*Full Length Research Paper*

# Relationship between the postgraduate research students' perception of their role, research climate and service quality

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This paper reports the results of the empirical evaluation of a theoretical model developed through an in-depth review of relevant literature which culminated in postulating that if postgraduate (PG) students are clear about their role as co-creators of the PG service and, if the research climate (OC) is supportive of research, then this will impact on their perception of PG service quality delivered by the PG research supervisor (EQUAL). The implications of the model for management of quality in postgraduate education through managing the PG service encounter, becomes apparent.

Key words: Organizational climate, postgraduate service encounter, postgraduate service quality, postgraduate student role clarity.

## INTRODUCTION

Much of the research on postgraduates are focused on the supervisor-student relationship. However, although, in the higher education (HE) sector, postgraduate students have always been expected to play an active role in the educational process (Little and Williams, 2011), it is surprising that not much relevant research has been conducted on the PG student and the PG service encounter. Furthermore, given that education is a service, and the postgraduate education environment has become increasingly competitive, postgraduate–based research has been surprisingly negligible. Furthermore, in recognizing the learners' voice as a way of enhancing the learning engagement, much of the literature seems to concern itself with the undergraduate (UG) student and his or her role in the learning encounter.

In light of the aforementioned, this paper specifically focuses on the participatory role of the PG student in the service encounter, by drawing heavily on the services marketing literature, and proposing relationships among the role (RC) of the postgraduate (PG) student, the research (organizational) climate (OC) and postgraduate service quality, specifically with reference to the quality delivered by the PG research supervisor (EQUAL).

## The service co-creation role of the postgraduate (PG) student

Angell et al. (2008) asserted that, given higher education provision is a service, it is understandable for higher education (HE) providers to adopt a more "customer- led" approach. Furthermore, despite the fact that, there have being different views (Albanese, 1999), the notion of the student as consumer has long been accepted across countries (Little and Williams, 2011). However, customer participation is not new and various services marketing theorists and researchers, inter-alia, (Lovelock and Young, 1979; Mills and Morris, 1986; Kelley et al., 1990; Halvarsson and Lohela, 2009) have researched it over the years.

According to McCulloch (2009), a more appropriate metaphor to characterize the relationship of the student to the higher education provider is one of co-production, since students, lecturers and others who support the

learning are viewed as being engaged in a cooperative enterprise, focused on production, dissemination and application of knowledge. Lengnick-Hall and Sanders (1997) argued that in educational systems, especially PG research, students have no choice but to become co-producers, since they are inherently responsible for the learning work that takes place.

As co-producers, if customers are viewed as partial employees (Kelley et al., 1990), then Zeithaml and Bitner (2000) asserted that the 'partial employee' can contribute to the organization's productive capacity. Although, there are positive outcomes linked to customer participation, Zeithaml and Bitner (2000) cautioned that customer participation raises several issues for the organization. Govender (1998) as cited by Kotze and du Plessis (2003) highlights one such issue, namely, a level of uncertainty in the service delivery process due to customer participation, since the service organization does not have the same level of control over customers as it would (and does) over the employees.

Claycomb et al. (2001) defined three different levels of customer participation, namely, high, moderate and low. By citing several researchers, Kotze and du Plessis (2003) asserted that there is adequate support for the view that educational services fall into the category of 'high' customer participation. The PG students' participation can be defined as 'high' since they work in partnership with the service organization to help assess the need for the service, customize the design and delivery of the service, and produce a portion or all of the service (thesis/dissertation) themselves. Furthermore, Dann (2008) cautions that PG research supervision is a complex service encounter drawing on the pedagogical structures of higher education and the interpersonal dynamics of highly customized service delivery, since within this structure there is a duality of responsibility for the successful completion of the research project between the PG student and supervisor.

Some researchers (Bitner et al., 1997) who examined customer satisfaction with service experiences asserted that, although, many services customers themselves have vital roles to play in creating service outcomes and ultimately enhancing or detracting from their own satisfaction and value received, little research has been conducted on the customer's role. This assertion holds true for higher education (HE), more specifically with respect to PG students.

Although, the service customer has been described as a partial employee or quasi employee, co-producer and co-creator (Lengnick-Hall and Sanders, 1997), for the purpose of this research, the PG student is described as a co-creator. The rationale for this is that the output of a PG service encounter is the production of a graduate with a masters dissertation or doctorate thesis, both of which are 'contributions' to knowledge. The PG student works under the guidance of a research supervisor in order to produce (create) this knowledge. Given the aforementioned, the key decision then is the extent to which the PG students' co-creation roles are deliberately designed and managed to enhance high quality outcomes.

In order to manage PG service quality, it is important to understand what happens during the PG service encounter and what affects the customer's perception of them. Furthermore, since PG service encounters do not take place in a vacuum, but in a specific milieu, it is important also to understand the relationship (and perhaps impact) of the service/research 'climate' of the service organization on the service encounter. Given the aforementioned, especially the implied importance of the organizational climate (OC), in the next section the literature reviewed will focus on the concept OC so as to properly locate its relevance in this conceptual study.

## The postgraduate research climate and service quality

Schenider and Bowen (1995) asserted that, since the interaction which takes place between the organization, its employees and customers during the service encounter (in many cases) cannot be clearly specified beforehand, the climate of the organization (OC) offers an ad hoc means of specifying the activities which should be carried out.

Over the years, several explanations have emerged about the dimensions that constitute the OC construct and Tyagi (1982) 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 identification, and management concerns and awareness. Since OCs can be supportive or non-supportive of quality customer service, Rogg et al. (2001) argued that everything the organization can do to enhance a service climate, from selection and training to reward systems and leadership style, must be invoked to guide employee behavior and service excellence.

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. Thus, 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.

Due to occupying the position of 'boundary spanners' service employees are sensitive to service-related practices and procedures and their impact on the service that customers receive (Schneider et al., 1980 as cited by Dietz et al., 2004). For the service customer the service employee is the 'organization,' and through contact with the service employee, opportunities are created for customers to pick up cues from employees with regard to the service climate which manifests itself in employee behaviours.

Researchers such as Schneider et al. (1994) asserted that employees (and customers) observe what happens to them (and around them), and draw conclusions about the organization's priorities. These perceptions provide employees with 'direction' and 'orientation' about where they should focus on their energies and competencies. Since service quality is in the delivery, it is the interaction between the service deliverer and the consumer which determines service quality for the consumer. Ancarni et al. (2011) 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.

Salanova and Peiro (2005) cite Schneider et al. (1998), stress that the service climate focuses service employees' 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 and Peiro (2005) are akin to the service climate (OC) and the employee performance is akin to EQUAL.

Although, in the post graduate HE environment, several service employees (academic and administrative) may influence the PG 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 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 their behavior. Thus, the research climate which manifests itself through the OC will depend on the fundamental support provided by higher education institutions (HEIs) through resources, training, managerial practices and assistance required to perform effectively (Schneider et al., 1998). Dietz et al. (2004) asserted that when employees (and customers) 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 the 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 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 students' perception and impact thereof on service performance (quality of supervision and the students' experience) has not received much attention by researchers. In order to explore this further, it is postulated that:

$P_1$: The OC as perceived by the postgraduate students' (PGSs) is associated with their perception of the postgraduate service quality delivered by the PG research supervisor (EQUAL).
$P_2$: The PG research students' perception of their role (RC) is associated with their perception of the research (organizational) climate (OC).

Since service quality depends on service performance, and performance alludes to specific roles, the role of the PG student (service customer) in the service encounter, more specifically how it may impact on the research supervisors' service performance will be explored.

## Postgraduate students' role perception and employee service quality

Since in educational systems, especially postgraduate research, students have no choice but to become co-producers because they are inherently responsible for the learning that takes place, some researchers (Lengnick-Hall and Sanders, 1997) have argued that the key decision then is the extent to which student co-production roles are deliberately designed and managed to enhance high quality outcomes. In the preparation of a dissertation or thesis, the student is required to actively participate and perform a 'multiplicity' of roles.

Govender (1998) cites Larson and Bowen (1990) contend that, the more activities the customer tends to contribute, the higher the 'input uncertainty" because the organization has incomplete information about what the customer will do before the service encounter. This
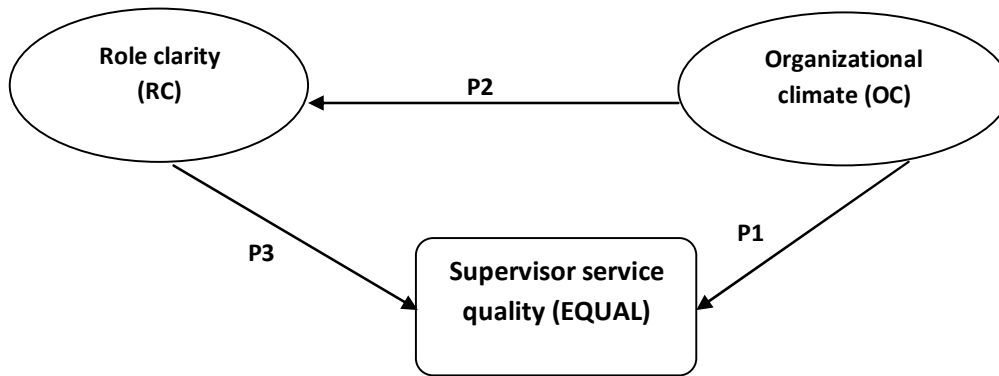
**Figure 1.** Proposed organizational climate-role-employee service quality model.

uncertainty could stem from insufficient ability, information or lack of role clarity. This implies that the service customer, in this case the PG research student should have proper 'orientation' as disorientation can result in the service employee (research supervisor) spending more time answering directional questions rather than providing the core service, namely supervision. This reasoning can be extended to the weak PG student who for example may have a poor command of the English language and thus, depends on the supervisor to correct the grammar and other writing style aspects. According to Hsieh and Yen (2005) this could result in the service providers' job stress which may by deduction be transferred to service performance on the part of the employee (EQUAL) and result in a poor service experience for the customer. Chebat and Kollias (2000) cite Schneider (1980) and Shamir (1980), revealed that employee's role stress is a major contributor to their inability to deliver good service. Given the above brief discussion, it is proposed that:

$P_3$: The PG students' role perception (RC) is associated with their perception of the EQUAL.

The aforementioned (P1-P3) propositions are depicted schematically (Figure 1) as a conceptual model which reflects possible relationships among OC-RC-EQUAL as they pertain to the postgraduate research environment. The conceptual model (Figure 1) was evaluated by conducting a survey among a cohort of masters and doctorates who graduated in 2011 from a large research university.

## RESEARCH DESIGN

### Sample

816 master's and doctorate candidates who graduated in 2011 comprised the population which was targeted. The name list and e-mail contact details of the graduates was obtained from the university graduation office. Two approaches were used to reach the sample. The electronic version of the questionnaire, using QuestionPro (www.QuestionPro.com, 2010) was sent via an e-mail to all graduates, and this was supported by hardcopies of the questionnaire which were distributed together with the degree certificates on the day of graduation. Graduates were asked to return the completed questionnaire or complete the electronic survey within a month from the date of the graduation.

### Research instruments

Considering that this study draws heavily on the services marketing literature, the tools have been primarily developed through adaptation and refinement of questionnaires from a similar body of literature.

### Research climate: OCLIMAR

To ascertain the PG students' perception of the research climate the OCLIMAR instrument was developed by adapting Govender's (1998) organizational climate (OC) questionnaire which was based on the work of previous researchers (Kelley, 1978; Parasuraman et al., 1985). A further refinement entailed incorporating certain relevant aspects of the postgraduate research experience PREQ questionnaire (Ginns et al., 2009), which resulted in a 24 item OCLIMAR questionnaire. The respondents were requested to respond to each of the 24 statements in terms of their perception of the importance the university placed upon various characteristics of the research service by indicating their agreement or disagreement with each statement on a Likert scale, where 1 = Strongly Disagree, 2 = Disagree, 3 = Neither Disagree nor Agree (Neutral), 4 = Agree, and 5 = Strongly Agree.

### Research supervisors' service quality: EQUAL

EQUAL was measured through development of a 22-item instrument by adapting the SERVQUAL (Parasuraman et al., 1988) instrument and, extracting only those questions pertaining to the service employee and, by considering certain aspects of the PREQ and student research experience questionnaire SREQ (Ginns et al., 2009).

Respondents were required with respect to the service delivered by the research supervisor, to indicate their agreement or disagreement with each of the 22 statements on a Likert scale, where 1= Strongly disagree, 2 = Disagree, 3 = Neither disagree nor Agree, 4 = Agree, and 5 = Strongly Agree.

**Table 1.** Determinants of role clarity of PG students.

| RC1 | Your functions (role) and responsibilities as a PG student | 1 2 3 4 5 |
|-----|-----|-----|
| RC2 | How to comply with the various administrative requirements pertaining to PG students | 1 2 3 4 5 |
| RC3 | How to plan and organize your research | 1 2 3 4 5 |
| RC4 | Where in the institution to get assistance relating to your PG studies | 1 2 3 4 5 |
| RC5 | The rules and regulations governing your registration as a PG student | 1 2 3 4 5 |
| RC6 | What your supervisor expected of you as a PG student | 1 2 3 4 5 |
| RC7 | The autonomy you have in making decisions related to your research | 1 2 3 4 5 |
| RC8 | What role your supervisor would perform in the PG process | 1 2 3 4 5 |

**Table 2.** Cronbach's alpha values.

| Item | No. of item | Cronbach's alpha |
|-----|-----|-----|
| Research supervisors' service performance (EQUAL) | 22 | 0.969 |
| Organizational/research climate (OCLIMAR) | 24 | 0.965 |
| Role Clarity (RC) | 8 | 0.918 |

**Postgraduate students' role clarity: RC**

By adapting the role ambiguity/role clarity scale of Chonko et al. (1986) an 8-item RC (Table 1) measurement instrument was developed. Respondents were requested to indicate with reference to their role as PG students, how certain they were about each statement (Table 1) on a Likert scale where 1 = Completely uncertain, 2 = Uncertain, 3 = Neither certain nor Uncertain, 4 = Certain, and 5 = Completely certain.

**EMPIRICAL FINDINGS**

**Response rate**

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

Although, 221 graduates viewed the questionnaire, the final response in terms of those who completed the questionnaire was 40%. The sample comprised 58% black graduates, 23.2% white graduates followed by 16.1% Indian graduates. The majority (35.1%) of the graduates completed the course-work masters and a full research masters (37.7%) degree.

The breakdown of per faculty from which the graduates were represented was Human Development and Social Studies (27.4%), Management Studies (19.5%), Science and Agriculture (24.4%).

The faculties that were least represented were Education (11%), Law (9.9%) and the Medical School (7.8%).

**Reliability of the research instruments**

Although, Coakes and Steed (2003) stated that there are a number of different reliability coefficients, one of the most commonly used is the Cronbach's alpha, which is based on the average correlation of items within a test if the items are standardized, and if the items are not standardized, it is based on the average covariance among the items. Table 2, reflects the Cronbach's alpha values which validate the use of the research instruments revealing a good internal consistency, since the Cronbach's alpha values exceed 0.7 and are close to 1, which is normally regarded as a reliable value.

**Validity of the research instruments**

Factor analysis was conducted using the Principal Components Method with varimax rotation to determine the reliability of the items comprising the EQUAL, OCLIMAR and RC research instruments. The outcome of this process with respect to the EQUAL instrument reflected in Table 3 reveals that, the cumulative variance (76.158%) is being explained by three factors and all of these factors have Eigen values exceeding 1 (Coakes and Steed, 2003).

Table 3 was re-examined to ascertain which questions were not loading at all on the factors and could hence be eliminated, and factor analysis was re-run. Although, most literature suggests that a factor loading of 0.3 or greater can be considered to be significant (Kline, 1994), given the large number of items in the EQUAL instrument, it was advisable to adopt the principle that factor loadings of 0.4 or higher as being significant, otherwise the number of items in the data set will not be reduced and the key reason for conducting a factor analysis, which is to reduce the number of items to a comprehensible set of items will have been defeated. The outcome of the process is reflected in Table 4.

**Table 3.** Factor analysis –EQUAL.

| Component | Initial eigenvalues | | | Extraction sums of squared loadings | | | Rotation sums of squared loadings | | |
|---|---|---|---|---|---|---|---|---|---|
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| EQ1 | 13.818 | 62.811 | 62.811 | 13.818 | 62.811 | 62.811 | 8.231 | 37.416 | 37.416 |
| EQ2 | 1.667 | 7.579 | 70.39 | 1.667 | 7.579 | 70.39 | 6.001 | 27.276 | 64.692 |
| EQ3 | 1.269 | 5.768 | 76.158 | 1.269 | 5.768 | 76.158 | 2.523 | 11.467 | 76.158 |
| EQ4 | 0.715 | 3.249 | 79.407 | | | | | | |
| EQ5 | 0.656 | 2.984 | 82.391 | | | | | | |
| EQ6 | 0.611 | 2.776 | 85.167 | | | | | | |
| EQ7 | 0.502 | 2.283 | 87.45 | | | | | | |
| EQ8 | 0.446 | 2.029 | 89.479 | | | | | | |
| EQ9 | 0.425 | 1.93 | 91.409 | | | | | | |
| EQ10 | 0.3 | 1.364 | 92.773 | | | | | | |
| EQ11 | 0.28 | 1.271 | 94.043 | | | | | | |
| EQ12 | 0.22 | 1 | 95.044 | | | | | | |
| EQ13 | 0.206 | 0.935 | 95.979 | | | | | | |
| EQ14 | 0.195 | 0.887 | 96.866 | | | | | | |
| EQ15 | 0.159 | 0.724 | 97.59 | | | | | | |
| EQ16 | 0.125 | 0.567 | 98.157 | | | | | | |
| EQ17 | 0.108 | 0.491 | 98.648 | | | | | | |
| EQ18 | 0.077 | 0.349 | 98.997 | | | | | | |
| EQ19 | 0.068 | 0.31 | 99.307 | | | | | | |
| EQ20 | 0.064 | 0.291 | 99.598 | | | | | | |
| EQ21 | 0.049 | 0.223 | 99.821 | | | | | | |
| EQ22 | 0.039 | 0.179 | 100 | | | | | | |

The three factors identified (Table 4) were labeled as Service Orientation comprising items EQ1-EQ11 and EQ17, Augmented Efforts comprising EQ12-EQ16, EQ18-EQ19 and EQ22, and Role Clarity comprising items EQ 20-EQ22, produced Cronbach's alpha values of 0.969, 0.932 and 0.763 respectively, which revealed that these three factors had good internal consistency amongst the variables.

## Factor analysis: OCLIMAR

Factor analysis was carried out on the research climate (OCLIMAR) instrument which comprises of 24 questions and the outcome is reported in Table 5.

Table 6 shows that there are three factors with eigen values above 1, and these three factors account for a cumulative variation of 67.48%. The rotated loadings reflected in Table 6 show that all the items loaded on three factors, with loadings of 0.4. This is significant since none of the questions had to be eliminated (Kline, 1994; Coakes and Steed, 2003).

The 24 items of the OCLIMAR instrument which also loaded on three factors named as Postgraduate Service Orientation comprising items OC1, OC8, OC11-OC17,

OC19, OC21 and OC24; Postgraduate Research Support comprising items OC2, OC7, OC9, OC18, OC20 and OC22-OC23; and Postgraduate Information comprising items OC3-OC6, produced Cronbach's alpha values of 0.954; 0.894 and 0.884, respectively.

With reference to the role perceptions questionnaire, the researchers did not undertake a factor analysis, since it would have violated one of the principles which underpin factor analysis, namely that the research instrument should have a minimum of 10 items (Coaks and Steed, 2003).

## Results of model testing

The conceptual model (Figure 1) was fitted to the data using structural equation modeling in AMOS (version 19). The results reflected in Table 7 reveal the chi-square test statistic to be 5.062 with a p-value of 0.06, indicating a good fit of the model. This is further confirmed by the fact that the ratio of the chi-square test statistic to its degrees of freedom is close to 5 (Jöreskog, 1969).

It can be concluded from Table 7 that the research climate (OC) as perceived by the PG research students significantly influences their role clarity (RC). Hence, we

**Table 4.** Rotated factor loadings: EQUAL.

| Item | | Component | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| Gave good guidance on my literature search | EQ8 | 0.85 | 0.283 | 0.059 |
| Provided helpful (oral and written) comments on my drafts | EQ5 | 0.846 | 0.209 | 0 |
| Was always courteous and willing to help | EQ9 | 0.831 | 0.323 | 0.19 |
| Gave good guidance in topic selection and refinement (development of my research proposal) | EQ4 | 0.818 | 0.336 | 0.059 |
| Was available whenever I needed him/her | EQ1 | 0.764 | 0.24 | 0.374 |
| Provided regular feedback on my progress | EQ6 | 0.76 | 0.388 | 0.17 |
| Provided timeous/prompt comments on my drafts | EQ7 | 0.754 | 0.406 | 0.157 |
| Was never too busy to respond to my requests/enquiries | EQ11 | 0.751 | 0.27 | 0.408 |
| Was sincere in solving my problems/responding to my queries | EQ10 | 0.74 | 0.324 | 0.355 |
| Provided additional information relevant to my research topic | EQ3 | 0.662 | 0.389 | 0.23 |
| Made every effort to understand the difficulties I faced as a PG student | EQ2 | 0.636 | 0.516 | 0.319 |
| Helped me organize myself to undertake the PG studies | EQ17 | 0.609 | 0.602 | 0.259 |
| Made me aware of funding sources available for research | EQ13 | 0.22 | 0.853 | 0.184 |
| Encouraged and supported me to present papers at conferences | EQ18 | 0.299 | 0.841 | -0.04 |
| Encouraged me to publish my research | EQ16 | 0.232 | 0.822 | 0.111 |
| Made me aware of conferences related to my research | EQ15 | 0.377 | 0.79 | 0.154 |
| Was able to integrate me into the research culture of the school/department/university | EQ14 | 0.544 | 0.623 | 0.157 |
| Clearly explained /outlined what is expected of me as a PG student | EQ19 | 0.505 | 0.599 | 0.385 |
| Encouraged me to undertake further PG studies | EQ22 | 0.35 | 0.599 | 0.413 |
| Was able to provide guidance on matters related to my registration and compliance with university rules | EQ12 | 0.403 | 0.582 | 0.327 |
| Made me sign a supervision contract | EQ20 | 0.064 | 0.065 | 0.872 |
| Explained what support/service I could expect from him/her | EQ21 | 0.453 | 0.398 | 0.7 |

conclude that the proposed association (P2) as conceptualized is true.

Previous researchers, inter-ala, Ostroff (1993) who examined the relationship between OC and RC approached the study from the perspective of the service employee, however, considering that the service customer is viewed as quasi employee (Kelley et al., 1992), it can be deduced that the findings are relevant, although the research context is different.

The results also show that the research climate (OC) significantly influences the employee service quality(EQUAL) as perceived by the PG students. We thus infer that with respect to the conceptual model, P1 is also true. The aforementioned inference also held true in previous research (Soudek, 1983; Joseph and Joseph, 1997; Davidson, 2003; Burton et al., 2004; Patterson et al., 2004; Zhang, 2010); Raza, 2010; Vianen et al., 2011). However, what is different is that this relationship was never explored in the PG context and moreover, the aforementioned studies refer to the overall service quality rather than distilling the service performance by the service employee.

However, the results show that role clarity (RC) does not significantly influence EQUAL, implying that the PG students' role perception (RC) is not associated with their perception of EQUAL, thus not supporting (P3). Previous studies (Bitner et al., 1997) alluded to associations between the service customers' role perception and their service experiences; however no research had been conducted to ascertain the association with employee service quality. Furthermore, most previous studies (Lysonski, 1982; Mels, 1995; Tait, 1996 as cited by Govender, 1998; Chebat and Kollias, 2000) focused on the role of the service employee and service performance and indirectly on service quality.

## CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS FOR FUTURE RESEARCH

This exploratory study confirms the theoretical propositions with regard to the relationship between the PG students' perception of the research climate and their role clarity and between the research climate and employee service quality. In view of this finding, it is important for research universities (HEIs) to ensure that the research climate is positive, that is, supportive of research since this is likely to filter through to the service delivery and perceptions of research service quality, specifically the service offered by the research supervisor. Despite service quality being a multifaceted construct, the centrality of the role of the research supervisor and PG student has to be highlighted.

The study however also could not confirm any

**Table 5.** Factor analysis-OCLIMAR.

| Component | Initial eigenvalues | | | Extraction sums of squared loadings | | | Rotation sums of squared loadings | | |
|---|---|---|---|---|---|---|---|---|---|
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| OC1 | 13.517 | 56.321 | 56.321 | 13.517 | 56.321 | 56.321 | 7.663 | 31.93 | 31.93 |
| OC2 | 1.556 | 6.483 | 62.804 | 1.556 | 6.483 | 62.804 | 4.831 | 20.128 | 52.058 |
| OC3 | 1.122 | 4.676 | 67.481 | 1.122 | 4.676 | 67.481 | 3.701 | 15.422 | 67.481 |
| OC4 | 0.868 | 3.617 | 71.097 | | | | | | |
| OC5 | 0.843 | 3.512 | 74.609 | | | | | | |
| OC6 | 0.746 | 3.11 | 77.719 | | | | | | |
| OC7 | 0.643 | 2.677 | 80.397 | | | | | | |
| OC8 | 0.575 | 2.397 | 82.794 | | | | | | |
| OC9 | 0.523 | 2.179 | 84.973 | | | | | | |
| OC10 | 0.448 | 1.866 | 86.84 | | | | | | |
| OC11 | 0.416 | 1.734 | 88.574 | | | | | | |
| OC12 | 0.375 | 1.564 | 90.138 | | | | | | |
| OC13 | 0.347 | 1.446 | 91.584 | | | | | | |
| OC14 | 0.303 | 1.264 | 92.849 | | | | | | |
| OC15 | 0.282 | 1.174 | 94.023 | | | | | | |
| OC16 | 0.267 | 1.112 | 95.135 | | | | | | |
| OC17 | 0.224 | 0.934 | 96.068 | | | | | | |
| OC18 | 0.199 | 0.829 | 96.897 | | | | | | |
| OC19 | 0.173 | 0.719 | 97.616 | | | | | | |
| OC20 | 0.162 | 0.673 | 98.289 | | | | | | |
| OC21 | 0.127 | 0.528 | 98.817 | | | | | | |
| OC22 | 0.108 | 0.452 | 99.269 | | | | | | |
| OC23 | 0.104 | 0.432 | 99.701 | | | | | | |
| OC24 | 0.072 | 0.299 | 100 | | | | | | |

**Table 6.** Rotated factor loadings-OCLIMAR.

| Item | | Component | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| PG students are assured of consistent and prompt service and support | OC13 | 0.833 | 0.231 | 0.217 |
| PG students can depend on the service provided | OC12 | 0.822 | 0.377 | 0.225 |
| PG students' best interest is always at heart | OC10 | 0.784 | 0.38 | 0.264 |
| PG students understand the service being provided | OC1 | 0.76 | 0.142 | 0.333 |
| Staff are properly trained to deal with PG matters | OC11 | 0.751 | 0.381 | 0.208 |
| A reputation for good PG research is emphasized | OC16 | 0.738 | 0.295 | 0.109 |
| The research ambience in the department/school stimulates PG research | OC15 | 0.7 | 0.316 | 0.354 |
| Good PG seminar programmes are provided | OC14 | 0.694 | 0.185 | 0.295 |
| Individual PG student attention is stressed | OC17 | 0.683 | 0.364 | 0.251 |
| Staff are friendly and polite to PG students at all times | OC8 | 0.675 | 0.156 | 0.165 |
| PG students are free to discuss their research needs | OC19 | 0.57 | 0.485 | 0.152 |
| PG students are provided with opportunities to become integrated into the broader department/school/university research culture | OC21 | 0.5 | 0.452 | 0.361 |
| PG students are encouraged to undertake further PG studies | OC24 | 0.462 | 0.433 | 0.196 |
| Opportunities are provided for social contact with other PG students | OC9 | 0.252 | 0.803 | 0.053 |
| Operating hours are convenient for PG students | OC7 | 0.288 | 0.763 | 0.241 |
| PG students have access to up to date computing facilities and services | OC22 | 0.174 | 0.716 | 0.349 |
| PG students have access to good technical (research) support | OC18 | 0.477 | 0.627 | 0.265 |

**Table 6.** Contd.

| | | | | |
|---|---|---|---|---|
| PG students have access to suitable working space | OC2 | 0.336 | 0.597 | 0.467 |
| PG students receive confidential service | OC20 | 0.3 | 0.512 | 0.379 |
| PG students develop an understanding of the standard of work expected | OC23 | 0.435 | 0.439 | 0.372 |
| PG students are informed beforehand of the costs associated with their studies | OC4 | 0.207 | 0.136 | 0.823 |
| PG students are made aware of appropriate financial support for research activities | OC3 | 0.208 | 0.283 | 0.813 |
| PG students are informed about the various research support services available | OC6 | 0.463 | 0.385 | 0.675 |
| Promises to PG students are honoured | OC5 | 0.463 | 0.362 | 0.573 |

**Table 7.** Results of structural equation modeling.

| | | Estimate | S.E. | C.R. | P |
|---|---|---|---|---|---|
| RC | OC | 0.587 | 0.097 | 6.059 | 0.000 |
| EQUAL | OC | -0.611 | 0.150 | -4.074 | 0.000 |
| EQUAL | RC | 1.000 | | | |

association between the PG student's role perception and their perception of the EQUAL which is contrary to what the literature suggested. For example, some researchers, Hsieh and Yen (2005) asserted that lack of role clarity on the part of the service employee could result in the service providers' job stress which may by deduction be transferred to service performance on the part of the employee and result in a poor service experience for the customer.

However, it must be remembered that only one aspect of the overall service quality was assessed. This relationship may need to be explored further, and also assessing the overall service quality instead of only EQUAL. Furthermore, the conceptual model could be verified and further confirmation obtained by conducting a similar study among a larger sample of postgraduates.

A further possible limitation of this study could be the fact that the study was conducted at the end and not during the PG encounter (study). It is possible that the PG students could not relate to or remember some of the experiences.

Despite the limitations sketched above, the findings are important and could be used by HEIs to better manage the PG service encounter and the PG students' service experience.

**REFERENCES**

Albanese M (1999). Students are not customers: A better model for medical education. Acad. Med., 74(11): 1172-1186.

Ancarni A, Di Mauro C, Giammanco MD (2009). Patient satisfaction, managers' climate orientation and organizational climate. Int. J. Prod. Ops. Manage., 31(3): 224-250.

Angell RJ, Heffernan TW, Megicks P (2008). Service quality in postgraduate education. Qual. Assur. Higher Educ. 16(3): 236-254.

Bitner MJ, Faranda WT, Hubbbert AR, Zeithaml VA (1997). Customer contributions and roles in service delivery. Int. J. Serv. Ind. Manag. 8(3): 193-205.

Burton RM, Lauridsen J, Obel B (2004). The impact of organizational climate and strategic fit on firm performance. Hum. Res. Manage. 43(1): 67-82.

Chebat JC, Kollias P (2000). The impact of empowerment on customer contact employees' roles in service organizations. J. Serv. Res., 3(1): 66-81.

Claycomb C, Lengnick-Hall CA, Inks LW (2001). The customer as a productive source: a pilot study and strategic implications. J. Bus. Strateg., 18(1): 47-69.

Coakes S,Steed L (2003). SPSS analysis without anguish. Version 11.0 for Windows.

Cooper-Thomas HD, Anderson N (2006). Organizational socialization. a new theoretical model and recommendations for future research and HRM practices in organizations. J. Man. Psychol., 21(5): 492-516.

Dann S (2008). Applying services marketing principles to postgraduate supervision. Qual. Assur. Higher Educ. 16(4): 333-346.

Davidson, MCG (2003). Does organizational climate add to service quality in hotels? Int. J. Cont. Hosp. Manage., 15(4): 206-215.

Dietz J, Pugh SD, Wiley JW (2004). Service climate effects on consumer attitudes: an examination of boundary conditions. Acad. Manage. J., 47(1): 81-92.

Govender KK (1998). Managing service quality by managing the service encounter: the effects of organizational socialization strategies. Unpublished PhD thesis, University of Cape Town.

Halvarsson Y, Lohela MI (2009). Students as co-producers of education: cases from student participation in the educational programmes of a Swedish university. Unpublished Masters Thesis, Lulea University of Technology.

Hsieh AT, Yen CH (2005). The effect of customer participation on service providers' on stress. Serv. Ind. J. 25(7): 891-905.

Jöreskog K (1969). A general approach to confirmatory maximum likelihood factor analysis. Psychometrika, 34: 183-202.

Joseph M, Joseph B. (1997). Service quality in education: a student perspective. Qual. Ass. in Ed. 5(1): 15-21.

Kelley SW, Donnelly JH, Skinner SJ (1990). Customer participation in service production and delivery. J. Retail., 66(3): 315-335.

Kelley SW, Skinner SJ, Donnelly JH (1992). Organizational socialization of service customers. J. Bus. Res., 25: 197-214.

Kline T (1994). Psychological Testing. London: SAGE Publications.

Kotze TG, du Plessis PJ (2003). Students as 'co-producers' of education: a proposed model of student socialization and participation at tertiary institutions. Qual. Assur. Educ., 11(4):186-201.

Lengnick-Hall CA, Sanders M (1997). Designing effective learning systems for management education: student roles, requisite variety, and practicing what we teach. Acad. Manage. J., 40(6): 1334-1363.

Little B, Williams R (2011). Students' role in maintaining quality and enhancing learning: is there a tension? Qual. Higher Educ., 16(2): 115-127.

McCulloch A (2009). The student as co-producer: learning from public administration about the student-university relationship. Stud. Higher Educ., 34(2): 171-183.

Ostroff C (1993). The effects of climate and personal influences on individual behaviour and attitudes in organizations. Organ. Behav. Hum. Decis. Making, 71: 492-499.

Patterson NG, Warr P, West MA (2004). Organizational climate and company productivity: the role of employee affect and employee level. J. Occup. Organ. Psychol., 77(2): 193-216.

Raza SA (2010). Impact of organizational climate on performance of

college teachers in Punjab. J. College Teach. Learn. 7(10): 47-51.

Rogg KL, Schmidt DB, Shull C, Schmitt N. (2001). Human resources practices, organizational climate, and customer satisfaction. J. Man. 27: 431-449.

Salanova M, Augt S, Peiro JM (2005). Linking organizational resources and work engagement to employee performance and customer loyalty: the mediation of service climate. J. Appl. Psychol., 90(6): 1217-1227.

Schneider B, Gunnarson SK, Niles-Jolley K (1994). Creating the climate and culture of services. Organ. Dyn, 23(1): 17-29.

Schneider B, Bowen D (1995). Winning the service game, Boston: Harvard Business School Press.

Schneider B, White SS, Paul MC (1998). Linking service climate perceptions of service quality: test of a causal model. J. Appl. Psychol., 83(20): 150-163.

Soudek M (1983). Organizational climate and professional behaviour of academic librarians. J. Acad. Librariansh., 8(6): 334-338.

Vianen AEM, Pater IE, Bechtold MN, Evers A (2011). The strength and quality of climate perceptions. J. Man. Psych., 26(1): 77-92.

Zeithaml VA, Bitner MJ (2000). Services marketing: integrating customer focus across the firm, 2nd ed., McGraw-Hill, Boston, MA.

Zhang J (2010). Organizational climate and its effect on organizational variables: an empirical study. Int. J. Psychol. Stud., 2(2): 189-201.