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## Zone of trade-offs in higher education

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### **Abstract**

The study attempts to address the zone of trade-offs using service quality dimensions among academic staff at the Strathclyde Business School. Overall, 139 full-time academic staff from various departments were invited to participate in the online survey. The findings shows that the empathy dimension scores the highest areas of trade-offs and the lowest was from the tangibility and assurance dimensions. However, the results of the study suggest that it would be more favourable to integrate more service quality dimensions to highlight the trade-offs among academic staff appropriately. Furthermore, the recommendation also suggests that service organizations should monitor a service provider's performance by identifying the zone of trade-offs.

**Keywords:** Zone of trade-offs, service quality, service quality dimensions, higher education, academic staff

### **Introduction**

In early studies, the father of modern economics, Adam Smith (1776) in his article "An Inquiry into the Nature and Causes of the Wealth of Nations", argues that it is impractical for an economy to operate efficiently with simultaneous factors working in isolation; the system needs to sacrifice (trade-offs) the efficiency of one economic activity in order to improve another economy activity. In a dynamic context, he suggests that an

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economy needs to sacrifice one production in order to improve another by introducing absolute advantage in the system. Adam Smith addresses the concept of trade-offs in an economy by using a Production Possibility Frontier (PPF) curve. PPF represents how many units of a resource need to be sacrificed for a given increase in output of the product (Slack et al., 2010).

The concept of trade-offs in a manufacturing operation was formally introduced by Wickham Skinner in the year 1969 (Skinner, 1996). After this, the trade-off concept began to attract much attention from many scholars in the service operations sector. Johnston (1999) has developed a model of study on service transaction to address the need for managers to engineer their service processes by analyzing the basic factor that will generate improvement. Supporting this idea, Owlia and Aspinwall (1996) encouraged service managers to consider inappropriateness and disparity between service and service delivered to the customer (see also Hill, 1995). Overcoming trade-offs has now become the main aim of many service organizations, like higher education, to increase the effectiveness of the service delivery system. As stated above, the current phenomena have challenged higher education institutions to highlight the need of addressing the zone of trade-offs among academicians.

This current development has compelled universities to manage their operations as corporate organizations, competing for resources to sustain excellence in the industry (Sultan & Wong, 2010). These issues have created great pressure among academic staff to balance their teaching, research, consultancy and other administrative duties while maintaining quality from every perspective in the faculty (Gates et al., 2002). The commercial competition and reduction in government funding has forced higher education institutions to seek alternative financial sources while sustaining their position in the industry. Currently, many universities are facing a tremendous challenge of being centres of excellence for teaching as well as research. Furthermore, studies show that academics have also been required to acquire new skills and knowledge in line with current developments in higher learning while being asked to teach large numbers of students in various specializations (Robertson et al., 2002). Meanwhile, they have the responsibility to provide quality teaching at all times (Umashankar & Dutta, 2007; Voss et al., 2007). Billot (2010) believes that academicians face distinct trade-offs which might impact on the quality of service provided to the

students (see also Abdullah, 2006). In another article, Looy et al., (2006) stated that academicians who are involved in entrepreneurial activities such as consultancy, technology development and scientific publication may be liable to jeopardize an activity which may result in a trade-off. Today, many higher education institutions are operating like other service organizations, concerned with productivity, market share, quality services and return on investment (Nadiri et al., 2011).

Besides that, Massy and Zemsky (1994) state that many faculty members loosen their institutional ties and responsibilities by placing greater value on pursuing personal goals leading to greater financial rewards. The researchers also commented that academicians tend to trade off activities such as grading papers, meeting with students, teaching modules and other tasks to pursue their personal goals. Current practice has highlighted the need for addressing the zone of trade-offs among academic staff when delivering a variety of services to stakeholders. Moreover, Slack et al. (2010) stated that producing a variety of services for the stakeholders generally reduces an operation's ability to function effectively. Therefore, limiting the variances on service offer will lead to higher customer satisfaction and increase organizational performance within the industry.

The main objective of this research is to address the zone of trade-offs using service quality dimensions in the higher education sector. Existing research has failed to coordinate the relations between trades-offs and service quality dimensions in the service organization. To achieve this, the study initially explores the body of knowledge using existing literature. Secondly, the study uses relevant literature to generate a number of items for the service quality dimension. From there, the research develops a survey to analyze the trade-offs being practised by academic staff. Finally, the research applies a quantitative method to analyze the data gathered from the online survey distributed to staff. Subsequently, the output contributes to the understanding of the zone of trade-offs in higher education, identifying those areas needing to be improved in the future.

### **Background literature**

Today, the concept of trade-offs is widely used in service marketing to describe an operational compromise made by managers in their daily

production activities. Johnston (1994) referring to Berry and Parasuraman (1991) states trade-offs as a “zone of tolerance” which mediates between customer desired level of service and adequate level of service. This researcher has also added that the tolerances are dynamic and may be adjusted during the process of delivering service quality. Service productivity may compensate for poor performance.

In the last few decades, the importance of the trade-off concept has been noted by a few scholars in line with the current development of service activities and its contribution to economic growth (Johnston, 1994). The concept of trade-offs was formally introduced by Wickham Skinner in 1969 (Skinner, 1996). In the same article, he pointed out that trade-off is able to influence the competitive performance of a business unit if sufficient care is not taken. In his articles, he argued whether the tools, approaches and ideas were adequate and appropriate in overcoming trade-off challenges faced by managers in manufacturing. Before that, Skinner addressed this mismatch in his article “Production under pressure” in the *Harvard Business Review* (1996). As is evident from this literature, many researchers have contributed their ideas in developing manufacturing trade-offs in manufacturing operations since the 1960s. Skinner (1996) identified seven criteria for trade-offs in manufacturing operations: flexibility for volume, flexibility for product change, quality, delivery cycle, cost, investment and reliability of delivering promises in meeting manufacturing operations objectives.

The concept of trade-off has been increasingly seen as a central issue of discussion among operational scholars since the last decade, with a view to identifying zones needing to be improved (Silveira & Slack, 2001). According to Silveira and Slack (2001), the concept of trade-offs was challenged in the 1980s and 1990s when investigating production compromises in manufacturing operations.

Some notable publications in this field include the works of Johnston (1995; 2005); Johnston and Kong (2011); Pagell et al. (2000); Parasuraman (2010); Silveira (2005) and Zeithmal et al. (1988). Ghobadian et al. (1994), when referring to Haywood-Farmer (1988), stated that quality trade-off failed to offer a practical method to help management to identify problems in service quality. This is because of the characteristics of service itself such as service intangibility, participation of the customer in service delivery, the hetero-

geneous nature of the process, lack of predictability and repeatability of the service process, a diverse customer base sharing the same processing facilities and process, lack of transparency, difficulties in identifying source of quality, productivity, the trade-off problems and the time required to improve service operation (Kellogg & Nie, 1995).

Johnston (1999), as an active service operations scholar, developed a model to study service transaction, addressing the need for managers to engineer their service process by analyzing the root causes that lead to improvements. The study also indicated the mismatch between the actual service concept and service delivered to the customer. Johnston asked service firms to see the process from a customer's point of view and increase "customer orientation"(see also Telford & Masson, 2005).

Acknowledging this, Grebennikov and Shah (2012) produced empirical research evidence revealing that higher education institutions still struggle to meet desired expectations from customers. The researchers suggest that academicians should view quality from students' perspectives. Additionally, the research also suggested that the quality of academicians in higher education has a significant impact on service delivery. Subsequently, the findings also revealed that academicians should possess desired attributes when involving themselves in academic activities without losing rigor in the classroom.

As evidenced from existing academic literature from a number of different bodies, several broad conclusions can be drawn. Firstly, there is a need to revisit the concept of trade-offs using service quality dimensions from the perspective of service organizations. Secondly, there has been considerably less research on practical aspects and knowledge development such as identification and improvement of the trade-offs (Silveira, 2005). Keeping this in mind, this research will address the zone of trade-offs using service quality dimensions and will aim to fill the knowledge gap.

## **Methodology**

The scope of study was limited to academic staff from Strathclyde Business School (SBS) using convenience sampling. The total 139 academicians were selected as a sample for this study. The questionnaire was sent to all 139 full-

time academic staff with at least 30 returns required in order to conduct an analysis (Appendix 1). The scope of study is limited to the full-time academic staff in the SBS due to the nature of the duties undertaken by them compared with part-time academic staff involved in specific academic activity. The research used both primary and secondary research methods to answer the research questions and meet the objectives of the study. For primary data, the data was collected using a questionnaire designed for this study. The questionnaire was designed with two sections consisting of demographic and service quality dimensions questions. The questionnaire was designed using the online software Qualtrics and distributed to the SBS academic staff by mailing the URL to their email accounts. For the secondary data, various articles were reviewed in order to address the issues raised around trade-offs and service quality. The total responses comprise 32% of the total sample selected for the study; it is therefore valid and reliable to report the outcome of the undertaken research. According to Sekaran (2000), if the questionnaire achieves 30% of the online responses, this is reliable for a piece of research. Besides that, the average time to answer the survey questions was 42 minutes which is quite high in comparison to the time suggested to the respondents. This might have been due to respondents leaving the website unattended after starting the survey. However, 13 responses were omitted from the analysis since these respondents failed to complete the survey after having started it.

### **Rationale of choosing service quality dimension**

The most widely reported set of service quality dimensions is proposed by Parasuraman and his colleagues. The researchers have initially identified ten dimensions that reflect service attributes used by consumers in evaluating the quality from the service provider (Parasuraman et al. 1985, 1993). However, as a result of later research, the ten dimensions of service qualities were reduced to five dimensions. The five dimensions are tangibles, reliability, responsiveness, assurance and empathy (Ghobadian et al., 1994). Johnston and Kong (2011) stated that service quality in service operational perspectives can be measured using quality dimensions of service quality such as tangibility, reliability, responsiveness, assurance and empathy. Besides that, in the last three decades the service quality dimensions have been widely used in the higher education industry to understand perceived experience by the students. Many researchers concentrated on developing

service quality instruments to measure teaching effectiveness by investigating student satisfaction level in the higher education sector (Li & Kaye, 2006). Furthermore, recent research found that service quality dimensions studies are still dominating the service field (Sultan & Wang, 2010). Thus, the research study uses the service quality dimensions proposed by Parasuraman et al. (1985) to address zone of trade-offs in SBS.

### **Discussion of results**

The data analysis used descriptive statistics to address the zone of trade-offs among respondents at the Strathclyde Business School. The discussion of results starts by providing general information on the questionnaire responses, then subsequently addresses the zone of trade-offs using service quality dimensions.

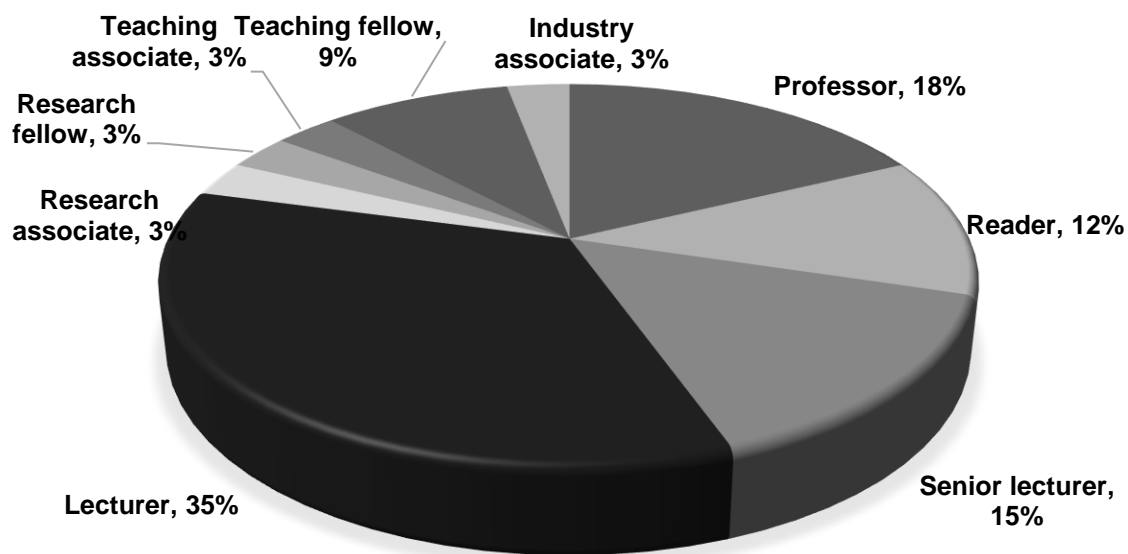
### **Demographic data of respondents**

The highest numbers of responses, seven in total, came from the Department of Management Science. Six responses were each received from the departments of Management and Marketing, and five from both the Marketing and Economics departments. Only four responses were received from the department of Accounting and Finance. Lastly, the lowest response was from the Hunter Centre for Entrepreneurship with only one response. Overall, 34 respondents have participated in this survey with all departments in the SBS represented.

### **Academic position**

Figure 1 shows the academic position of respondents. Half of them were Lecturers or Senior Lecturers, while another 20% were at higher positions (Professor and Reader).

Figure 1: Academic position of SBS respondents



### Gender composition

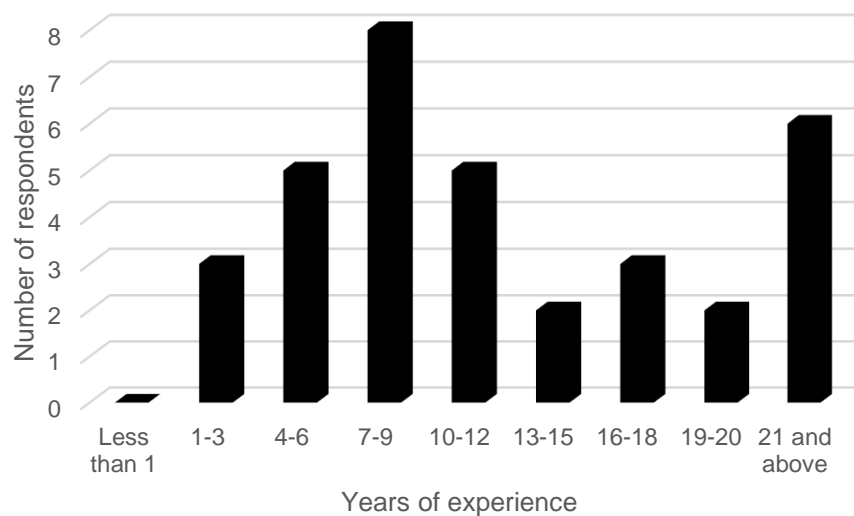
The highest number of male responses came from the departments of Accounting and Finance, Management and Management Science; for females, the highest responses came from the departments of Economics, Human Resource Management and Management Science.

### Years of experience

Figure 2 illustrates the number of years' experience of the academic staff who participated in the survey. While there were no respondents with less than one year's experience, the chart shows that experience varied widely across the respondents.



Figure 2: Respondents' years of experience



### Addressing the zone of trade-offs using service quality dimensions

The service quality dimensions items used a Likert scale 1 to 5 ranging from “strongly disagree” to “strongly agree”. The respondents were able to specify their level of agreement or disagreement on items based on the scale given to them.

### Tangibility

The tangibility dimension items considered factors such as physical facilities, equipment and appearance of personnel; these may be the cause of the trade-offs among academic staff. There are eight items designed in this section to meet the tangibility condition (see the Appendix). Overall, items number 3 and 7 show slightly higher mean compared with other items' mean values (Table 1). Items 3 and 7 scored mean average values of 3.61 and 3.06 respectively. These results indicate the respondents' collective agreement on both items. Item 3 is about maintaining teaching materials on the computer and item 7 is about updating course information on the website. Besides that, item 6, revealing inadequacy of internet connection in the student room, scored the lowest mean average in this dimension. Another four items scored between 1.78 to 1.90, falling into the categories of “strongly disagree” and “disagree”. These results clearly show that the academic staff do not agree with the items discussed in the tangibility dimension. On the other hand, the mean average value for the 34 respondents is 2.26 for all eight items in the tangibility dimension. This mean average value indicates that the

respondents in general do not agree with the items. The range of the items is 3 and the score for maximum value is 4 and for minimum value is 1. Overall, the respondents have given a variety of answers between 1 and 4 for the tangibility dimension. Furthermore, the variations between items are quite small and the results are spread between 0.37 and 1.78 (Table 2). Item 6 in the tangibility dimension scored the lowest variation. This shows that the respondents might have similar opinions on the items tested in the tangibility dimensions.

Table 1: Tangibility: Mean

Item	1	2	3	4	5	6	7	8
Mean	1.85	3.61	1.78	1.89	1.61	3.06	2.39	2.26

Table 2: Tangibility: Standard deviation and variance

Item	1	2	3	4	5	6	7	8
Standard deviation	0.89	0.88	1.09	0.73	0.74	0.61	1.06	1.33
Variance	0.79	0.77	1.19	0.54	0.54	0.37	1.11	1.78

### Reliability

The reliability dimension items considered the ability to perform the promised services, ie keeping records correctly and carrying out services at a given time, factors which might cause trade-offs among academic staff. There are 18 items designed to meet the reliability's condition (see the Appendix). Item numbers 6 and 8 show the highest mean compared with other items in the reliability dimension, scoring 3.22 and 3.99 respectively (Table 3). These values show that the respondents somewhat agree with both items. These items are:

- Item 6: Managing research grants as a principal investigator or co-investigator.
- Item 8: Preparing research grants.

Items 2 and 4 scored the same lowest mean average at 1.56, commenting on the delivery of seminars, trainings and tutorials as well as setting and

marking examinations. This suggests disagreements on the items designed, which score very low mean average values from the 34 respondents. On the other hand, items 6 and 8 scored mean average values of 3.22 and 3.39 respectively, indicating a positive sign of trade-offs being practised by academic staff. However, the mean scores of both items are not strong enough to support the existence of trade-offs among staff. The mean average scored for the 18 items in the reliability dimension is 2.43, slightly higher than for tangibility. The mean average scores clearly show that the respondents generally do not agree with the statements in the reliability dimensions. The range of scores is 3 with a minimum value of 1 and a maximum value of 4. None of the respondents chose "strongly agree" for any items. Item 4 scored the lowest variance compared with the other items and the pattern of the variance shows that the respondents have similar opinions on the items tested in the reliability dimensions (Table 4). The standard deviation results show item scores between 0.51 and 1.09 respectively. The overall average standard deviation score for all 18 items is 0.84, which is slightly lower than the tangibility dimension discussed earlier.

Table 3: Reliability: Mean

Item	1	2	3	4	5	6	7	8	9
Mean	1.6	1.6	1.6	1.6	1.7	3.2	3.2	3.4	3.1
Item	10	11	12	13	14	15	16	17	18
Mean	3.1	2.6	2.5	2.3	2.1	2.2	2.5	2.5	3.1

Table 4: Reliability: Standard deviation and variance

Item	1	2	3	4	5	6	7	8	9
Standard deviation	0.8	0.6	0.6	0.5	0.6	0.9	0.9	0.9	1
Variance	0.7	0.4	0.4	0.3	0.3	0.8	0.7	0.8	1
Item	10	11	12	13	14	15	16	17	18
Standard deviation	0.9	0.9	0.9	0.9	0.9	0.9	1	0.8	1
Variance	0.9	0.9	0.8	0.8	0.8	0.8	1.1	0.6	1

### Responsiveness

The responsiveness dimension items considered factors such as willingness to help the customer, keeping records and performing at the designated time; these might cause academic staff to trade-off. There are 11 items designed to meet the condition of responsiveness (see the Appendix). Furthermore, eight items in the responsiveness dimension scored between 1.78 and 2.94 (Table 5), clearly showing disagreement among respondents on the items tested. These eight items are attending class presentations, preparing more practical tutorials, undertaking supervision of research students, rehearsing for lectures and others. However, there are three items scoring a mean average value more than 3. These are writing letters, e-mails or memos to respond to queries, responding to daily enquiries from students and finding sources for case studies to be discussed in class. The mean average value for all 11 items is slightly higher than other service quality dimensions such as tangibility and reliability. Once again, the result proves that the respondents are in general disagreement with the items tested in the responsiveness dimension, suggesting they do not practise trade-offs when delivering services as per the responsiveness condition.

The variances between items (Table 6) are quite small and the items are spread between 0.28 and 1.40. Item 10 scored the lowest variance compared with other items, while the pattern shows that the respondents have similar opinions on the items tested in the responsiveness dimensions. On the other hand, the standard deviation result shows that item scores vary between 0.53 and 1.18. The overall average standard deviation score for all 11 items is 0.78,

which is slightly lower than for tangibility and reliability. The lowest and highest variance and standard deviation score was found between items 9 and 10.

Table 5: Responsiveness: Mean

Item	1	2	3	4	5	6	7	8	9	10	11
Mean	1.95	1.78	2.11	3.06	3.06	2.83	2.88	3.11	2.11	1.82	2.94

Table 6: Responsiveness: Standard deviation and variance

Item	1	2	3	4	5	6	7	8	9	10	11
Standard deviation	0.62	0.55	0.58	0.73	0.73	0.99	0.99	0.96	1.18	0.53	0.68
Variance	0.39	0.30	0.34	0.53	0.53	0.97	0.99	0.93	1.40	0.28	0.46

### Assurance

The assurance dimension items considered factors such as knowledge and courtesy of employee, ability to inspire trust, confidence and providing individualized attention; these may cause academic staff to carry out trade-offs. There are five items designed to meet the assurance condition (see the Appendix).

Items 1, 2 and 3 in the assurance dimension scored below 2 (Table 7), which means that the respondents either strongly disagree or disagree with the items stated in the survey. The three items which score lower than 2 in the assurance dimensions are representing the institution at professional events, establishing collaborative links outside the institution and visiting companies. However, items 4 and 5, commitment to the profession and planning and organizing administrative duties, score between 2.78 and 2.88 which are close to the "sometimes" scale in the survey. The mean average for the five items is 2.26 which is lower than the responsiveness and reliability dimensions but the same as the tangibility dimension. The mean average value score indicates that respondents are in disagreement with the items stated in the assurance dimensions as most of the items score below 3.

The items' variance in assurance dimensions is quite small and spread out between values of 0.43 and 0.99 (Table 8). Item 1 scored the lowest variance in comparison with other items. On the other hand, the standard deviation result shows that scores varied from 0.43 to 0.99. The overall average standard deviation score for all five items is 0.75 which is the lowest among the other dimensions discussed earlier. The range of items is 3, with the minimum value chosen by respondents as 1 and the maximum value chosen by respondents as 4. None of the respondents chose 5 for their option in this section.

Table 7: Assurance: Mean

Item	1	2	3	4	5
Mean	1.79	1.89	1.94	2.88	2.78

Table 8: Assurance: Standard deviation and variance

Item	1	2	3	4	5
Standard deviation	0.71	0.68	0.66	0.99	0.73
Variance	0.51	0.46	0.43	0.99	0.54

### Empathy

The empathy dimension items considered factors such as caring and individualized attention for students. There are six items designed to meet the empathy conditions (see the Appendix). The average mean score of 2.81 shows that the respondents disagree with the items in the empathy dimensions (Table 9). Items 2, 3, 4 and 5 score average mean values between 2.26 and 2.95 while items 1 and 6 score mean values from 3.00 to 3.39. Items 1 and 6 score slightly higher than the other four items. Items 1 and 6 are responding to requests and providing pastoral care for the student. These two items show some significance on the trade-off being practised by the respondents. Furthermore, the empathy dimensions scored 2.81 as an average mean which is comparatively higher than other service quality dimensions scores. Item 4 scored the lowest variance compared with other items. The pattern shows that overall the respondents might have similar opinions on the items tested in the empathy dimension.

The standard deviation results vary between items from 0.71 to 0.85 and score 0.77 as an overall average (Table 10). The range level between items scored is 3. The maximum value chosen by respondents is 4 and minimum value chosen is 1. None of the respondents chose a scale 5 when providing responses to the items.

Table 9: Empathy: Mean

Item	1	2	3	4	5	6
Mean	3.00	2.42	2.26	2.95	2.84	3.39

Table 10: Empathy: Standard deviation and variance

Item	1	2	3	4	5	6
Standard deviation	0.77	0.77	0.73	0.71	0.76	0.85
Variance	0.59	0.59	0.54	0.50	0.58	0.72

### Open ended question

The respondents were given the opportunity to provide any relevant information which is not covered in the items discussed in the service quality dimensions. Only three staff have given comments. These respondents commented that academic staff cannot be great researchers, great teachers and great administrators. The respondents also commented that the university tends only to reward the great researchers and not the great teachers. This makes staff feel that spending time with students or providing a pastoral role is not helping them to advance their careers. However, the respondents admitted that they enjoy working as academic staff.

### Conclusion and managerial implication

Strathclyde Business School does not seem to have serious problems in managing their staff, particularly in meeting the various demands from stakeholders. However, the research has shown some positive indication of trade-offs which need to be considered for future improvement. This study used 45 items to address trade-off practices among academicians in SBS using five service quality dimensions. The five are Tangibility, Reliability, Responsiveness, Assurance and Empathy. The results prove that 70% of the

respondents either strongly disagree or disagree on the items discussed in the survey; this means that they are not practising trade-offs. On the other hand, 14 respondents, comprising 30% of the total participants, show some evidence that practising trade-offs does occur.

From the items listed in the questionnaire, the preparation of grant proposals is viewed as the main factor leading to trade-off practices among academic staff. This shows that academic staff are spending more time on preparing applications for grants, leading to trade-offs in other academic activities. The lowest indication of trade-offs was recorded from delivering seminars and setting marking guidelines for examinations. Probably this is due to staff experience in handling seminars and setting exam questions and marking schemes. This experience means less time is required for these tasks. Both of these duties come from the reliability dimension.

The explanation of these results can be extended by addressing them dimensionally using service quality. Both tangibility and assurance scored an average mean ( $\chi$ ) value of 2.26, the lowest dimension compared with the other three service quality dimensions used in this research. However, the service provider needs to monitor some of the items which scored an average mean of more than 3. The three items mentioned in the tangibility dimension is evidence that SBS needs to monitor staff knowledge of information technology to prevent trade-off practices occurring.

Secondly, the reliability dimension scored an average mean value of 2.43, showing some positive indication of trade-offs being practised. This is particularly pertinent in the areas of academicians managing research grants as a principal investigator or co-investigator, as well as in preparing research grants. The findings clearly show that the average mean values for both items exceed 3, approaching the "agree" scale in the survey. The institution should provide assistance or help to the academicians to manage their research grants and for preparing applications for research grants. The organization should also consider hiring research assistance to help the principal or co-investigator in managing their research grants. If the service provider fails to provide adequate assistance on this issue, it will have a negative impact for the work of the institution in the future.



For the responsiveness dimension, the average mean value scored 2.51 with three areas identified as being at risk of trade-offs. The findings show that academicians tend to practise trade-offs when writing letters, emails or memos to respond to queries or find sources for case studies. Management has to find better solutions to help the academicians with their administrative work. This can have a significant detrimental impact among academicians with regard to their other duties. This issue can be solved if the institution considers employing a research assistant to help the academicians in dealing with the items from the responsiveness dimension.

Finally, the empathy dimension was found as the area where the practice of trade-offs was most common among academic staff at SBS; the average mean ( $\chi$ ) value is 2.81. This clearly demonstrates the impact of the trade-offs on duties undertaken by the academic staff at SBS. The academicians believe that responding to requests and providing pastoral care for students forces them into trade-offs. The managers have to look into this area seriously and investigate how to overcome these issues.

The challenges faced by academicians have been discussed and areas needing to be improved, especially in balancing their role when performing academic activities, have been identified. The research findings clearly enhance the knowledge and understanding of the field of trade-offs and its application using service quality dimensions. Even though all the dimensions show average mean values below 3, the service providers still need to monitor organizational changes in a consistent manner. Some of the items in the five dimensions show positive signs of trade-off practices by academicians in SBS. This research will also help service providers to identify appropriate training programmes to improve the efficiency of academicians in their daily routines. The research is also significant in addressing the need for future resource allocation and in responding to the changes in staff needs. The results of this study also have practical implications for service providers in their efforts to improve their operational efficiencies as well as in satisfying their customers.

### **Limitations and recommendations**

This study has limitations that need to be recognised. The survey has opened up a new dimension by exploring trade-offs among service providers in a

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higher education context. The scope of study chosen was the Strathclyde Business School, a high profile business school which was ranked 55 in 2010 and 74 in 2011 by the *Financial Times*. Furthermore, SBS has an excellent reputation for business studies and is regarded as one of the best business schools in the world. The impact of trade-off is shown to be at a minimum level among the academic staff in the School. However, the research might produce diverse outcomes if applied to a different context in the university or among other business schools. Furthermore, the small sample of the study should not be used to generalize the whole population of the SBS academic staff. The service quality dimensions proposed by Parasuraman et al (1985) were unable to provide the precise meaning of the items used in the dimensions. Some of the items need to be repeated in a different service quality dimension but using some similar meanings. There has been some confusion created among the academic staff when answering the questions in the survey due to this issue.

In the future, research should consider other service quality models which might give better outcomes for this field of study. Moreover, the research only considers five service quality dimensions. These may not be able to address all of the trade-offs being practised by the academic staff in SBS. Secondly, the study should develop various service quality items which could provide better options for the respondents and lead to more accurate and meaningful answers. Thirdly, any future research should also consider measuring the impact of the trade-offs being practised by the academic staff within the entire higher education institution. A future researcher could also consider employing this model in other service organizations to identify the trade-offs being practised. Finally, the research has employed empirical analysis to analyze the data gathered from the survey. However, the research failed to utilize qualitative analysis, resulting in a knowledge gap in the work. Therefore, the direction of future research should consider using qualitative methods such as Strategic Options Development and Analysis (SODA) and System Dynamics to address the issues appropriately, compared with the quantitative methods which have been used widely by service scholars.

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## Appendix: Sample questionnaire

Question	Answer
I agree to participate in this survey	Yes
	No

Question	Section A	Detail
1	Department	Accounting and Finance, Economics, Human Resource Management, Hunter Centre for Entrepreneurship, Management, Management Science and Marketing
2	Academic Position	Professor, Reader, Senior Lecturer, Lecturer, Research Staff, Research Associate, Research Fellows, Senior Teaching Fellow, Teaching Associates, Teaching fellows, Industry Associates
3	Gender	Male/Female
4	Year of Experience	<1 year, 1-3,4-6,7-9,10-12,13-15,16-18,19-20 and 21 above

Section B: SERVQUAL DIMENSIONS	Strongly Disagree	Disagree	Sometimes	Agree	Strongly Agree
<p><b>5. Tangibles</b></p> <p>Definition: Conditions of physical facilities, equipment used to provide the service, and appearance of personnel. <i>I usually practise trade-offs when:</i></p> <ol style="list-style-type: none"> <li>1. Making facilities reservation such as computer labs, seminars rooms and others in advance</li> <li>2. Making sure that teaching support equipment is functioning</li> <li>3. Maintaining teaching materials in the computer folders</li> <li>4. Making sure that teaching facilities are functioning</li> <li>5. Coordinating research equipment and techniques</li> <li>6. Students' rooms are not provided with adequate internet connections</li> <li>7. Dressing up well for the classroom (Make-up, identify appropriate colour of tie, etc)</li> <li>8. Updating course information on website</li> </ol>					
<p><b>6. Reliability</b></p> <p>Definition: Ability to perform the promised services dependably and accurately, keeping record correctly and performing the services at the designated time. <i>I usually practise trade-offs when:</i></p>					

<ol style="list-style-type: none"> <li>1. Developing teaching materials such as syllabus, visual aids, tutorial solutions, supplementary notes, and course websites.</li> <li>2. Delivering seminars, trainings and tutorials</li> <li>3. Assessing students' coursework</li> <li>4. Setting and marking examinations</li> <li>5. Preparing grading criteria for each assignment/project for students</li> <li>6. Managing research grants as a principal investigator or co-investigator</li> <li>7. Publishing scientific papers in leading international journals.</li> <li>8. Preparing grant proposals</li> <li>9. Maintaining the students' class attendance in the lectures/tutorials</li> <li>10. Undertaking administrative tasks related to the department, such as student admissions, induction programmes and involvement in committees</li> <li>11. Conducting or participating in interdepartmental meetings</li> <li>12. Involved in departmental level strategic planning</li> <li>13. Contributing to the management of quality, audit and other external assessments</li> <li>14. Coordinating the work of others to ensure that courses are delivered effectively</li> <li>15. Providing support for colleagues by referring them to sources of further help if required</li> <li>16. Engaging in professional development activities</li> <li>17. Inviting industry speakers</li> <li>18. Setting up work attachment for the students</li> </ol>					
<p><b>7. Responsiveness</b>  Definition: Willingness to help customer and provide prompt service. <i>I usually practise trade-offs when:</i></p> <ol style="list-style-type: none"> <li>1. Preparing more practical tutorials e.g. lab work and solution</li> <li>2. Attending class presentations by students</li> <li>3. Providing feedback on their coursework</li> <li>4. Writing letters, mail or memos to respond to queries</li> <li>5. Responding to daily queries from students/staff</li> <li>6. Helping students to secure financial support for research</li> <li>7. Developing links with external contacts such as other educational bodies, employers, and professional bodies, to foster collaboration</li> <li>8. Finding sources for case studies to be discussed in the course.</li> <li>9. Rehearsing lecture so that lesson can be communicated more effectively.</li> </ol>					

10. Undertaking supervision of research students 11. Being available during consultation hours					
<b>8. Assurance</b> Definition : Knowledge and courtesy of employees and their ability to inspire trust confidentiality and providing individualized attention. <i>I usually practise trade-offs when:</i> 1. Representing the institution at professional conferences, meetings and seminars 2. Establishing collaborative links outside the university with industrial, commercial and public organisations. 3. Visiting companies to have first-hand experience 4. Commitment towards the profession and to own continuing professional development (CPD) 5. Planning and organizing administrative duties on an ongoing basis.					
<b>9. Empathy</b> Definition: Caring, individualized attention that the company provides to its customers. <i>I usually practise trade-offs when</i> 1. Responding to requests 2. Providing feedback for assignments 3. Dealing with complaints 4. Providing personalized and individualized attention to students 5. Handling complaints and solving problems 6. Providing pastoral care and support to students.					

10. Would you like to add any other comment which is not included above?