

International Students' Perception of A Post-92 University Registration Process

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Abstract

This study analyses variances among four demographic characteristics – age, gender, continent, and program of study on international students' perception of a Post-1992 UK university's registration process. Analysis was done with respect to six structured survey questions (dependent variables), which serve as dimensions for measuring students' perception. Theoretical assumptions were equally drawn from total quality management and lean synchronization as suggested improvement techniques for achieving quality service objectives of higher education institutions. Primary data was randomly collected through a well-structured questionnaire, after authenticating its validity. The data was obtained from one hundred and nine international students, while a two-way factor analysis of variance was used in testing six main hypotheses formulated with respect to the students' age, gender, continent, and program of study. Results show that no variances exist among students' perception of the registration process with respect to their age, gender, and program of study. However, their perception varies with respect to their continents. Implication of the study to higher education management were also discussed. Even though the sample is not representative of the entire international students' population of study, the study reveals aspects of universities' service operations that requires on-going improvement.

Keywords: registration process, perception, higher education, lean synchronization, international students

1. Introduction

1.1 Statement of the Problem

Service firms make significant contributions to the economy of most nations (Casey et al., 2009; Chase & Apte, 2007; Janer et al., 2015; Kanji et al., 1999), thus strategically positioning them as crucial research area among management scholars. But to excel within the industry, service providers ought to address service quality better than competitors (Heizer et al., 2017). This can be done externally or internally. Mainstream research (Juran et al., 1974; Juran & De Feo, 2010; Ziegel, 1990) have always emphasized measuring external service performance with respect to customers' perceived level of satisfaction. While internal service quality measurements tend to focus on firms' internal service processes. Higher education institutions, as open systems, face both external pressure from competitors as well as internal challenges regarding students' satisfaction. Despite on-going research efforts attempting to offer legitimate pathways for improving service quality in higher education, determining the right improvement methods is still a long way ahead. This is because existing studies (Timiyo, 2016, 2017; Timiyo & Sriram, 2021) have often focused on the role leadership play towards achieving the quality objective of the institutions. Hence the studies fail to take into cognizance viewpoints of relevant stakeholders in higher education institutions.

The different stakeholders of higher education institutions include parents, students, faculty members and administrative personnel, each differ in their interpretations of what quality service ought to look like in higher education. Parents often define service quality of higher education institutions based on the ranking (often referred to inputs) of each school on some national survey reports as well as graduates' employment prospect (referred to as outputs). Students on the other hand view quality based on course delivery methods and categories of programs being offered (Chua, 2004). From a business perspective, faculty members and employers view quality with respect to the totality of services provided by education institutions including recruiting qualified candidates and giving them the right tasks and responsibilities to perform within the institution. However, even as major benefactors, there is tendency to undermine students' evaluation of higher education service quality

hence, this has often been ignored even by education service providers. Addressing students' concerns and dissatisfaction should be of paramount interest, not just to education service providers (Douglas et al., 2006; Fryer et al., 2007), but the government of any nation as well.

1.2 Significance of the Problem

On the part of government, the UK government formerly established the Higher Education Funding Council for England (HEFCE) mainly to address students' concern throughout the country. Even though the agency is dissolved, it played a key role in shaping the dialogue pertaining to higher education service quality, particularly from students' perspectives. Through its National Student Survey (NSS), the HEFCE periodically monitor and measure students' opinions of UK education system. The body offers a forum where all duly registered honours students voice their opinions and suggest ways, they think UK HEIs can be improved for superior performance. Findings from such surveys formed the basis for allocating government funding resources among education institutions in United Kingdom. Even after successfully recruiting students, higher education institutions must keep students satisfied. One way of achieving this objective is through the provision of good quality services based on available resources (Roffe, 1998). Efficient customer service management is crucial to success in the service industry (Karimi et al., 2001). Despite access to modern technologies, placing them ahead of other service firms (Noraziah et al., 2011), higher education institutions still struggle to provide quality services. At least, particularly, to international students.

1.3 Aim and Objectives of the Research

One area that have often pose a challenge to international students is universities' registration process, especially online New Students' Registration Process (NSRP). The process has further been heightened by the current global health crisis called the coronavirus pandemic, which affected all aspects of education activities. Thus, forcing schools to transition to online platforms. This research examines the impact of four demographic factors namely age, gender, continent, and program of study, on a post-1992 university's registration process. With the intent of determining whether these factors play any influential role in shaping the views of international students concerning the registration process of the school. Hence the fundamental question the study seeks to address is what impact does students' demographic factors has on how they view universities' registration Process? Apart from addressing six hypotheses formulating with respect to each demographic factor, the research also identified and suggested possible ways of addressing some of challenges students face during new students' registration process.

2. Literature Review

The second section of this paper reviews relevant literature on new students' registration process, service quality, and improvement techniques capable of enhancing the service quality of education institutions.

2.1 New Students' Registration Process

The role of New Students' Registration Process (NSRP) is to ensure that every student is fully registered into their choice of education institution of learning, having met all relevant academic and financial requirements, and ready to resume classes (Johnson, 2005). Improving the NSRP can ultimately lead to improving the overall students' experiences of education services. One way of doing this is by applying Continuous Improvement Techniques (CIT) to simplify the registration process (Tari, 2008). This involves, sometimes, adopting quantitative techniques to effectively measure the quality of services in these institutions, while at the same time trying to simplify the service process (Terziovski, 2002). Continuous improvement techniques basically involve quantitative tools or models used in checking the functionality of service systems, in order to make necessary adjustments if variations occur within the process (Statit Quality Control, 2007).

Numerous studies (Slack et al., 2010; Slack & Brandon-Jones, 2018) have provided clear distinction between approaches and elements of improvement techniques, two of these will be further explored in this research. The studies categorized business process re-engineering, total quality management, lean synchronization, and six sigma as quality improvement approaches, while techniques such as scatter diagrams, benchmarking, Pareto principle, and Ishikawa diagrams were classified elements of quality improvement. These different, yet, interrelated classifications suggest that quality improvement objectives can be achieved through one or a combination of these elements. Also, their relevance cuts across industry spectrum as the tools have aided managerial decision-making process both within the manufacturing and service sectors (Grigg & Walls, 2007).

Studies (Goomas, 2012) suggest the benefits of adopting CIT towards improving service performance of education institutions are overwhelming. In the sense that, the techniques help to save students' valuable time and yields satisfactory service delivery. Most institutions often adopt improvement techniques like barcodes and

iClickers to overcome unpleasant and hazardous experiences students face during On-line registration by (Meedzan & Fisher, 2009). Research (Brown & Marshall, 2008; Harvey & Eisner, 2011) show that HEIs experienced better students' advisement and satisfied learning outcomes when they inculcated Quality Enhancement Plans (QEP) into their program curriculum or respective courses.

2.2 Improvement Techniques: Lean Synchronization

Lean synchronization is a management technique which originated from the ideas of Total Quality Management (TQM) the philosophy that laid the foundation for achieving maximum results through continuous improvements. It was developed by the Japanese automobile industry Toyota but has entered every facet of the business world. The debate on whether lean differs from TQM is still an ongoing one that is being fostered by various management authors. Even though both concepts are change-oriented, there is contextual difference between them with respect to their specific operationalization (Dahlgaard-Park et al., 2006; Dahlgaard-Park & Pettersen, 2009). Dahlgaard-Park and Pettersen (2009) view lean as an elusive concept devoid of a precise definition, but essentially, it refers to the process of controlling organizations' resources based on customers' needs while at the same time reducing unwanted activities (like waste) from production processes. The concept is one of the most widely spread ideas among the various quality management concepts proposed by management scientists in the early 90's.

The authors stated that lean differs from total quality management in the *dimensions of quality, viewing organization as a system, employee, and quality of work, analyzing customers' needs, measuring improvement and performance, learning and continuous improvement*. Unlike lean (whose emphasis is waste reduction), the main focus of total quality management is quality (Dahlgaard-Park et al., 2006). With respect to viewing organizations as systems, total quality management views organizations as systems, having different sections and departments integrated to best serve the customer.

2.3 Total Quality Management

Total Quality Management (TQM) incorporates the internal network or units in the organization, lean focuses on the market logistics down to the various channels of distribution. Thus, it pays close attention to the effective management of firms' supply chain and the internal workings of the organization. On the dimension of employees and quality of work, TQM emphasizes organizations show concern for employees, whereas lean maintain a very passive attitude towards employees. Lean tends to undermine the importance of human capital in organizations by focusing more on *jidoka* and *heijunka*. *Jidoka* is the process of „humanizing the interface between operator and machine“ (Slack et al., 2010, p. 247), *Heijunka*, on the other hand, enhances the smooth flow of production. In terms of analyzing customers' needs total quality management pursues quality improvement based on customers' requirements, lean does not promote this ideology. Regarding performance measurement, TQM measures performance to identify problems likely to occur in the production process, lean proponents believe performance measurement is necessary only for planning purposes. On the dimensions of learning and continuous improvement Dahlgaard-Park and Pettersen (2009) argued that, unlike total quality management, lean does not place learning as a vital ingredient for the survival of organizations.

3. Methods

This research adopts a quantitative research approach to obtain survey data by randomly sampling the population of international students of post-92 university located in the city of Liverpool. The students were drawn from different departments of the school using quota sampling technique to arrive at a sample size of one hundred and twenty (120) students. Data was obtained using a structured questionnaire and analysed using tables, averages, and simple percentages. Six hypotheses were formulated and tested using the Statistical Package for the Social Sciences (SPSS), to conduct a Two-Way Analysis of Variance (ANOVA). The 120 students constitute those who duly answered and returned the survey questions posted on social media and the student union webpage, and they come from five different countries across two continents namely Africa and Asia. The students include only newly admitted undergraduate and postgraduate full-time students because they are more prone to the complexities of the registration process than old students.

3.1 Research Design and Instrumentation

A quantitative research approach was employed in this study. A structured and self-designed questionnaire titled "International Students' Perception of the New Students' Registration Process (ISPNSRP)" was used to obtain data for this study. It was divided into two sections namely "section A" and "section B". Section A contains the biodata (personal data) of the students (respondents) which includes questions of facts about them. While section B contains questions of the students' opinions about the issues of this research which were drawn from the

literature review to specifically address the research questions and the hypothesis of this study. Interview schedules will also be used to explain attitudinal variables to respondents for empathy and clarity. It was flexibly designed to include both structured (closed-ended) and the unstructured (or open-ended) questions. Next, the paper addresses the acceptable sample size for the study.

3.2 Determining Adequacy of the Sample Size

To validate the suitability of the sample size, I conducted Factor Analysis (FA), which allowed me to determine whether the sample size was reasonably sufficient for the study. Outcome of the analysis show a test result of 0.756 using Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy (see Table 1.1). The outcome suggests that the sample size is relatively sufficient because according to the Kaiser-Meyer-Olkin Measure of Adequacy, a sample is considered suitable for a study if the resultant KMO value is greater than 0.6 (Pallant, 2011, 2020; Pallant & Manual, 2007). A summary of the KMO analysis as a measure of sampling adequacy is presented below (see Table 1).

Table 1. Factor Analysis

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.756
Bartlett's Test of Sphericity	Approx. Chi-Square	451.076
	Df	15
	Sig.	0.000
Communalities		
	Initial	Extraction
q1	1.000	0.466
q2	1.000	0.190
q3	1.000	0.831
q4	1.000	0.776
q5	1.000	0.685
q6	1.000	0.782
Extraction Method: Principal Component Analysis		

3.3 Test of Reliability

The reliability of the instrument was established by conducting a test re-test method. First, twenty questionnaires were distributed to the sample and retrieved later upon completion. Two weeks later I carefully administered the same questionnaires with the same set of questions to the same group of students. This was done to determine the level of consistency of their responses to the proposed sets of questions. Using; $\text{Reliability} = (\text{test score}) \div (\text{retest})$, a ratio of 0.98 was obtained indicating that the instrument was reliable. According to Kumar (2018) the closer the value of the calculated ratio is to 1, the greater the reliability of the research instrument. Similarly, the farther the value of the ratio is to 1, the less reliable the instrument tend to be. He added that reliability can also be calculated by finding the difference between test scores and the retest scores; thus, $(\text{Test score}) - (\text{retest}) = 0$. He stated that when the difference between test scores and retest scores is zero (0), it means that the instrument is completely (or 100%) reliable and accurate. Likewise, if the difference is one (1), then it means that the instrument is totally (or 100%) unreliable and inaccurate.

3.4 Descriptive Statistics Analysis

Among the 120 questionnaires distributed to the students, only one hundred and nine (109) duly completed copies were retrieved thus, the analysis was based solely on 109 copies. The distributions of the students based on their continents are presented below (see Table 2).

Table 2. Distribution of Students Based on Continent

Continent	Number of countries	Percentage (%)
Asia	3	60%
Africa	2	40%
Total	5	100%

Table 2 shows that 60% of the sample constitutes students from Asian countries while 40% came from Africa, whereas Table 3 below shows the distribution of the students based on their countries of origin.

Table 3. Distribution of students based on country of origin

S/NO	Country	Number of students	Percentage (%)
1.	Bangladesh	9	8%
2.	Ghana	10	9%
3.	India	13	12%
4.	Myanmar	1	1%
5.	Nigeria	76	70%
Total		109	100

Table 3 reveals that out of the one hundred and nine (109) questionnaires that were retrieved, 70% came from students from Nigerian origin, making this the highest response rate. Followed by Ghanaian students whose response rate was 9% out of the total sample of study and Bangladesh students with a response rate of 8%. India represents 12% of the entire sample of study while, the lowest number of 1% came from a student from Myanmar. Next, I looked at the distribution of the sample based on their age range (see Table 4).

Table 4. Students' age distribution

Age distribution	Number of students	Percentage (%)
20 – 29 years	55	50.5
30 – 39 years	37	33.9
40 – 49 years	12	11
50 – 59 years	5	4.6
Total	109	100%

Table 4 reveals that a larger percentage of the students used for the study were between the age of 20-29 years, representing about 50.5% of the working sample size, followed by those whose ages fell within 30-39 years and again; this group represents 33.9% of the sample size. It shows that more than half of the sample was within the ages of 20-29 years. The next section addresses the gender characteristics of the sample of study (see Table 5).

Table 5. Gender Characteristics of the students

Country	Number of students	
	Male	Female
Bangladesh	6	3
Ghana	7	3
India	6	7
Myanmar	1	0
Nigeria	44	32

Table 5 reveals the distribution of male students among the five countries was more in number compared to female students, indicating that 59% of the sample were male students while only 41% were female students. Thus, more than half of the sample for the study represents male students signifying that there are more male international students than females. Finally, I analysed the students' biodata based on their program of study, that is whether studying for an undergraduate, postgraduate (taught), or postgraduate research program. This information is presented in Table 6.

Table 6. Program distribution of the students

Type of Program	Number of students	Percentage (%)
Undergraduate	46	42
Postgraduate (taught)	61	56
Postgraduate (research)	2	2
Total	109	100%

Table 6 shows that 56% of the respondents were postgraduate (taught) students while 42% were offering courses at undergraduate level. Thus, more than half of the study sample was postgraduate students while 2% of the study sample was a postgraduate (research) student. Next, the paper evaluates students' perception of the registration process in general. Excerpts of the questions drawn from the questionnaire are presented in Table 7

below.

3.5 Hypotheses Testing

The six hypotheses for this study were tested with respect to the independent variables namely students' age -A, gender -G, continent -C, and program of study -P, and the independent variables (i.e., the statements describing students' perception) using ANOVA. The dependent variables are further categorized as q1, q2, q3, q4, q5, and q6, where „q“denotes the statements presented in Table 7 respectively. Each statement is analysed separately.

Table 7. Students' perception of the registration process

S/NO	STATEMENTS	SA	A	NA/D	D	SD
1	The registration process was quite flexible, and it was designed to meet the needs of international students	32	67	7	3	-
2	The process was time consuming (I missed some of my classes to complete the registration)	-	-	5	83	21
3	I failed to register during the school's approved and scheduled time for registration	-	-	-	15	94
4	The registration process was just as I imagined it would be	34	57	11	7	-
5	I found the existing facilities (computers and self-service machines) difficult to operate/use	1	8	5	62	33
6	I got assistance from staff as quickly as possible	14	67	8	20	-

Key: SA = strongly agree, A = Agree, NA/D = Neither Agree/Disagree, D = Disagree, SD = strongly Disagree.

q1: *The registration process was quite flexible, and it was designed to meet the needs of international students.* The test result is shown in Table 8.

Table 8. Univariate analysis of variance for the dependent variable q1

Between-Subjects Factors		
		N
Age	20-29	55
	30-39	37
	40-49	12
	50-59	5
Gender	female	45
	Male	64
Continent	Asia	18
	Africa	91
Programme	Undergraduates	46
	Postgraduates	63

Table 9. Levene's Test of Equality of Error Variances^a

Dependent Variable: q1			
F	df1	df2	Sig.
47.472	6	102	.000

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

Table 10. Test of Between-Subjects Effects

Dependent Variable: q1						
Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	14.724 ^a	6	2.454	7.593	.000	.309
Intercept	1234.794	1	1234.794	3820.770	.000	.974
Age	.000	3	.000	.000	1.000	.000
Gender	.000	1	.000	.000	1.000	.000
Continent	10.188	1	10.188	31.524	.000	.236
Programme	.009	1	.009	.027	.870	.000
Age * Gender	.000	0	.	.	.	.000
Age * Continent	.000	0	.	.	.	.000
Age * Programme	.000	0	.	.	.	.000
Gender * Continent	.000	0	.	.	.	.000
Gender * Programme	.000	0	.	.	.	.000
Continent * Programme	.000	0	.	.	.	.000
Age * Gender * Continent	.000	0	.	.	.	.000
Age * Gender * Programme	.000	0	.	.	.	.000
Age * Continent * Programme	.000	0	.	.	.	.000
Gender * Continent * Programme	.000	0	.	.	.	.000
Age * Gender * Continent * Programme	.000	0	.	.	.	.000
Error	32.964	102	.323			
Total	1947.000	109				
Corrected Total	47.688	108				

a. R Squared = .309 (Adjusted R Squared = .268)

Table 11. Estimated Marginal Means

1. Age				
Dependent Variable: q1				
Age	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
20-29	4.345 ^a	.085	4.176	4.514
30-39	4.000 ^a	.109	3.784	4.216
40-49	4.000 ^a	.164	3.674	4.326
50-59	4.000 ^a	.254	3.496	4.504

a. Based on modified population marginal mean

2. Gender				
Dependent Variable: q1				
Gender	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Female	4.000 ^a	.107	3.788	4.212
Male	4.259 ^a	.080	4.101	4.417

a. Based on modified population marginal mean

3. Continent				
Dependent Variable: q1				
Continent	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Asia	5.000 ^a	.134	4.734	5.266
Africa	4.006 ^a	.072	3.863	4.149

a. Based on modified population marginal mean

4. Programme				
Dependent Variable: q1				
Programme	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Undergraduates	4.518 ^a	.086	4.348	4.688
Postgraduates	4.000 ^a	.084	3.834	4.166

a. Based on modified population marginal mean

q2: The process was time consuming (I missed some of my classes to complete the registration). The analysis of the second statement is presented below in Table 12.

Table 12. Univariate analysis of variance for the dependent variable q2

Between-Subjects Factors		
		N
Age	20-29	55
	30-39	37
	40-49	12
	50-59	5
Gender	Female	45
	Male	64
Continent	Asia	18
	Africa	91
Programme	Undergraduates	46
	Postgraduates	63

Table 13. Levene's Test of Equality of Error Variances^a

Dependent Variable: q2			
F	df1	df2	Sig.
19.043	6	102	.000

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + Age + Gender + Continent + Programme + Age * Gender + Age * Continent + Age * Programme + Gender * Continent + Gender * Programme + Continent * Programme + Age * Gender * Continent + Age * Gender * Programme + Age * Continent * Programme + Gender * Continent * Programme + Age * Gender * Continent * Programme

Table 14. Tests of Between-Subjects Effects

Dependent Variable: q2						
Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	16.612 ^a	6	2.769	40.115	.000	.702
Intercept	205.341	1	205.341	2975.245	.000	.967
Age	7.771	3	2.590	37.534	.000	.525
Gender	.139	1	.139	2.014	.159	.019
Continent	.845	1	.845	12.249	.001	.107
Programme	.000	1	.000	.000	1.000	.000
Age * Gender	.000	0	.	.	.	.000
Age * Continent	.000	0	.	.	.	.000
Age * Programme	.000	0	.	.	.	.000
Gender * Continent	.000	0	.	.	.	.000
Gender * Programme	.000	0	.	.	.	.000
Continent * Programme	.000	0	.	.	.	.000
Age * Gender * Continent	.000	0	.	.	.	.000
Age * Gender * Programme	.000	0	.	.	.	.000
Age * Continent * Programme	.000	0	.	.	.	.000
Gender * Continent * Programme	.000	0	.	.	.	.000
Age * Gender * Continent * Programme	.000	0	.	.	.	.000
Error	7.040	102	.069			
Total	398.000	109				
Corrected Total	23.651	108				

a. R Squared = .702 (Adjusted R Squared = .685)

Table 15. Estimated Marginal Means

1. Age				
Dependent Variable: q2				
Age	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
20-29	2.093 ^a	.039	2.014	2.171
30-39	1.929 ^a	.050	1.829	2.028
40-49	1.000 ^a	.076	.850	1.150
50-59	1.000 ^a	.117	.767	1.233
a. Based on modified population marginal mean.				
2. Gender				
Dependent Variable: q2				
Gender	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Female	1.286 ^a	.049	1.188	1.384
Male	2.069 ^a	.037	1.997	2.142
a. Based on modified population marginal mean.				
3. Continent				
Dependent Variable: q2				
Continent	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Asia	2.278 ^a	.062	2.155	2.401
Africa	1.643 ^a	.033	1.577	1.709
a. Based on modified population marginal mean.				
4. Programme				
Dependent Variable: q2				
Programme	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Undergraduates	2.139 ^a	.040	2.060	2.218
Postgraduates	1.571 ^a	.039	1.495	1.648
a. Based on modified population marginal mean.				

q3: I failed to register during the school's approved and scheduled time for registration.

Table 16. Univariate Analysis of Variance for the dependent variable q3

Between-Subjects Factors		
		N
Age	20-29	55
	30-39	37
	40-49	12
	50-59	5
Continent	Asia	18
	Africa	91
Gender	Female	45
	Male	64
Programme	Undergraduates	46
	Postgraduates	63

Table 17. Levene's Test of Equality of Error Variances^a

Dependent Variable: q3			
F	df1	df2	Sig.
17.741	6	102	.000

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + Age + Continent + Gender + Programme + Age * Continent + Age * Gender + Age * Programme + Continent * Gender + Continent * Programme + Gender * Programme + Age * Continent * Gender + Age * Continent * Programme + Age * Gender * Programme + Continent * Gender * Programme + Age * Continent * Gender * Programme

Table 18. Tests of Between-Subjects Effects

Dependent Variable: q3						
Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	10.436 ^a	6	1.739	70.963	.000	.807
Intercept	99.363	1	99.363	4054.015	.000	.975
Age	.000	3	.000	.000	1.000	.000
Continent	7.609	1	7.609	310.435	.000	.753
Gender	.000	1	.000	.000	1.000	.000
Programme	.000	1	.000	.000	1.000	.000
Age * Continent	.000	0	.	.	.	.000
Age * Gender	.000	0	.	.	.	.000
Age * Programme	.000	0	.	.	.	.000
Continent * Gender	.000	0	.	.	.	.000
Continent * Programme	.000	0	.	.	.	.000
Gender * Programme	.000	0	.	.	.	.000
Age * Continent * Gender	.000	0	.	.	.	.000
Age * Continent * Programme	.000	0	.	.	.	.000
Age * Gender * Programme	.000	0	.	.	.	.000
Continent * Gender * Programme	.000	0	.	.	.	.000
Age * Continent * Gender * Programme	.000	0	.	.	.	.000
Error	2.500	102	.025			
Total	154.000	109				
Corrected Total	12.936	108				

a. R Squared = .807 (Adjusted R Squared = .795)

Table 19. Estimated Marginal Means

1. Age					
Dependent Variable: q3					
Age	Mean	Std. Error	95% Confidence Interval		
			Lower Bound	Upper Bound	
20-29	1.278 ^a	.023	1.231	1.324	
30-39	1.000 ^a	.030	.941	1.059	
40-49	1.000 ^a	.045	.910	1.090	
50-59	1.000 ^a	.070	.861	1.139	
a. Based on modified population marginal mean.					
2. Continent					
Dependent Variable: q3					
Continent	Mean	Std. Error	95% Confidence Interval		
			Lower Bound	Upper Bound	
Asia	1.833 ^a	.037	1.760	1.907	
Africa	1.000 ^a	.020	.961	1.039	
a. Based on modified population marginal mean.					
3. Gender					
Dependent Variable: q3					
Gender	Mean	Std. Error	95% Confidence Interval		
			Lower Bound	Upper Bound	
Female	1.000 ^a	.029	.942	1.058	
Male	1.208 ^a	.022	1.165	1.252	
a. Based on modified population marginal mean.					
4. Programme					
Dependent Variable: q3					
Programme	Mean	Std. Error	95% Confidence Interval		
			Lower Bound	Upper Bound	
Undergraduates	1.417 ^a	.024	1.370	1.464	
Postgraduates	1.000 ^a	.023	.954	1.046	
Based on modified population marginal mean.					

Q4: *The registration process was just as I imagined it would be.* Result of the analysis of this statement is presented in Table 20.

Table 20. Univariate Analysis of Variance for the dependent variable Q4

Between-Subjects Factors		
		N
Age	20-29	55
	30-39	37
	40-49	12
	50-59	5
Gender	Female	45
	Male	64
Continent	Asia	18
	Africa	91
Programme	Undergraduates	46
	Postgraduates	63

Table 21. Levene's Test of Equality of Error Variances^a

Dependent Variable: q4			
F	df1	df2	Sig.
172.484	6	102	.000

Tests the null hypothesis that the error variance of the dependent variable is equal across groups

a. Design: Intercept + Age + Gender + Continent + Programme + Age * Gender + Age * Continent + Age * Programme + Gender * Continent + Gender * Programme + Continent * Programme + Age * Gender * Continent + Age * Gender * Programme + Age * Continent * Programme + Gender * Continent * Programme + Age * Gender * Continent * Programme

Table 22. Tests of Between-Subjects Effects

Dependent Variable: q4						
Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	65.979 ^a	6	10.997	178.669	.000	.913
Intercept	1000.291	1	1000.291	16252.518	.000	.994
Age	2.000	3	.667	10.832	.000	.242
Gender	.000	1	.000	.000	1.000	.000
Continent	62.527	1	62.527	1015.918	.000	.909
Programme	.757	1	.757	12.296	.001	.108
Age * Gender	.000	0	.	.	.	.000
Age * Continent	.000	0	.	.	.	.000
Age * Programme	.000	0	.	.	.	.000
Gender * Continent	.000	0	.	.	.	.000
Gender * Programme	.000	0	.	.	.	.000
Continent * Programme	.000	0	.	.	.	.000
Age * Gender * Continent	.000	0	.	.	.	.000
Age * Gender * Programme	.000	0	.	.	.	.000
Age * Continent * Programme	.000	0	.	.	.	.000
Gender * Continent * Programme	.000	0	.	.	.	.000
Age * Gender * Continent * Programme	.000	0	.	.	.	.000
Error	6.278	102	.062			
Total	1889.000	109				
Corrected Total	72.257	108				

a. R Squared = .913 (Adjusted R Squared = .908)

Table 23. Estimated Marginal Means

1. Age				
Dependent Variable: q4				
Age	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
20-29	4.093 ^a	.037	4.019	4.166
30-39	4.000 ^a	.048	3.906	4.094
40-49	4.000 ^a	.072	3.858	4.142
50-59	4.000 ^a	.111	3.780	4.220
a. Based on modified population marginal mean.				
2. Gender				
Dependent Variable: q4				
Gender	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Female	4.000 ^a	.047	3.907	4.093
Male	4.069 ^a	.035	4.001	4.138
a. Based on modified population marginal mean.				
3. Continent				
Dependent Variable: q4				
Continent	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Asia	2.611 ^a	.058	2.495	2.727
Africa	4.278 ^a	.031	4.215	4.340
a. Based on modified population marginal mean.				
4. Programme				
Dependent Variable: q4				
Programme	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Undergraduates	3.806 ^a	.037	3.731	3.880
Postgraduates	4.133 ^a	.037	4.061	4.206
a. Based on modified population marginal mean.				

q5: I found the existing facilities (computers and self-service machines) difficult to operate/use.

Outcome of the analysis of this statement is presented in Table 24.

Table 24. Univariate Analysis of Variance for the dependent variable Q5

Between-Subjects Factors		
		N
Age	20-29	55
	30-39	37
	40-49	12
	50-59	5
Gender	Female	45
	Male	64
Continent	Asia	18
	Africa	91
Programme	Undergraduates	46
	Postgraduates	63

Table 25. Levene's Test of Equality of Error Variances^a

Dependent Variable: q5			
F	df1	df2	Sig.
24.329	6	102	.000

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + Age + Gender + Continent + Programme + Age * Gender + Age * Continent + Age * Programme + Gender * Continent + Gender * Programme + Continent * Programme + Age * Gender * Continent + Age * Gender * Programme + Age * Continent * Programme + Gender * Continent * Programme + Age * Gender * Continent * Programme

Table 26. Tests of Between-Subjects Effects

Dependent Variable: q5						
Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	49.590 ^a	6	8.265	29.408	.000	.634
Intercept	313.803	1	313.803	1116.556	.000	.916
Age	.056	3	.019	.066	.978	.002
Gender	.000	1	.000	.000	1.000	.000
Continent	48.831	1	48.831	173.747	.000	.630
Programme	5.381	1	5.381	19.148	.000	.158
Age * Gender	.000	0	.	.	.	.000
Age * Continent	.000	0	.	.	.	.000
Age * Programme	.000	0	.	.	.	.000
Gender * Continent	.000	0	.	.	.	.000
Gender * Programme	.000	0	.	.	.	.000
Continent * Programme	.000	0	.	.	.	.000
Age * Gender * Continent	.000	0	.	.	.	.000
Age * Gender * Programme	.000	0	.	.	.	.000
Age * Continent * Programme	.000	0	.	.	.	.000
Gender * Continent * Programme	.000	0	.	.	.	.000
Age * Gender * Continent * Programme	.000	0	.	.	.	.000
Error	28.667	102	.281			
Total	479.000	109				
Corrected Total	78.257	108				

a. R Squared = .634 (Adjusted R Squared = .612)

Table 27. Estimated Marginal Means

1. Age				
Dependent Variable: q5				
Age	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
20-29	2.000 ^a	.079	1.842	2.158
30-39	2.000 ^a	.102	1.799	2.201
40-49	2.000 ^a	.153	1.696	2.304
50-59	2.000 ^a	.237	1.530	2.470

a. Based on modified population marginal mean.

2. Gender				
Dependent Variable: q5				
Gender	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Female	2.000 ^a	.100	1.802	2.198
Male	2.000 ^a	.074	1.853	2.147

a. Based on modified population marginal mean.

3. Continent				
Dependent Variable: q5				
Continent	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Asia	3.111 ^a	.125	2.863	3.359
Africa	1.815 ^a	.067	1.682	1.948

a. Based on modified population marginal mean.

4. Programme				
Dependent Variable: q5				
Programme	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Undergraduates	2.056 ^a	.080	1.897	2.214
Postgraduates	1.978 ^a	.078	1.823	2.133

a. Based on modified population marginal mean.

q6: I got assistance from staff as quickly as possible.

Table 28. Univariate Analysis of Variance for the dependent variable q6

Between-Subjects Factors		
		N
Age	20-29	55
	30-39	37
	40-49	12
	50-59	5
Gender	Female	45
	Male	64
Continent	Asia	18
	Africa	91
Programme	Undergraduates	46
	Postgraduates	63

Table 29. Levene's Test of Equality of Error Variances^a

Dependent Variable: q6			
F	df1	df2	Sig.
53.505	6	102	.000

Tests the null hypothesis that the error variance of the dependent variable is equal across groups

a. Design: Intercept + Age + Gender + Continent + Programme + Age * Gender + Age * Continent + Age * Programme + Gender * Continent + Gender * Programme + Continent * Programme + Age * Gender * Continent + Age * Gender * Programme + Age * Continent * Programme + Gender * Continent * Programme + Age * Gender * Continent * Programme

Table 30. Tests of Between-Subjects Effects

Dependent Variable: q6						
Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	63.177 ^a	6	10.529	42.236	.000	.713
Intercept	847.811	1	847.811	3400.769	.000	.971
Age	.000	3	.000	.000	1.000	.000
Gender	.000	1	.000	.000	1.000	.000
Continent	50.311	1	50.311	201.808	.000	.664
Programme	.139	1	.139	.558	.457	.005
Age * Gender	.000	0	.	.	.	.000
Age * Continent	.000	0	.	.	.	.000
Age * Programme	.000	0	.	.	.	.000
Gender * Continent	.000	0	.	.	.	.000
Gender * Programme	.000	0	.	.	.	.000
Continent * Programme	.000	0	.	.	.	.000
Age * Gender * Continent	.000	0	.	.	.	.000
Age * Gender * Programme	.000	0	.	.	.	.000
Age * Continent * Programme	.000	0	.	.	.	.000
Gender * Continent * Programme	.000	0	.	.	.	.000
Age * Gender * Continent * Programme	.000	0	.	.	.	.000
Error	25.429	102	.249			
Total	1586.000	109				
Corrected Total	88.606	108				

a. R Squared = .713 (Adjusted R Squared = .696)

Table 31. Estimated Marginal Means

1. Age				
Dependent Variable: q6				
Age	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
20-29	3.381 ^a	.075	3.232	3.529
30-39	4.000 ^a	.096	3.810	4.190
40-49	4.000 ^a	.144	3.714	4.286
50-59	4.000 ^a	.223	3.557	4.443
a. Based on modified population marginal mean.				
2. Gender				
Dependent Variable: q6				
Gender	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Female	4.000 ^a	.094	3.814	4.186
Male	3.536 ^a	.070	3.397	3.674
a. Based on modified population marginal mean.				
3. Continent				
Dependent Variable: q6				
Continent	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Asia	2.000 ^a	.118	1.767	2.233
Africa	4.024 ^a	.063	3.898	4.149
a. Based on modified population marginal mean.				
4. Programme				
Dependent Variable: q6				
Programme	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Undergraduates	3.071 ^a	.075	2.922	3.221
Postgraduates	4.000 ^a	.073	3.854	4.146
a. Based on modified population marginal mean.				

Decision Rule: If the significant p value is less than or equal to 0.05 then there is significant effect among a single dependent variable and the other independent variables. This means that the null hypothesis is refuted if there is a significant difference, and the null hypothesis is supported if there is no significant difference.

4. Discussion of Findings

The ANOVA test results are summarized and presented in Table 3. This was done with respect to the six hypotheses for the study, as expressed with respect to the age, gender, continent of origin, and program of study of each student who took part in the survey. Findings from hypothesis 1 revealed that the null hypotheses (H₀) with respect to age, gender and program of study were supported. This suggests no differences exist among students' perception of the registration process based on the three independent factors of age, gender, and program of study. It means that there is no significant difference between the flexibility of the registration process and the age, gender, and program of study of students. Although, the null hypothesis with respect to continent (which is H₀1c) was refuted (see Table 3) so, the alternative (H₁) was accepted. This means there is a significant difference between Asian and African students' perception on whether the registration process was flexible or not. Results from hypothesis 2 shows that no significant differences exist concerning whether the registration process was time consuming or not based on students' gender and program of study. This means that H₀2G and H₀2P were supported (see Table 3). Whereas H₀2A and H₀2C were refuted indicating that there is a significant difference between students' view on whether the registration process was time consuming or not and their age and continents of origin.

In hypothesis 3 there was no significant difference between the students' age, gender and program with regards to their registering within the stipulated time of registration. This means that H₀3A, H₀3G and H₀3P were supported (see Table 3) while H₀3C was refuted thus, the alternative (H₁) was supported. This means that there is a significant difference with respect to students' continent of origin and whether or not they were able to

register within the specified time for registration. Hypotheses 4 revealed that there were significant differences in students' age, continent and program of study and their general perception of the registration process. This means that H04A, H04C and H04P were refuted (see Table 3) while that of gender (H04G) was supported indicating that there was no significant difference concerning students' gender and their general perception of the registration process.

The results from hypothesis 5 reveals no significant difference among age, gender, and students' ability to effectively use computers and self-serviced machines. This means that H05A and H05G were supported, while H05C and H05P were refuted signifying the fact that there were significant differences with regards to students' ability to use computers and self-serviced machine and their continents and program of study. Thus, H0 was refuted while H1 was rather supported. Hypothesis 6 test results showed that there were no significant differences between students' age, gender, and program of study and whether or not they gained prompt assistance from staff. Hence, H06A, H06G and H06P were supported whereas, H06C was refuted. H06C indicates that there is a significant difference between Asian and African students and whether they got assistance from staff. From the analyses it could be observed that continent seemed to have a re-occurring major interactive effect on how students perceive the registration process in general.

Table 32. ANOVA Test Results

Null hypotheses	ANOVA results	Supported/refuted
H_{01A} : There is no significant difference between older and younger students' perception on whether the registration process was flexible or not.	p = 1.000 F(3) = 0.000	Supported
H_{01G} : There is no significant difference between male and female students' perception on whether the registration process was flexible or not.	F(1) = 0.000 p = 1.000	Supported
H_{01C} : There is no significant difference between Asian and African students' perception on whether the registration process was flexible or not.	F(1) = 31.52 p = 0.000	Refuted
H_{01P} : There is no significant difference between undergraduate and postgraduate students' perception on whether the registration process was flexible or not.	F(1) = 0.027 p = 0.870	Supported
H_{02A} : There is no significant difference between older and younger students' perception of whether the registration process was time consuming or not.	F(3) = 37.534 p = 0.000	Refuted
H_{02G} : There is no significant difference between male and female students' perception of whether the registration process was time consuming or not.	F(1) = 2.014 p = 0.159	Supported
H_{02C} : There is no significant difference between Asian and African students' perception of whether the registration process was time consuming or not.	F(1) = 12.249 p = 0.001	Refuted
H_{02P} : There is no significant difference between undergraduate and postgraduate students' perception of whether the registration process was time consuming or not.	F(1) = 0.000 p = 1.000	Supported
H_{03A} : There is no significant difference between older and younger students' failure to register within the stipulated time of registration.	F(3) = 0.000 p = 1.000	Supported
H_{03G} : There is no significant difference between male and female students' failure to register within the stipulated time of registration.	F(1) = 0.000 p = 1.000	Supported
H_{03C} : There is no significant difference between Asian and African students' failure to register within the stipulated time of registration.	F(1) = 310.435 p = 0.000	Refuted
H_{03P} : There is no significant difference between undergraduate and postgraduate students' failure to register within the stipulated time of registration.	F(1) = 0.000 p = 1.000	Supported
H_{04A} : There is no significant difference between older and younger students' general perception of the registration process.	F(3) = 10.832 p = 0.000	Refuted
H_{04G} : There is no significant difference between male and female students' general perception of the registration process.	F(1) = 0.000 p = 1.000	Supported
H_{04C} : There is no significant difference between Asian and African	F(1) = 1015.918	Refuted

students' general perception of the registration process.	p = 0.000	
H_{04P} : There is no significant difference between undergraduate and postgraduate students' general perception of the registration process.	F(1) = 12.296	Refuted
	p = 0.001	
H_{05A} : There is no significant difference between older and younger students' ability to use computers/self-serviced machines.	F(3) = 0.066	Supported
	p = 0.978	
H_{05G} : There is no significant difference between male and female students' ability to use computers/self-serviced machines.	F(1) = 0.000	Supported
	p = 1.000	
H_{05C} : There is no significant difference between Asian and African students' ability to use computers/self-serviced machines.	F(1)= 173.747	Refuted
	p = 0.000	
H_{05P} : There is no significant difference between undergraduate and postgraduate students' ability to use computers/self-serviced machines.	F(1) = 19.148	Refuted
	p = 0.000	
H_{06A} : There is no significant difference between older and younger students' perception of whether or not they gained assistance from staff promptly.	F(3)= 0.000	Supported
	p = 1.000	
H_{06G} : There is no significant difference between male and female students' perception of whether or not they gained assistance from staff promptly.	F(1) = 0.000	Supported
	p = 1.000	
H_{06C} : There is no significant difference between Asian and African students' perception of whether or not they gained assistance from staff promptly.	F(1)= 201.808	Refuted
	p = 0.000	
H_{06P} : There is no significant difference between undergraduate and postgraduate students' perception of whether or not they gained assistance from staff promptly.	F(1) = 0.558	Supported
	p = 0.457	

Key: A – Age, G – Gender, C – continent, P – program of study

5. Conclusion

An area where universities face tremendous competition and challenges is in providing quality services to students. Research (Kohle Paul & Fitzpatrick, 2015) link students' satisfaction as key to the success of universities. Thus, ongoing evaluation and monitoring of students' satisfaction level lies at the heart of education providers. This study examines a university's registration progress to determine whether the demographic factors of age, gender, continent, and program of study has any effect on students' perception of the registration process. It suggests, from the literature, that continuous improvement techniques can optimize service quality in universities. The benefits of adopting continuous improvement techniques were highlighted, particularly, total quality management and lean synchronization.

Practical implications of the study to higher education institutions is that it reveals areas that needs continuous improvements in education institutions. Also, research on lean synchronization mostly addressed manufacturing firms, this study is among the few that have explored the concept within the context of UK higher education sector. However, there are certain limitations of the study. First, I acknowledge the unrepresentativeness of the sample of study, meaning that the sample is not a true reflection of the entire population of study, which include all universities in UK. Furthermore, international students' population came from well over sixty different countries yet, but only those from Asia and Africa students sampled for this study.

6. Recommendations

This study therefore recommends that HEIs engage the services of temporary staff during registration to ensure that students are attended to quickly thus, minimizing idle time. Furthermore, provisions should be made on schools' websites to provide answers to Frequently Asked Questions (FAQs) that students are bound to ask during registration. A cross-sectional study of NSRP and students in HEIs' in different universities in the UK could provide a better understanding of the challenges faced by international students studying in UK Higher Education Institutions. And a comparative study could also be conducted to compare NSRP in HEIs in UK and other developing countries such as India, Bangladesh, or South Africa. Another possible area of research could be to find out why there seems to be more male international students than females who are studying in UK Higher Education Institutions.

7. Limitations and Key Assumptions

Data for this research was obtained from international students who agreed to take part in the survey. This means the outcome might not be a true reflection of the views of all international students in the school. Furthermore, while only two gender orientations were represented in the study, the research did not deliberately exclude other types of gender orientations. It was left for each student to identify their preferences; hence the analysis is based on the exact representations of the survey data collected from the students. Therefore, it is assumed that only two gender types took part in the study.

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