Full Length Research Paper

The relationship among the postgraduate research climate, service experience, quality and satisfaction

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Since quality assurance in postgraduate (PG) research is becoming increasingly important, this paper explores the relationship among the PG research climate and the PG students' perception of their service experience, the service quality and their satisfaction with the PG service, by developing and empirically evaluating a conceptual model, using specifically developed and validated research instruments. By surveying the entire cohort of masters and doctorate graduates of a large research university in South Africa, and fitting the data to the conceptual model using structural equation modeling, it was ascertained that the PG research students' perception of the research climate is associated with their perception of the PG service quality and the overall PG service experience. A significant relationship was also ascertained between the PG research service quality and PG service satisfaction. However, no direct association was ascertained between the PG research students' perception of the research climate and their overall satisfaction with the research service.

Key words: postgraduate (PG), research climate, students perception, higher education.

INTRODUCTION

Since education is essentially a service industry, its management practices are typically concerned with issues such as quality, which fall within the aegis of services marketing. Given the aforementioned, perhaps the most straightforward manner by which to apply services marketing perspective is to borrow general marketing measurement instruments directly from the field and apply them to PG education.

However, most research on the evaluation of service quality focused more on the technical and functional aspects of service delivery which, by assuming that education encompasses only the 'technical' aspects, may not be telling the whole story. The other side of the story is the 'psychological' or subjective personal reactions and feelings experienced by consumers (students) when they consume the service. This phenomenon has been called the '*service experience'* and has recently been found to

be an important part of consumer evaluation of and satisfaction with services (Otto and Ritchie, 1995: 167).

According to Bowen et al. (1990), in their attempts to study new concepts and approaches to services delivery, most researchers have emphasized the social psychology perspective and the focus on the interaction between service personnel and customer during the service delivery, namely the service encounter. Hill (1995) stated that perceived higher education (HE) service quality could be the products of a number of service encounter evaluations by students, resulting from interactions with the HE Institution (HEI) through its administrators, lecturing staff, academic managers, etc.

In view of the afore-mentioned, this paper presents the outcome of the development and empirical evaluation of a postgraduate 'service encounter-service experience-service quality' model by drawing heavily on concepts and theory from the services marketing literature.

This paper is organized as follows: a brief discussion of the PG research service encounter, the service experience and service quality is followed by a discussion

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of the research climate in the context of the research service encounter, which culminates in the development of research proposals and a conceptual model. Thereafter, an explanation of the research methodology as well as the development of the research instruments is followed by reporting the results of empirically testing the conceptual model. Finally, the conclusions and limitations of the study as well as opportunities for future research are presented.

The postgraduate research service encounter, the service experience and quality

Service encounters are recognized within the service quality research field as a key concept (Zeithaml and Bitner, 2000; Dale, 2003), since what happens during the encounter is important in understanding what affects the customers' perception of service quality. It has been well articulated in the service quality literature that since each service encounter impacts on the service user's overall impression and evaluation of the service and ultimately on their perception of service quality, understanding the service encounter is as a key challenge for service firm managers, having implications for service design, quality control, employee screening and training, and relationship marketing (Bitner, 1995; Mittal and Lasser, 1996, cited by Govender, 1998).

The importance of the human element in the service encounter cannot be overemphasized, since it can embed itself in several ways. For example, most service-production processes require service organizations' personnel to provide significant inputs, both at the front-line of delivery and in those parts of the production process that are relatively removed from the customer (Keltner and Finegold, 1996: 57-58). Furthermore most services, especially PG research service require active involvement of the consumer; thus the consumer becomes the co-producer.

Since in most services including PG research, quality occurs during the service delivery, usually in an interaction between customer and contact personnel of the service firm, in order to manage quality and build lasting relationships, it is important to understand what happens in these encounters and what affects the customer's perception of them. Longnick-Hall et al. (2000) assert that 'active participation' is unavoidable in the case of human service organizations such as universities and other tertiary institutions. Kotze and du Plessis (2003), argue that through participation in an array of learning activities, students 'co-produce' their education (theses and dissertations), which may result in the successful completion of a doctorate or masters degree.

Claycomb et al. (2001) define three different levels of customer participation, namely, high, moderate and low and Kotze and du Plessis (2003: 187) assert that there is adequate support for the view that educational services fall into the category of 'high customer participation."

Schenider and Bowen (1995) assert that since the interaction which takes place between the (service) organization, its employees and customers during the service encounter (in many cases) cannot be clearly specified beforehand, the climate of the organization offers an ad hoc means of specifying the activities which should be carried out. Research (Schneider et al., 1994) has shown that organizations need to be aware of three kinds of organizational climate (OC) in order to ensure the success of quality improvement efforts: a climate for service, a climate for innovation, and a climate for human resources or employee welfare.

Bowen (1990) also maintains that when a product is not 'immediately' available (such as a post-graduate degree), service firms must rely on managing tangibles such as the setting, and contact personnel to create a positive image for their intangible offering. Furthermore, although situations vary from organization to organization, there are some common and identifiable features of organizational environments that serve to support quality customer service. Schneider and Bowen (1995) found that the manner in which the service was delivered on climate dimensions was strongly related to customer evaluations of the service they received and their intentions to continue using the service.

Since the intangibility of services makes it difficult for management, employees, and customers to assess the service output and service quality, consequently, the organization's overall 'climate for service' is very important in shaping both customers' and front-line employees' attitude about the process and outcome of service delivery. Since PG service encounters do not take place in a vacuum, but in a specific milieu, it is important to also understand the relationship (and perhaps impact) of the service 'climate' of the service organization on the service encounter, the service experience, service satisfaction and service quality. Given the aforementioned, especially the implied importance of the organizational (research) climate (OC), next literature review will briefly expand on the concept "OC" so as to properly locate its relevance in PG research encounter context.

The postgraduate research climate, service experience and quality

Over the years, several explanations have emerged about the dimensions that constitute the OC construct and Tyagi (1982) cited by Govender (1998) identified four general OC variables which were found to be causative factors for attitude and performance, namely, job challenge and variety, job importance, task conflict, role overload, leadership consideration, organizational identi-fication, and management concerns and awareness.

Le Blanc and Nguyen (1997) ascertained that service quality is derived mainly from reputation, a factor which (they propose) is tied closely to management's capacity to foster an OC directed at serving the needs of its customers and to the image of the business school. Salanova et al, (2005) cite by Schneider et al. (1998) who stress that a service climate focuses service employee effort and competency on delivering service, which in turn yields positive experiences for customers as well as positive customer perceptions of service quality. Furthermore, these researchers who examined the mediating role of service climate in the prediction of employee performance and customer loyalty ascertained that organizational practices and resources predict service climate, which in turn predicts employee performance and customer loyalty. The organizational practices according to Salanova et al, (2005) are akin to the service climate. Ancarni et al. (2009) also ascertained that (in a hospital setting), employees' perception of the organizational climate mediates the patients' satisfaction, and the manager's ability to shape the OC is critical in order to increase patients' satisfaction.

Since services are intangible, Bowen and Schneider (1988) cited by Dietz et al. (2004: 81) argued that 'the creation of a climate for excellent service was important to ensure that customers received high quality service." Although in the post graduate HE environment several service employees (academic and administrative), may influence the PG research students' service experience, for the purpose of this study, the research climate may be defined as the research students perceptions of organizational policies, practices and procedures which promote a climate which recognizes and rewards service to the PG research students.

This definition by implication suggests 'customer orientation' as an important facet of the research climate and that much rests on the perceptions of the individual research supervisor, which influences his/her behavior. Thus, the research climate which manifests itself through the OC will depend on the fundamental support provided by HEIs through 'resources, training, managerial practices and assistance required to perform effectively,' (Schneider et al., 1998).

When employees form climate perceptions about the organization (HEI) and about its subunits (school/ department), they consider different elements of their 'work' environment, forming distinct perceptions of the organization-targeted and unit-targeted service climates. Consistent with service climate theory according to which a subunit's positive service climate facilitates delivery of excellent service and improves customer perceptions and reactions, this paper assumes that with specific reference to the PG research environment, the climate for research service at the school/department level is developed from the university's research service climate. Since PG research students interact more with the sub-unit (discipline/department/school) employee (supervisor),

they are likely to develop their perception of the research climate through these interactions.

The OC as it pertains to the HE environment, and more especially the PG research students' perception and impact thereof on service quality, the service experience and service satisfaction, has not received much attention by researchers. In order to explore this further, it is postulated that:

P1: The OC as perceived by the postgraduate students' (PGSs) is associated with their perception of the PG research service quality (PGSQUAL).
P2: The PGS' perception of the OC is associated with their perception of their overall service experience (PGSERVEXP).
P3: The PGS' perception of the OC is associated with their perception of their overall service satisfaction (PGSERVSAT).

Service quality, service experience and service satisfaction

Douglas et al. (2008) cite several researchers (Bitner, 1995; Bolton and Drew, 1991; Parasuraman et al., 1988) who argued that customer satisfaction is a precursor of service quality, and conclude that perceived quality is a form of attitude related but not equivalent to customer satisfaction. However, according to Alridge and Rowley (1998), perceived quality is derived from the consumers' overall evaluation of the service, and quality can be distinguished from satisfaction, in that quality is a general attitude, whereas satisfaction is linked to specific transactions, and perhaps satisfaction with a series of transactions leads to perceptions of good quality.

The service quality SERVQUAL-SERVSAT-SERVPERF relationship has been the topic for many a research (Cronin and Taylor, 1992). Some researchers (Bolton and Drew, 1991) argued that customer satisfaction is an antecedent of service quality, whilst others (Hoisington and Naumann, 2003; Carillat et al., 2009) assert that service quality leads to customer satisfaction and behavioural intentions. Cronin and Taylor (1992) argued that the distinction between satisfaction and quality is important because service providers need to know whether their objective should be to deliver satisfied customers, who will then develop a perception of high service quality, or that they should aim for high service quality aimed at customer satisfaction.

In order to further explore the relationship among service quality, service experience and service satisfaction with specific reference to the PG research service encounter, it is postulated that:

P4: The PGS' perception of the PGSERVEXP is associated with their perception of the PGSQUAL.
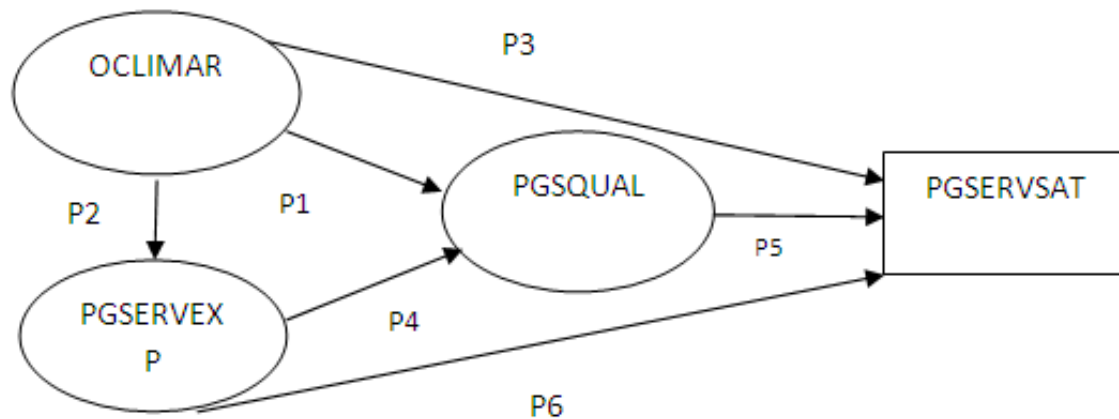
Figure 1. Conceptual model of the PG service experience.

P5: The PGS' perception of the PGSQUAL is associated with their PGSERVSAT.
P6: The PGS' perception of their PGSERVEXP is associated with their PGSERVSAT.

The aforementioned propositions (P1-P6) are depicted schematically (Figure 1) as a conceptual model which reflects possible relationships among the variables as they pertain to the postgraduate research service encounter.

RESEARCH METHODOLOGY

In order to assess the conceptual model (Figure 1), a survey was conducted over a month (April to May, 2011) among 816 (the total population) masters and doctorates who graduated from a large research university in South Africa in 2011. The name list and e-mail contact details of the graduates was obtained from the graduation office, and two approaches were used to reach the graduates. The electronic version of the questionnaire, using QuestionPro (www.QuestionPro.com, 2010) was sent via an e-mail link to all graduates. This was supported by hardcopies of the questionnaire which were distributed at the graduation venues in special envelopes together with the degree certificates. Graduates were asked to return the completed questionnaire or complete the survey within a month from the date of the graduation.

Research instruments

Postgraduate research climate: OCLIMAR

To ascertain the PG research students' perception of the research climate (the organizational climate for research) the OCLIMAR instrument was developed by adapting Govender's (1998) organizational climate questionnaire which was based on Kelley's (1987) scale originally developed on exploratory research of Parasuraman et al. (1985). A further development of Govender's (1998) 22-item scale entailed incorporating certain relevant aspect of PREQ (Ginns et al., 2009) which resulted in a 24 OCLIMAR questionnaire. The respondents were required in terms of their perceptions of the importance the university placed upon various

characteristics of the research service it provided, to indicate their agreement or disagreement with each of the 24 statements (Table 2), expressed on a 5-point Likert scale, where 1=Strongly Disagree; 2=Disagree; 3=Neither Agree nor Disagree; 4=Agree and 5=Strongly Agree.

Postgraduate research service quality: PGSQUAL

Although not without criticism (Alridge and Rowley, 1998: 200), the most widely used and debated tool and instrument for the measurement of service quality is the SERVQUAL instrument developed by Parasuraman et al. (1988). According to Parasuraman et al. (1988), quality evaluations as perceived by customers stem from a comparison of what customers feel that the organization should offer (that is their expectations) and their perceptions of the organization providing the service. Also known as the GAPS model since service quality is conceptualized as the gap between customer expectations and perceptions, the SERVQUAL instrument presents the respondent with 22 service attributes grouped into five dimensions, namely tangibles, reliability, responsiveness, assurance and empathy, which they rate using a Likert-type scale response format (Ford et al., 1999: 172).

However, the application of SERVQUAL in higher education has not been without criticism (Alridge and Rowley, 1998; Sohail et al., 2003; Tan and Kek, 2004; Stodnick and Rogers, 2008), some of which include the need to ask the same questions twice, and the fact that the instrument captures a snapshot of perceptions at one point in time. According to Hair (2006), the work carried out so far using SERVQUAL in a higher education context would seem to suggest that the instrument can be used successfully, as long as the modifications are kept to a minimum.

In their quest to develop better research instruments which are also more appropriate to the nature of the service, some researchers (Drennan, 2008) report on the postgraduate research questionnaire (PREQ) which was introduced in Australia in 2002 against a background of increased attention on quality and accountability in the Australian higher education sector. PREQ which consists of 28 items using a five-point Likert scale, ranging from 'strongly disagree' to 'strongly agree', as well as a 'do not apply' category is a multidimensional measure of graduate students' experience of research and research supervision, is based on the principle that the students' perception of research supervision, infrastructural and other support, intellectual climate, goals and expectations will influence their evaluations of the outcomes achieved as a consequence of their research experience

Table 1. Experience (pgservexp) instrument postgraduate service.

OE1	I further developed my problem solving skills	1	2	3	4	5
OE2	I shaped my analytical skills	1	2	3	4	5
OE3	I feel confident to tackle unfamiliar problems	1	2	3	4	5
OE4	I have learned how to write and confidently present papers at a conference	1	2	3	4	5
OE5	I have learned to develop my ideas and present them in a logical and scientific way	1	2	3	4	5
OE6	I have learnt how to publish papers in scientific journals	1	2	3	4	5

(ACER, 2000, cited by Drennan, 2008: 490).

For the purpose of this study, the postgraduate research service quality (PGSQUAL) instrument (Table 1) was developed primarily by adapting the SERVQUAL instrument which encapsulates the perceptions-expectations gap covering all five (tangibles, reliability, responsiveness, assurance and empathy) service quality dimensions (Parasuraman et al., 1988), and incorporating certain elements from the PREQ as was done in previous studies (Dann, 2008; Drennan, 2008). The adaptation entailed making minor changes to the SERVQUAL statements to fit the context and combining expectations and perceptions.

For each of the service quality items indicated in Table 1, the graduates were requested 'to indicate their rating with respect to the overall service PG research students received at the university, on a continuum where 1= worse than expected and 5= better than expected.

Postgraduate research service experience: PGSERVEXP

According to Alridge and Rowley (1998: 198), work on approaches to the evaluation of the student experience can be divided into two loosely bound categories, namely, methods that focus on assessing teaching and learning and, methods that assess the total student experience. Some researchers such as Ginns et al. (2009) adapted the PREQ instrument further to develop the SREQ (student research experience questionnaire) which applies theory derived from studies of teaching and learning in higher education to the experiences of postgraduate research students, to where the focus was on the overall postgraduate experience at the broad level of the university and disciplines (faculties and departments) within a university rather than at the effectiveness of the individual supervisor. The aforementioned researchers are of the view that the overall PG research student experience is also a useful perspective to adopt in student satisfaction in marketing terms.

For the purpose of this research, based on the principles underlying the SREQ instrument, the PGSERVEXP questionnaire (Table 3) was developed by combining certain elements of the PREQ and SREQ so that any aspects of the service experience which were not covered by the OCLIMAR and PGSQUAL questionnaire were compensated for by the other. The graduates were asked to rate each of the six items with reference to their overall PG experience by indicating their level of agreement with each statement below on a 5-point Likert scale where 1=Strongly Disagree; 2=Disagree; 3=Neutral; 4=Agree; 5=Strongly Agree.

Postgraduate research service satisfaction: PGSERVSAT

Considering that the intention was to get an overall (summary) measure of the level of service satisfaction with the PG research service, a single item Likert type question with the following decisions points: Strongly Disagree; Disagree; Neutral; Agree; and Strongly Agree, was used. The question read as follows: "Overall, I was satisfied with the quality of my PG research experience."

EMPIRICAL FINDINGS

Response rate

The survey was conducted over a month (April to May 2011), during which period, weekly e-mail reminders were sent encouraging the graduates to participate by completing the questionnaire.

Of the 816 graduates surveyed, 220 (26.96%) respondents viewed the questionnaire, 120 (54.55%) attempted it and only 117 (53%) completed the survey. It became evident from the data extracted via the electronic survey instrument (QuestionPro.com), that the average time taken to complete the questionnaire was 17 min.

The sample constituted 58% black graduates, 23.2% white graduates followed by 16.1% of Indian graduates, and the rest were unclassified. The majority of the graduates completed the coursework masters (35.1%), a full research masters (37.7%) degree, and 27.2% being doctorates.

Reliability of the research instruments

Coakes and Steed (2003: 140) state that although there are a number of different reliability coefficients, one of the most commonly used is the Cronbach's alpha, and a value of 0.7 or higher is regarded as good, in that similar results will be obtained if this survey is conducted among a larger sample of respondents. The Cronbach's alpha was calculated for all the items which have the same scales in each variable, namely, the organizational climate for research, the PG research service quality and the postgraduate students' overall research service experience. The outcome of the process was that the OCLIMAR, PGSQUAL and PGSERVEXP instruments returned Cronbach's alpha values of 0.965, 0.969, 0.867 respectively, which validate use of the research instruments. The Cronbach's alpha value could not be calculated for the overall PG service satisfaction (PGSERVSAT) since it comprised a single item only, and a minimum of two items is required (Coaks and Steed, 2003).

Validity of the research instruments

Factor analysis was conducted using the principal

Table 2. Factor loadings for the PGSQUAL research instrument.

Description of Item	Item	Component	
		1	**2**
Willingness of staff to assist PG research students	SQ3	0.89	0.20
The courteousness of staff towards PG research students	SQ4	0.86	0.18
Delivering on promises to PG research students do something by a certain time	SQ10	0.83	0.28
The promptness of the service offered to PG research students	SQ5	0.82	0.34
Performing the PG research service right the first time	SQ13	0.81	0.40
Ability of staff to understand PG research students' needs	SQ2	0.80	0.35
The personal attention PG research students received	SQ14	0.79	0.44
The ability of staff to answer PG research students' queries	SQ9	0.78	0.33
The personal attention given by staff to PG research students	SQ7	0.77	0.43
Sincerity of staff in solving PG research students' problems	SQ12	0.76	0.47
Telling PG research students exactly when the services will be performed	SQ16	0.75	0.52
Never being too busy to respond to PG research students' requests	SQ15	0.74	0.48
Always having PG research students' best interest at heart	SQ11	0.69	0.54
The confidentiality with which staff deal with PG research issues	SQ8	0.68	0.46
Efforts made to ensure that PG research students develop an understanding of the standard of work expected	SQ23	0.66	0.50
Accuracy of PG research student records	SQ1	0.66	0.35
Honouring promises made to PG research students	SQ18	0.65	0.57
The convenience of operating hours for PG research students	SQ6	0.63	0.39
Financial support for PG research activities	SQ17	0.26	0.80
Research support services provided for PG research students	SQ19	0.41	0.77
Opportunities provided to PG research students to become integrated into the broader department/school/ university research culture	SQ26	0.29	0.80
Opportunities provided for social contact with other postgraduate research students	SQ20	0.30	0.74
Modernness of library resources and services	SQ22	0.20	0.71
Freedom allowed to PG research students to discuss their research needs	SQ25	0.52	0.70
PG research ambience in the department/school/faculty	SQ21	0.43	0.69
Seminar programmes provided for PG research students	SQ24	0.31	0.69
Percentage of variation accounted for		65.22	6.96
Cronbach's alpha		0.98	0.91

components method with varimax rotation to determine the validity of the items comprising the questionnaires developed to measure the variables whose relationship in the conceptual model is being investigated.

Table 2 reflects the results of the factor analysis of the PGSQUAL research instrument. Although the literature (Kline, 1994), suggests that a factor loading of 0.3 or greater can be considered to be significant, given the large number of items in the PGSQUAL instrument, it was advisable to adopt the principle of factor loadings of 0.4 or higher as being significant.

It is evident from Table 2 that all 26 items loaded onto two factors with loadings exceeding

Table 3. Factor loadings for the OCLIMAR research instrument.

Description of item	Item	Component		
		1	2	3
PG research students assured of consistent and prompt service	OCR13	0.83	0.23	0.22
PG research students can depend on the service provided	OCR12	0.82	0.38	0.23
PG research students' best interest is always at the heart of the organization	OCR10	0.78	0.38	0.26
PG research students understand the service being provided	OCR1	0.76	0.14	0.33
Staff are properly trained to deal with PG research matters	OCR1	0.75	0.38	0.21
A reputation for good PG research is emphasized	OCR16	0.74	0.30	0.11
The research ambience is the department/school/university stimulates PG research	OCR15	0.70	0.32	0.35
Good PG research seminar programmes are provided	OCR14	0.69	0.19	0.30
Individual PG research student attention is stressed	OCR17	0.68	0.36	0.25
Staff are friendly and polite to PG research students at most times	OCR8	0.68	0.16	0.17
PG research students are free to discuss their research needs	OCR19	0.57	0.49	0.15
PG research students are provided with opportunities to become integrated into the broader department/school/university	OCR21	0.50	0.45	0.36
PG research students are encouraged to undertake further PG research studies	OCR24	0.46	0.43	0.20
Opportunities are provided for social contact with other PG research students	OCR9	0.25	0.80	0.05
Operating hours are convenient for PG research students	OCR7	0.29	0.76	0.24
PG research students have access to up to date computing facilities and services	OCR22	0.17	0.72	0.35
PG research students have access to good technical (research) support	OCR18	0.48	0.63	0.27
PG research students have access to suitable working space	OCR2	0.34	0.60	0.47
PG research students receive confidential service	OCR20	0.30	0.51	0.38
PG research students develop an understanding of the standard of work expected	OCR23	0.44	0.44	0.37
PG research students are informed beforehand of the costs associated with their studies	OCR4	0.21	0.14	0.82
PG research students are made aware of the appropriate financial support for research activities	OCR3	0.21	0.28	0.81
PG research students are informed about the various research support services available	OCR6	0.46	0.39	0.68
Promises to PG research students are honoured	OCR5	0.46	0.36	0.57
Percentage of variation accounted for		56.32	6.48	4.68
Cronbach's alpha		0.95	0.89	0.88

0.4. FACTOR 1 which was labelled 'research supervisor', comprised the following PGSQUAL items: SQ1-SQ16; SQ18 and SQ 23. FACTOR 2 which was labelled 'institutional support' comprised items SQ17; SQ19-25 and SQ26. The aforementioned two factors produced acceptable Cronbach's alpha values (0.978 and 0.910,

respectively) which implied that the two factor PGSQUAL instrument revealed good internal consistency (Nunnaly and Bernstein, 1994).

The outcome of factor analysis process for the OCLIMAR instrument reflected in Table 3 reveals that three factors explain 67.48% of the cumulative variance and, all of these factors have

eigen values exceeding 1.

It is also evident from Table 3 that the 24 items of the OCLIMAR instrument loaded on three factors. These factors named postgraduate service orientation comprising items OCR1, OCR8, OCR11-OCR17, OCR19, OCR21 and OCR24; postgraduate research support comprising
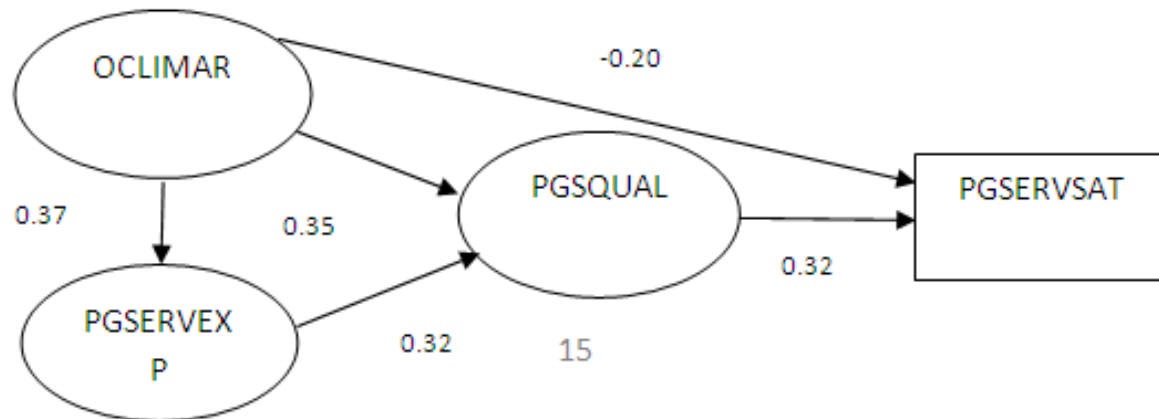
Figure 2. Conceptual model of PG service experience.

Table 4. Regression estimates of structural equation model.

Items	Estimate	S.E	C.R	P	Decision
SERVEXP←---OCLIMAR	0.37	0.07	5.12	0.000	Accept P2
PGSQUAL←---PGSERVEXP	0.32	0.11	3.10	0.003	Accept P4
PGSQUAL←---OCLIMAR	0.35	0.09	3.85	0.000	Accept P1
PGSERVSAT←---PGSQUAL	0.32	0.16	2.02	0.044	Accept P5
PGSERVSAT←---OCLIMAR	-0.20	0.16	-1.30	0.195	Reject P3

items OCR2, OCR7, OCR9, OCR18, OCR20 and OCR22-OCR23; and postgraduate information comprising items OCR3-OCR6, produced Cronbach's alpha values of 0.954; 0.894 and 0.884, respectively.

Results of structural equation modeling

The empirical data was fitted to the conceptual model (Figure 1) as a structural equation model using Amos version 19 (Byrne, 2010). The chi-square test statistic of 40.877 with a p-value of 0.00 indicated that the data did not fit the model well (Schumacker and Lomax, 2004; Byrne, 2010). The model was then revised to remove any proposed association between the PG students overall service experience (PGSERVEXP) and overall service satisfaction (PGSERVSAT). Thus P 6 could not be empirically validated.

The revised model (Figure 2) produced a chi-square test statistic of 0.454 and a p-value = 0.501, revealing that the data fitted the revised conceptual model. The path diagram (Figure 2) reflects the parameter estimates.

The regression estimates reflected in Table 4 reveal significant relationships at the 5% significance level between the PG research climate (OCLIMAR) and the overall PG service experience (PGSERVEXP) and between OCLIMAR and PG service quality (PGSQUAL).

The other significant relationship exists between the PGSQUAL and PGSERVSAT, and PGSQUAL and SERVEXP.

Although the relationship between OCLIMAR and SERVSAT is insignificant, considering that OCLIMAR is positively associated with PGSQUAL and, PGSQUAL is associated with SERVSAT, it can be deduced that OCLIMAR is indirectly associated with SERVSAT. However it must be stressed that the initial and revised models were checked for these two relationships but none were found to be significant at the 5% level.

The findings with respect to the PG research service encounter in some respects, confirm what is applicable to other service organizations as highlighted in the literature. For example, Le Blanc and Nguyen (1997) also argued that the service climate focuses service employee effort and competency on delivering service, which in turn yields positive experiences for customers as well as positive customer perceptions of service quality. Dietz et al. (2004) also asserted that when excellent service is an important theme in an organization, a positive service climate exists.

Researchers such as Hoisington and Naumann (2003), Carillat et al. (2009) asserted that service quality leads to customer satisfaction and behavioural intentions. In this study, with respect to PG research students, it also became evident that service quality is associated with

service satisfaction.

CONCLUSION AND RECOMMENDATIONS

Quality assurance of postgraduate (PG) education is becoming increasingly important and worldwide there is a push to encourage universities to be more accountable for PG learning. In addition to academic (external) audits, internal PG service experience and satisfaction surveys can also serve as appropriate quality assurance processes.

In summing up the PG research service experience, we must guard against falling into what Schneider and Bowen (1995: 39-56) refer to as the 'human resources trap', emphasizing only the personal contact relative to exclusion of the non-personal. We therefore need to embrace a broader definition of the service encounter to refer to anytime students come into contact with any aspect, and use that contact as one basis for judging quality. The institution has to therefore manage 'all the evidence' so as to ensure a seamless service experience for the PG research student. Since the PG research student appears twice in the service management system; as a consumer as well as part of the service delivery system, the management of the postgraduate encounter becomes extremely important. In view of the supervisors' pivotal role as was highlighted in the factor analysis of the PGSQUAL instrument, better support for supervisors would be an effective mechanism to provide better support for postgraduate research students.

It must be emphasized that the rationale for conducting this and similar research is 'improvement' , which is sometime referred to as 'closing the quality loop' (Nair et al., 2010: 554), since although many tertiary institutions around the world collect student feedback, the interconnection between the student feedback and actual institutional change is not always evident or addressed. Furthermore, the mere collection of student feedback using questionnaires does not in itself lead to improvement in teaching and learning; there should be evidence that such feedback is factored into inter-alia, staff development plans, curriculum development, assessment development, organizational climate, etc.

Student satisfaction and retention are closely linked and, student satisfaction has become an extremely important issue for universities and their management. The aim should be to try to maximize students' satisfaction with their experience whilst they are at university and minimize dissatisfaction in order to retain students as well as improve the institution's performance ratings and so aid recruitment.

LIMITATIONS AND FUTURE RESEARCH OPPORTUNITIES

The findings of this survey must be interpreted with caution if some generalization is to be made. Firstly, the study was exploratory and included a limited response from postgraduates of one HEI. A suggestion would be to repeat the study among a larger sample and also include inert-institutional data.

Ginns et al. (2009) highlight a common problem in using surveys of graduates' experience at the time of graduation as performance indicators is the lag between experience and report. This may be true for the current study as well. Thus future researchers should consider conducting the survey during the dissertation/thesis development phase and not after completion.

The conceptual model was revised to obtain better fit to the data, and this meant that the proposed relationship between the PGSERVEXP and PGSERVSAT could not be empirically assessed. This relationship with respect to PG research students should be explored since there is sufficient support in the literature.

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