
Finance	−0.071 ** (0.43)	−0.074 (0.25)	−0.010 (0.39)	−0.056 * (0.42)	−0.045 * (0.43)	−0.062 ** (0.28)
Attitude	0.019 *** (0.12)	0.065 ** (0.12)	0.027 *** (0.13)	0.036 ** (0.15)	0.074 ** (0.32)	0.073 ** (0.27)

***, **, and * denote significance at 1%, 5% and 10% respectively.

Additional tables with statistical variables can be seen in the Appendix A.

4.2. Other Factors Contributing to Anxiety in Higher Education

Based on the participants' responses, other stress-causing factors aside from financial anxiety that students encountered are shown in Figure 6 below.
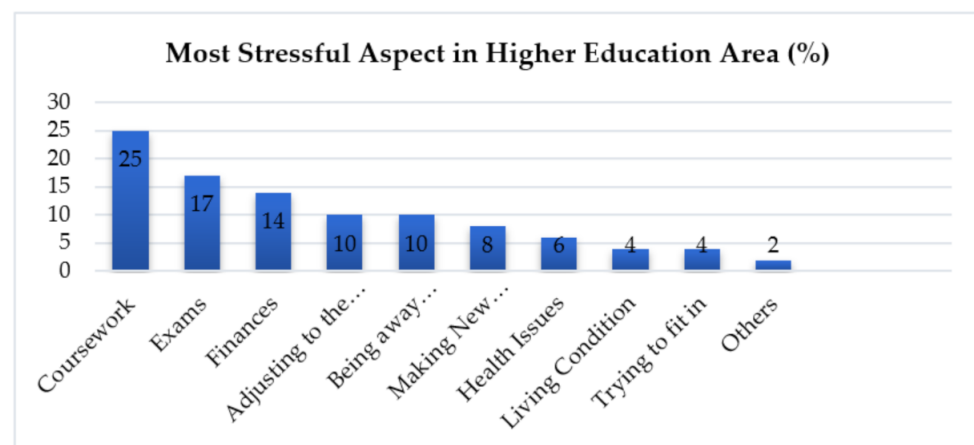

Figure 6. Most stressful aspect in higher education.

The overall survey outcome found that 25% of international students felt that coursework was the most stressful aspect of college life, while 17% believed that examinations contributed to stressful factors. In addition, 14% identified financial constraints as the most stressful in higher education, and 10% of stress-causing factors were attributed to course adjusting and being away from family. Lastly, fewer respondents identified making new

friends (8%), health issues (6%), living conditions (4%), trying to fit in (4%), and others (2%) as being stressful.

5. Conclusions

Globally, governments continue to play a significant role in their educational systems, and this effort contributes tremendously to the enhancement of the better living standards of the citizenry. Significantly, this study highlighted the critical role stakeholders play in developing quality higher education by mitigating financial anxiety amongst international students. For this reason, financial anxiety and stress were ranked as the top three significant concerns observed in higher education, as well as an obstacle to the goal of governments in creating financially self-sufficient citizens [22]. In line with the above data analysis, we concluded that government policy plays a beneficial role in students' academic lives and, as a result, financial anxiety among international students in higher education institutions in the United States and mainland China.

Pursuant to the conceptual framework utilised in this study, the empirical interpretation and response to information formed a major component of this study. We hypothesised four main pathways to examine research outcomes to draw conclusions from our framework. Significantly, it was determined that financial anxiety in higher education among foreign students in the United States had lower effect, at a rate of 6%, whilst international students in China recorded a higher rate of 87% with financial anxiety in their academic pursuits. This phenomenon was attributed to the fact that international students in the United States are permitted to take up part-time jobs during their studies, while working in China as an international student is prohibited and punishable by law. Therefore, international students studying in China are more likely to experience financial constraints and encounter financial anxiety than international students in the United States. Specifically, financial stressors (such as financial situations of international students) and their demographic adaptation (location) significantly contributed to academic satisfaction. In addition, self-concept was identified to influence students' perception and behaviour to a large extent, and played a vital role in the validity of this study. As previously mentioned, self-concept in the context of a positive mindset, conducive working environment, and management of knowledge towards higher education, as well as the empirical research outcomes from international students, showed that there was a negative relationship with financial anxiety in students' attitudinal level, and as a result, eliminated financial stress among international students (no financial stress) in the United State and vice versa in the case of mainland China. In general, this finding supported the conceptual framework highlighted above, and also showed that the Chinese government, as a national regulator, needs to take a second look at the educational parameters to help eliminate or mitigate financial anxiety, especially among international students, and ultimately help increase their financial well-being by benefiting from such academic packages.

In a nutshell, the results quite clearly showed that international students frequently engaged in a variety of campus activities, demonstrating the magnitude of "stress-free" impact on students. The above four null hypotheses indicated that overseas students in the United States recorded a lower rate of 6% with financial anxiety in higher education, therefore rejecting the null hypotheses. In contrast, international students in mainland China supported the statements (null hypotheses) that students would be more likely to experience financial anxiety, where a higher percentage of 87% of them experienced financial anxiety during the period of their education, as illustrated in Table 2.

6. Recommendations

A foreign-based educational system offers students the privilege to acquire needed skills through a college education, and provides incentives for academic progress, thereby increasing the participation of students from developing countries, which is undoubtedly one of the most important aspects of countries' economic prospects. Currently, higher education comes with high costs/expenses for students during their academic pursuits.

Below are some measures to help address and strengthen international student issues raised above in higher education institutions.

First, we recommend the assessment of financial stability as a criterion for evaluating the financial condition of the institution when conducting accreditation procedures and quality assessments. Second, financial counselling teams should be established in all higher education institutions, which will help students financially on a timely basis when they encounter financial crises. Moreover, an electronic (online) request platform should be put in place to address students' urgent financial needs. Furthermore, higher education institutions should cultivate the habit of organizing a periodic "Student Relationship Forum" to help build a strong bond between authorities and students to address concerns and challenges that arise amongst the students during their academic periods. Lastly, we recommend the introduction of a curriculum that teaches effective stress and financial management in all spheres of the academic syllabus. This will help decrease or eliminate chronic stress, avoid unhealthy changes in blood pressure, and help all students live a more enjoyable and stress-free life during and after school.

7. Limitations

These policy recommendations are fundamental to higher education and fall in line with most innovative changes made by developed countries. Therefore, we recommend that future researchers investigate other stress-causing phenomena such as cultural disparities/shock and related phenomena, which affect international students' academic performance at higher education institutions.

Appendix A

Table A1. ANOVA test (USA).

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	56.241	20	2.812	13.202	0.000a
	Residual	427.05	2007	0.213		
	Total	483.291	2027			

Table A2. ANOVA test (China).

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	31.438	20	1.572	8.406	0.000a
	Residual	356.12	1906	0.187		
	Total	387.56	1926			

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