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THE IMPACT OF SELF-SERVICE TECHNOLOGIES ON PERCEPTIONS OF CUSTOMER SERVICE QUALITY IN A BUSINESS SCHOOL IN SOUTH AFRICA

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A research report submitted to the Faculty of Commerce, Law and Management, University of the Witwatersrand, in partial fulfilment of the requirements for the degree of Master of Management in the field of Strategic Marketing

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ABSTRACT

There is increased usage of self-service technology in efforts to deliver superior service quality in business schools. This transition from face-to-face interaction has led to both satisfaction and dissatisfaction with service quality delivered. This study sought to ascertain the impact self-service technologies have on the perception of service quality (Servqual) dimensions of reliability, tangibility, assurance, responsiveness and empathy.

A survey research instrument based on an adapted Servqual questionnaire that was self-administered was employed. Convenience sampling was utilised on the Wits Business School campus, with 210 students' views captured. Then, the data was analysed using GAP analysis and descriptive statistics extrapolated from the data.

The results of the study indicate that a transition to self-service portals does not lead to customers having a positive view of all the service quality dimensions as most customers were neutral in their perceptions. Students, therefore, need to have both self-service technologies and walk-in centres for face-to-face interaction.

The study contributes to the ever-increasing knowledge on the usage of self-service technology in higher education in emerging markets. While there are significant shifts towards usage of the portals in business schools, there is a need to control the pace of change and avoid drastic adoption without other options as it may not lead to positive customer perceptions.

The study recommends that transition not be drastic, that focus be on user-friendliness of the portals, that there be increased use of interactive technologies such as chatbots to increase responsiveness as well as a provision of people to engage with when there is need for escalation of issues aiding service recovery.

DECLARATION

I, Lawrence Thulani Dube, declare that this research report is my own work except as indicated in the references and acknowledgements. It is submitted in partial fulfilment of the requirements for the degree of Master of Management in the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in this or any other university.

Lawrence Thulani Dube

Signed at Parktown

On the 31 day of May 2019

DEDICATION

The dissertation is dedicated to my late parents Joseph and Nanzani Dube, my forever supportive wife Bridget, my kids Butjilo Joseph and Tjeludo Charis Dube who are a lifetime source of inspiration, strength and support.

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I acknowledge the guidance and encouragement of Dr Yvonne K Saini my Supervisor whose belief in me kept me going when I was slowing down. To the teaching staff on the Wits Business School's MM-SM programme, I am grateful for them allowing me to stand on their shoulders.

Special mention to my colleague, friend and former boss Rutendo Nxumalo whose support was dearly appreciated in the journey. Zivah Waniwa, perhaps one of the people who has always seen the academic in me and encouraged it in our walk and years of friendship.

To Wits Business School, which, as an entity, continues to produce excellence. I am proud to be part of its great alumni and, importantly, a member of staff and beneficiary of its generosity.

There is a greater drive to learn because I know there is greater one who has invested a gift, abilities and given me time. The greater one lives in me: I am thankful to my Lord and Saviour, Jesus Christ.

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CHAPTER 1: INTRODUCTION

1.1. Purpose of the study

The purpose of this study is to ascertain the impact of self-service technology on student perceptions of the quality of customer service. Nadiri, Kandampully, and Hussain (2009) assert that the discovery of student expectations and perceptions is paramount to achieving student intake and retention. In a study by Naidoo (2014), the paper recommends increased focus on technology and its usage to improve service in higher education. The need to understand if the same conceptual factors utilised in interpersonal service encounters were relevant to a technology based environment was alluded to by Bitner, Brown, and Meuter (2000). The need to understand service in various global contexts including the emerging markets is also outlined as a priority for research and this also highlighted by (Yousapronpaiboon, 2014). Several studies have been done on service quality at higher education by Doucet (2004) and Abdullah (2006b) for example but not specific to business schools, technology driven applications and orientation process of business schools. Service quality and satisfaction as a subject has recent studies by researchers such as Rana, Mahmood, Sandhu, and Kanwal (2015); this study seeks to add to the body of knowledge in this subject.

1.2. Context of the study

While focus has often been on interpersonal relationships and how they affect service moments of truths, technology, however, has changed how organisations engage customers (Meuter, Ostrom, Roundtree, & Bitner, 2000). In years past, scholars such as Fisk, Grove, and John (2012) had already begun to question the relevance of previous research in light of the internet and self-service technologies. Studies into education and higher education have increased over the years, including the application of service and quality principles to higher education. From the traditional face-to-face teaching to the much increased online learning, higher education has become fast changing (Fish & Snodgrass, 2015).

This assertion was made earlier in studies by Van Damme (2001) which noted higher education as being more and more a part of globalisation and the service industry. The presence of ranking systems has affected the way business schools set out to satisfy students (Agnew, Cameron-Agnew, Lau, & Walker, 2016). Students, therefore, are involved in a lot of pre- and post-purchase decisions making for educational services (Bennett et al., 2003). Naidoo (2014) asserted that, increasingly, marketing departments need to keep up to date with customers'-perceptions of their service quality.

With increased focus on the knowledge economy, education has become more and more important as globalisation gives students more options (Yousapronpaiboon, 2014). In South Africa, the competition for international students has seen increased intensity (Naidoo & Mensah, 2014). Information on different options is now more available, with increased technology and the internet allowing self-service technologies to be used for applications, enrolment and the possibility of blended learning. Naidoo (2011) looked at a number of constructs that essentially embody the quality of service given to education stakeholders, that is:

- Academic staff quality
- Provision of financial aid
- Safety on premises
- Quality of academic programme and their fit to the market
- Research outputs
- Facilities, venues and equipment
- Good administrations

Higher education has seen increased globalisation and marketisation. This increased usage of marketing principles to get customers has been perceived negatively in some quarters as concluded by Hemsley-Brown and Oplatka (2006). The usage of marketing principles perhaps has connotations of being profit oriented, which is not appreciated by some academics and other stakeholders. Some may view the role of universities as a social service hence should not be tainted by profit driven agendas. This view, however, is weakened by the fact that most universities are under pressure from private universities who are profit driven while public universities are finding funding from governments drying up.

Resoundingly, like any other industry, higher education is a competitive environment with students having many options. The increase of options therefore necessitates that service providers ensure they provide efficient service to their customers and continue to find out what students perceive as quality service. Importantly, education is a service as it possesses the characteristics that differentiate it from a good (Oldfield & Baron, 2000). This was further supported by Gruber, Fuß, Voss, and Gläser-Zikuda (2010).

Nadiri et al. (2009) asserted that for success to be achieved in education, it is paramount that student expectations and perceptions are understood in order to

effectively serve them. Tertiary institutions may be falling short in service standards because they have not taken time to understand customer expectations (Yeo, 2008). Educational institutions have many stakeholders and most of them have varying perceptions and, therefore, it is important to ensure that these various stakeholders quality expectations are met (Appleton-Knapp & Krentler, 2006). However, the student remains the most important stakeholder. Cuthbert (1996a) noted that despite the fact that this identification of the primary stakeholder is a difficult thing it is important for the educational institution to survive. While often the student is not the purchaser or the one paying for the service, they remain the biggest opinion maker on the service quality and satisfaction.

Education in South Africa has undergone a lot of criticism and change in recent years, with most conversations around it dominated by narratives from the United States and Europe (S. M. Nkomo, 2015). Issues raised include the relevance of business education to industry, balancing of various conflicting interests and performance issues. Importantly, education has been affected by historical inequalities, colonialism and system challenges (Badat, 2010). These challenges are common in Africa where disadvantaged individuals have found going to university as going through the eye of the needle (Mdepa & Tshiwula, 2012). In the years after South Africa's independence, there have been increased enrolments, increased gender participation and equity.

To address issues of poverty, the National Student Financial Aid Scheme (NSFAS) was introduced to close the gap between the rich and poor (Badat, 2010) . Established in 1991 the NSFAS scheme was brought in at a time when there was bad student loan repayment but a need to close the gap for those that can't afford higher education in South Africa. It had a socio-political agenda without doubt (Jackson, 2002).

South Africa also faces the challenge of high drop our rates and had a graduation rate of 15% in the early 2000s (Letseka & Maile, 2008) and more concerning was that one race (white) had double the graduation rate in comparison to black graduates. Of interest is that even universities have labels such as "white" universities, "Afrikaans" universities which showcase a history of differentiation on language and culture (Mdepa & Tshiwula, 2012). In recent times, place of origin or location have become important differentiators for universities and some universities emphasise where they are located (Foroudi, Dinnie, Kitchen, Melewar, & Foroudi, 2017). However, these elements of history may not always trump the importance of what Chapleo (2012) unearthed as most important for students: progressiveness and accessibility.

For business schools, the changes include a reduction of returns for their major offerings such as the Master of Business Administration (MBA), where salaries for graduates and opportunities are seeing a decline in a number of countries, a shortage of qualified faculty, and globalisation (Connolly, 2003), new technologies in teaching,

need for softer skills and adjustment in curriculum, need for funding models that make it more affordable for more students, coping with pressure from increased competition and reputational issues and the need to build business school brands (Hawawini, 2005).

Business and community, on the other end, require certain skills from business schools and yet there is a scarcity of essential skills in South Africa. This phenomenon of skills shortages, some argue, is an international one, rather than just a local one (Mateus, Allen-Ile, & Iwu, 2014). Factors such as health, and particularly the prevalence of HIV-AIDS, have torn the working population apart (J. Nkomo, 2010). This, compounded by an increasingly mobile skilled labour force who look for opportunities elsewhere (Crush & McDonald, 2002) when opportunities arise leading to increased skills shortages. Skills shortages can be a result of lack of investment in education, structural changes (Richardson, 2007), the apartheid system which racialised skills and caused great denial to most race groups (Akoojee & McGrath, 2007). Going to tertiary education is seen as breaking the poverty cycle for most black people (Mdepa & Tshiwula, 2012).

Business education and business schools have been on the increase since the mid-1990s and, in some countries, the growth has come to maturity stage where they may even be a slowdown in their growth (Hawawini, 2005). Competition is on the rise and yet funding and resources are getting lower and lower, calling for greater differentiation with competitors (Ivy, 2001). Business schools have to find ways of branding themselves uniquely to attract students, with most students recommending the school based on affective brand features such as adventurousness, empathy, prestige and competence (Alwi & Kitchen, 2014). This approach has come with controversy and debate as universities, seen as non-profits, began to see students as customers (Bélanger, Bali, & Longden, 2014). Marketing efforts have seen the transition to using branding strategies most common in corporate, which include having a unique selling position, brilliant logos, innovative marketing techniques and well-designed marketing material (Williams Jr & Omar, 2014). Foroudi et al. (2017) conclude that brand identity for universities is influenced by brand elements such as branding and images. However, the ability to change some brand elements such as names and logos may be limited because of history and heritage. At different brand touch points it is important that an organisation knows its strengths and weakness. The touch points may be at pre-admission, during the course and post passing (Khanna, Jacob, & Yadav, 2014) as illustrated below. A solid brand will ensure there it is strengthened at all touch points.

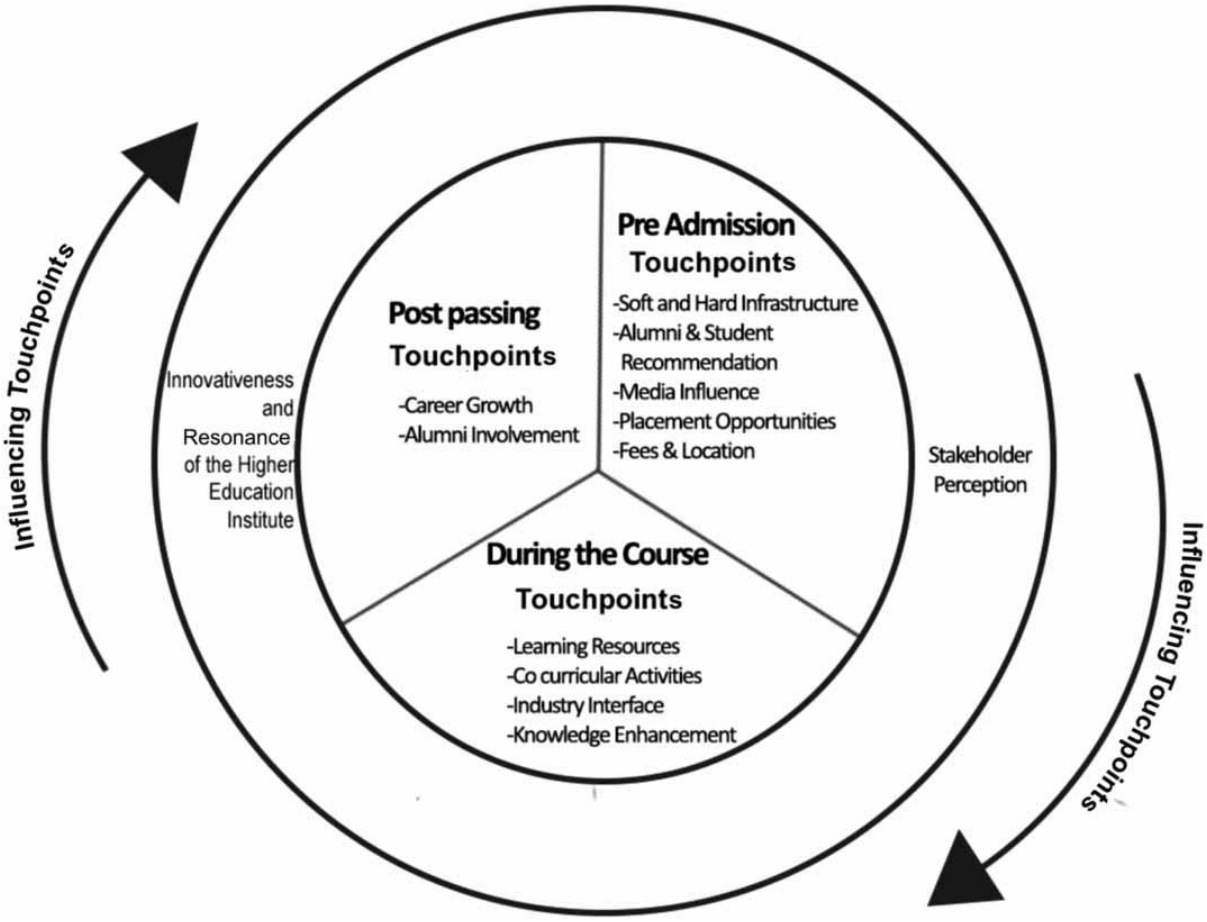


Figure 1: Brand Touchpoint Wheel model for building higher education brand

Source: (Khanna et al., 2014)

The increase and power of word of mouth has seen the influence of social media as a marketing tool in higher education. The university is a message generator but students and other stakeholders represent a large and more influential group in regards to recommendation (Bélanger et al., 2014). The ability to attract and retain students presents the potential for usage of social media in higher education (Constantinides & Zinck Stagno, 2011). Prospective students are using social media and the web for searching and interacting with universities. Social media is seen as the future of communicating with prospective students as it is a two way communication platform (Bélanger et al., 2014) perhaps in contrast to traditional advertising which saw institutions speak to the prospective students but not respond promptly to questions and further enquiries that may emanate from marketing communications.

There is a fast changing need to catch up in regards to the use of technology as some students prefer online learning and others face-to-face learning (Fish & Snodgrass, 2015). Business schools find themselves with students expecting them to be more

modern in look and feel, facilities and technology, importantly (Nadiri et al., 2009). In addition, there is an increased used of Customer Relationship Management (CRM) as way of advancing service quality efforts for applications and handling responses (Wali & Wright, 2016). Recruiting potential can be boosted by usage of CRM systems in marketing efforts in universities (Tapp, Hicks, & Stone, 2004).

With all these factors in mind, it has become more critical that schools constantly ask themselves if they are meeting student expectations and providing satisfaction (Nadiri et al., 2009). Efforts have been made to understand the relationship between service quality and satisfaction in higher education by scholars such as Oldfield and Baron (2000) and measuring service quality by studies by Abdullah (2006b) Ultimately, business schools would want to gain a competitive advantage by doing service improvements (Nadiri et al., 2009) and importantly, understanding service quality from the perspective of its various stakeholders as service quality is a relative concept (Tam, 2001).

1.3. Problem statement

1.3.1. *Main problem*

To ascertain the impact of self-service technology on the perception of the customer service quality. The reduction in face-to-face interaction and usage of technology to make applications, enrolment and get student information may be a potential challenge for some customers who are not technologically savvy or simply would want to deal with humans than online systems. Meuter et al. (2000) noted that self-service technology is changing service outcomes and, therefore, it is of importance to ascertain if self-service technologies are affecting customer satisfaction and quality dimensions.

1.3.2. *Sub problem*

The sub-problem is to identify some of the gaps in the self-service technology's customer service quality at the business school. In line with this is to understand where the largest difference in expectations and performance are so that recommendations can be made to close the service quality gaps. Presently, it is not known what the impact of using self-service technologies will be on perceived service quality.

1.4. Significance of the study

This study seeks to extend boundaries and get insights on the impact of self-service technology on student's perceptions on the service quality. Significant studies have

been made on student perception on customer service specific to library services (Martensen & Grønholdt, 2003), staff perceptions (Croll, 2014) and academic outputs. This study endeavoured to research the processes that happens before students start their academic journey as these moments of truths are important for winning customers in later moments of truths (Löfgren, 2005).

The study sought to contribute to the body of knowledge in what leading academics in services marketing have outlined as one of the research priorities that is leveraging on technology and measuring and optimising service performance (Ostrom, Parasuraman, Bowen, Patricio, & Voss, 2015). Parasuraman and Grewal (2000) outlined that there was opportunity for further research on the impact of great customer involvement through technology and the customer's perception of the value received.

This study therefore increases the body of knowledge on self-service technology in higher education service quality in the emerging markets context.

1.5. Delimitations of the study

- The study was conducted on a single department of a tertiary institution – in Wits Business School, and not all students of the University of Witwatersrand. The focus was on customer service touch points before students start the academic process that is information enquiry, applications, fees enquiry, and responses to applications, online processes, and orientation.
- Students surveyed were those who are part of the academic programmes and not those doing the shorter executive education programmes. The academic programmes run for a minimum one year and these students are classified as alumni after they complete their degrees unlike those that do the executive education whose courses can vary from a day to a number of months but not exceed a year.
- The study is conducted in South Africa and therefore studies in other countries in Africa and the world over could benefit providing a worldwide context.

1.6. Definition of terms

Services – *processes (economic activities) that provide time, place, form, problem-solving or experiential value to the recipient* (Lovelock, C., Patterson, P.G. and Walker, R.H., 2007)

Services marketing – *an organisational function and a set of processes for identifying or creating, communicating, and delivering value to customers and for managing customer relationship in a way that benefit the organisation and stake-holders.* (American Marketers Association)

Perceptions – *The way in which something is regarded, understood, or interpreted* (Oxford Dictionary)

Self-service technology – “technological interfaces that enable customers to produce a service independent of direct service employee involvement” (Meuter et al., 2000)

1.7. Assumptions

- Students who were respondents provided accurate and honest feedback. The perceptions were well thought and not just be a complaints box opportunity.
- Students do not expect their individual cases or concerns on service followed up as this study was for academic purposes only.
- There is an assumption that the researcher’s employment status at the university did not affect or create any bias at all.

2. CHAPTER 2: LITERATURE REVIEW

2.1. Introductions

This literature review investigates thoughts, theories and previous research work that covered the subject of education, customer service quality, satisfaction and self-service technologies in the higher education context. It will endeavour to provide a synopsis of some of the work done by scholars in the services marketing, customer satisfactions, self-service technologies and customer moments of truths.

2.2. The nature of services and their marketing

Lovelock and Wright (2001) defined service marketing as an act of performance. In the same breadth, Grönroos (2001) described service as a process leading to an outcome that must satisfy the consumer during the consumption process. Evidently, there is no physical product in a service and hence what is the final need satisfaction is the benefit derived from the performance or process of delivery of service. Service marketing is unique in that the processes and delivery happen at the same time, unlike products where process happens and then delivery may be made by another party or at a separate point. Grönroos (2001) asserted that services are reliant on technology, physical resources, customers, systems and employees.

When these factors are not up to standard, it is deemed poor service and may lead to customer dissatisfaction. Doucet (2004)) posits that service has technical and functional dimensions, with the functional element speaking to interpersonal elements, especially people. In recognising this important part of the role of people, service scholars such as (Söderlund, 2016) have even gone on to study how burnout can affect service performance, and issues of preferential treatment and how it's perceived in service encounters (Edvardsson et al., 2014). Ultimately, the defining of services has largely found that three dimensions are usually present: activities, interactions and solutions to customers (Edvardsson, Gustafsson, & Roos, 2005). Perhaps the dissenting voice to what seems to a very much agreed definition of services was Vargo and Lusch (2004) who felt the said difference between goods and services was not worth differentiating them and services were application of skills and competencies to activities, processes and performances.

V. A. Zeithaml, Parasuraman, and Berry (1985) in their study highlighted the unique factors of services, being intangibility, heterogeneity, inseparability of production and consumption and perishability. In light of the above, there are unique problems and also unique strategies required in services marketing. In their service quality research Parasuraman, Zeithaml, and Berry (1985) asserted that service quality is difficult to evaluate. It is expected that when expectations are defined, then measuring services

may become easier. However, what makes it difficult is that the expectations may differ from one customer to another. If a minimum standard of service is provided, more often than not, most customers will find satisfaction in the service rendered. The abstract nature of service in general can lead to a difficulty is highlighting uniqueness by one organisation in contrast with their competition's offering (Hill, 1995).

It therefore stands that services marketing must be driven by an understanding of what customers deem as satisfactory and effort must be made in implementing effective systems and resources to ensure customers have the best experience. This thinking is found in early research by Churchill Jr and Surprenant (1982) who noted that satisfaction was the goal and outcome of any marketing activity, and may lead to repeat purchase and loyalty.

2.3. Customer experience and moments of truths

The customer experience is paramount in services marketing and every customer moment of truth must, therefore, be maximised (Berry, Carbone, & Haeckel, 2002). Organisations must be able to anticipate and meet the expectations of customers for a fulfilling customer experience as service encounters occur with every interaction with the organisation (Shostack, 1984). Customer encounters, be they with marketing materials, emails, classrooms, lectures, calls to the call centre or conversations with a customer facing professional, make up the customer experience and moments of truth in the business school context. In the customer moments of truth, it is also essential that employees demonstrate a level of authenticity during service delivery (Yagil & Medler-Liraz, 2013). It is therefore possible that service staff simply parrot scripts as often found with most call centres, with little showing of empathy, concern or flexibility in meeting customers' needs, thus ensuring a good customer experience.

Bitner (1995) asserts that not all encounters have similar weight in building relationships with customers. This argument is strengthened by previous studies on education, for example some students have placed greater value on quality of lecturers and don't have the same value placed on tangibles like buildings. This difference, perhaps, reflects the fundamental issue about customers and service in that what satisfies one customer may not satisfy the next one and therefore service quality is a moving target. Irrespective of the weight of the customer moments, they matter and can make or break an organisation in three interactive moments those being physical moments, emotional involvement moments and value chain moments (Mascarenhas, Kesavan, & Bernacchi, 2006). The three moments of truths in physical moments, emotional involvement and value chain are further supported by the five dimensions of service quality i.e. tangibles, reliability, responsiveness, assurance and empathy as established by Parasuraman et al. (1985).

Organisations must strive to ensure that customer moments of truth or service encounters reflect that the customers are indeed valued. Once the customer leaves that moment, the opportunity is lost (Gronroos, 1988) and perhaps service recovery becomes the next option. It is also possible that customers may choose what is known as defensive processing and continue to support the brand despite one bad critical incident (Ahluwalia, 2002). Van Doorn and Verhoef (2008) assert that these moments of truth, also known as critical incidents, are commonly used by the customer to re-evaluate their relationship with a brand or organisation.

Lin and Hsieh (2011) assert that it stands to reason that self-service technologies are a customer moment, like the face-to-face interaction customers have with company personnel, and that there is co-production that happens in the delivery of service. Meuter et al. (2000) posit that creating an enabling environment for increased efficiency and reduction of the time customers could have needed in a face-to-face interaction with service providers is made possible by self-service technologies. Thus, customer experience touch points demand similar effort in ensuring satisfaction to customers at every moment of truth. The notion of providing transactional convenience, benefit and post-benefit convenience as part of efforts to provide a total experience of the customer was made by Berry et al. (2002). Service convenience is of outermost importance for many customers in the e-quality space including website quality and their safety (Zhang & Prybutok, 2005). Self-service technologies must be seen as enhancers of the customer experience and moments of truth in this co-production (Meuter et al., 2000). As early as the 80s, thinkers like Shostack (1984) began to highlight technology as a way to create service encounters. Increasingly, a number of service organisations are offering their services via online platforms or websites (Ding, Hu, & Sheng, 2011) and therefore necessitating that the moments of truth be well refined. Organisations, more and more, also need to ensure that they clearly provide a detailed and easy to understand process of navigating their technologies as part of the customer experience (Ding et al., 2011). Important to delivery is also the need to ensure than internal marketing has been done so as to achieve service quality and ensuring a service culture by an organisation (Joseph, 1996).

The difference in physical businesses and online platforms must be acknowledged and not ignored (Suter & Burton, 1996) as this will affect the strategies when trying to achieve customer satisfaction. To measure customer experience, there has largely been a focus on understanding customer perceptions by most marketing scholars (Lemon & Verhoef, 2016).

2.4. Self-service technologies

Meuter et al. (2000) define self-service technologies as interfaces that help the customer in the production of a service without customer facing employee involvement. Examples of such self-technologies include Automated Teller Machines (ATMs) which allow for banking without going to banking halls, booking and checking in for flights without going to the counter and, in higher education, the enrolment and admission processes without going to the school. Beatson, Coote, and Rudd (2006) posit that there is a growing influence of self-service technology on service delivery that is to be expected. This growing usage may begin to affect industries that were traditionally reliant on face-to-face interaction (Meuter et al., 2000). Bitner et al. (2000) argued for the need for further studies on the fundamental difference in technological encounters and interpersonal encounters.

These environments are essentially different and therefore the way customers evaluate their service encounters may be different. While previous studies by (Bitner, 1990; Parasuraman, Zeithaml, & Berry, 1988) have outlined the relationship between frontline employees and perception there is a need to understand technology based encounters. Parasuraman and Grewal (2000) outlined questions on technology and employees and how new company technologies may affect customer perceptions of service. Importantly, the increase in the technology and human interface would change the nature services as we know it (Parasuraman, 1996).

The reduction of human interaction and provision of convenience has been a driver towards self-service technologies (Cunningham, Young, & Gerlach, 2008). Self-service technologies then are seen as reducing costs and increasing productivity and possibly better customer service (Bitner, Ostrom, & Meuter, 2002; Meuter et al., 2000). Walker and Johnson (2006) allude to a sense of compulsion to use an introduced self-service technology which may ‘force’ them to utilise it. In addition, at times self-service technologies can be expensive when serving smaller market segments (Kauffman & Lally, 1994). Other studies have found self-service technologies to experience rejection due to failures such as technology failure, customer-driven failures and bad design (Meuter et al., 2000). However, when service failures are quickly addressed, it allows for possible continued usage of the service (Dabholkar & Spaid, 2012). Whatever self-services advantages or disadvantages, they help in what Bitner (1995) posited was important to keeping customer promises; providing enablement to deliver value propositions or customer promises.

The introduction of self-service technologies must lead to greater efficiency in a cost-effective manner, customer satisfaction and loyalty, and finding new segments (Bitner et al., 2002) and some users have found self-service technology usage to be an enjoyable experience (Dabholkar, Michelle Bobbitt, & Lee, 2003). The change from

face-to-face service encounters can come with difficulty and resistance (Curran & Meuter, 2007), as technological-readiness which is the desire or ability to embrace new technological innovations (Parasuraman & Grewal, 2000) may differ with customers. Customers' attitudes, expectations, perceived utility and enjoyment may be affected by this change and hence their response is not always positive.

It seems the ease of use and usefulness of these technologies is what may determine their acceptance by consumers (Davis, Bagozzi, & Warshaw, 1989). and usefulness influences attitude (Weijters, Rangarajan, Falk, & Schillewaert, 2007). Issues of reliability are also critical to acceptance and continued usage of any self-service technology (Weijters et al., 2007). Studies substantiate that, many a time when there is service failure on self-service portals, customers have a preference for personal interactions (Van Riel, Liljander, & Jurriens, 2001), and the tolerance to service failure is lower on technological platforms.

Furthermore, issues of perceived risk in usage, technological-readiness and trust can affect any adoption (Kelly, Lawlor, & Mulvey, 2010). Resistance to self-service technologies can at times be found amongst those that utilise them but simply think human interaction provides a more holistic customer experience (Dabholkar et al., 2003). There are several people who are accustomed to face-to-face assistance which affects their adoption of these technologies (Lee & Allaway, 2002). This, perhaps, could manifest in higher education enrolment and application processes which in the past used to be manually done by students on specific days. Banks, possibly, may find this a factor after years of the practise of walk-ins and speaking to tellers and consultants.

Venkatesh and Morris (2000) in their study look at how different genders may differ in their adoption, with a finding that females wanted ease of use more importantly. This is supported by the findings of Lee and Allaway (2002) on the importance of allowing customer trial at no cost, giving customers a sense of control and importantly making self-service technologies easy to use. Making technology easy to use and giving trials assists in what Mascarenhas et al. (2006) noted as essential in providing a total experience, which is the provision of an emotional and real customer experience leading to loyalty in the long run.

The measurement of self-service technology quality can be investigated by looking into issues of assurance, convenience, design, enjoyment, customization, functionality and enjoyment (Bitner et al., 2002). The measurement of these dimensions has led to the formation of the Self-service technology (SSTQUAL) scale measures by Lin and Hsieh (2011) amongst many.

Online service quality has increasingly been transforming and getting attention. Webqual was one of the first instruments developed in the technological and online measurement when websites began to used greatly in business (Tate & Evermann, 2010).

Prior research by Barnes and Vidgen (2001) advances that site quality, service interaction quality and information quality be the dimensions measures for quality. Overtime, usability has become the focus leading to the development of measuring scales like E-Qual. Schubert and Selz (1999) introduced the Web Assessment Tool and later scholars Yoo and Donthu (2001) introduced SITEQUAL which they used on online shopping websites with emphasis on ease of use, security, processing speed and aesthetic design. This scale, like many quality scales, sought opinion from shoppers and specifically in their own natural or first language hence allowing them to express themselves better. Lately, a new scale Standardized User Experience Percentile Rank Questionnaire (SUPR-Q) formulated by Sauro (2015) was introduced and looked into the trust, loyalty, appearance and usability dimension.

Wells, Valacich, and Hess (2011) delved into the effects on website quality on perception of the products and found a direct positive correlation between the two. It is therefore of importance that a website reflects the service that is on offer. Meyer (2008) dissects that many academic institutions had well-designed websites but yet for the technological late adopter or inexperience user they found them difficult to navigate. To allow for greater personalisation and collaboration, websites have further developed to what is called web portals which allow a website to be the linkage with other internet pages and an intranet (Sahney, Banwet, & Karunes, 2004). The ability of a website to provide content, connection, community and commercial functions are what define a portal (Liu, Du, & Tsai, 2009) .

2.5. Service quality and its measurement

In the 1990s, service quality was still a fairly new concept and the subject featured both in the marketing and operations management disciplines (Pariseau & McDaniel, 1997). A solid foundation on study of service quality was laid by early studies by Parasuraman et al. (1985) and eventually led to the establishment of a service measurement tool named SERVQUAL. Service quality has seen studies been extended to many different industries like banking (Rana et al., 2015); (Lassar, Manolis, & Winsor, 2000) and information systems (Dyke, Prybutok, & Kappelman, 1999). Early studies by Parasuraman et al. (1985) noted that while service quality was more difficult to measure, perceptions were driven by expectations versus the service performance and importantly that evaluation of service is about both outcomes and processes. That said, service quality is a series of events and occurrences that seek to meet and exceed expectations (Sivakumar, Li, & Dong, 2014). Various views have

been made in defining service quality and Philip and Hazlett (1997) contend, therefore, that there is a need for a more encompassing definition of service quality.

Harvey and Knight (1996) contend quality is a sign of exceptional value for money and fit for purpose that meets and exceeds expectation. By its definition, it is dynamic and must ultimately give an organisation some sort of superior value than what others offer (Goetsch & Davis, 2014). Focus on service quality by organisations has been primarily driven by a desire to get a competitive edge over other firms who, perhaps, may have similar products or offering same service (Hu, Kandampully, & Juwaheer, 2009). Service quality has an ability to provide service differentiation. Anderson, Fornell, and Lehmann (1994) assert its ability help build market share and be a source of customer satisfaction. Prior research also delves into its positive impact on loyalty of customers and satisfaction in the banking industry with similar results (Kaura, Durga Prasad, & Sharma, 2015).

As quality is prioritised, it has a longstanding impact (Ab Rahman, Mohamed, Wahab, Saibani, & Rafique, 2016). Service quality benefits include customer retention, avoiding price completion, retention of good employees, and reduction of costs (Kotler, p. 409). To attain service quality, an organisation may look to having zero defects and at customers who are not doing business with it anymore (Reichheld & Sasser, 1990). For the service industry this includes ensuring more training for staff members to ensure they maintain standards. In the tourism industry, training and service quality go hand in hand and have a positive relationship (Dhar, 2015). Key to this is ensuring that there is good work relationships which have a greater effect on customer service than just the satisfaction (Yee, Guo, & Yeung, 2015). As such, the role of employees can't be underestimated. Furthermore, service quality is achieved by empowering employees so they can innovate and service clients at customer moments of truths (Sok & O'Cass, 2015).

2.5.1. *Servqual (service quality)*

The SERVQUAL method is the most widely used method of measuring service quality and measures service in five dimensions: tangibility, reliability, assurance, responsiveness and empathy (Rana et al., 2015). The method, however, has its critics, for example Dyke et al. (1999) who identified difficulties in the usage of gap scores, reliability of the gap scores, validity issues, unstable dimensionality and unclear definition of expectation. In the same token, SERVQUAL's strength, as posited by other scholars such as Parasuraman, Berry, and Zeithaml (1993) is its diagnostic ability which allows application practically. Cronin Jr and Taylor (1994), in criticism of SERVQUAL, stated that it does not focus on what is important, then developed what is known as SERVPERF, which they argued marked the difference in perception of quality. Criticism of SERVQUAL includes the opinion that its measures process quality

and not outcome quality. The process quality is measurement during the consumption of the service (Tate & Evermann, 2010). Grönroos (1984) posits that outcome quality speaks of measuring service at the end of a production/consumption process.

Assessing both the advantages and disadvantages of SERQUAL and SERVPERF that the usage of one method or the other is a function of what one expects to use the findings for. For the one who may want to use the finding to diagnose and make practical changes to systems to improve service, SERVQUAL seems appropriate. The usage of SERVQUAL will address the issue of understanding more what customers wants and feeding to improvements in systems. Scholars such as Cuthbert (1996a); (Hill, 1995) ; Oldfield and Baron (2000) have gone on to use SERVQUAL, further cementing it as an ideal method for measuring perceptions in service quality at educational institutions.

However, Cuthbert (1996b) concluded that a modified version of SERVQUAL would be more appropriate as it would be more holistic in as far as capturing the student experience. Questions around the reliability were raised (Nadiri et al., 2009). Their paper highlighted that SERVQUAL dimensions were not generic as its scales may not always be applicable to different service setting Abdullah (2006b) , not universal (and this was supported by Buttle (1996). Buttle (1996) further questions if the simple equation of performance versus expectations itself is how customers view service quality.

The validity and reliability of SERVQUAL has undergone a lot of scrutiny, with other variations and improvements on the model having been presented. While there many views about the model, its validity and reliability have been endorsed by many (Tomkovick, Al-Khatib, Baradwaj, & Jones, 1996) and importantly many other scholars have been able to improve or build on it. The use of the SERVQUAL scale in education has previously been undertaken by Oldfield and Baron (2000) ;Cuthbert (1996a);Tate, Evermann, Hope, and Barnes (2007) to name a few. Van Riel et al. (2001) suggests that SERVQUAL can be used in measuring e-services but would have to be adjusted for meaningful use. This thinking is further corroborated by Barnes and Vidgen (2002).

The SERVQUAL Scale has five dimensions which are the service quality indicators (Parasuraman, Berry, & Zeithaml, 1991) and are all important (Parasuraman et al., 1988) namely the below:

- **Tangibles –*communication material, appearance of personnel, equipment and physical facilities.***

In their study Tomkovick et al. (1996) concluded that this dimension was the most important according to students but in contrast, an early study found them to be the

least important (V. A. Zeithaml, Parasuraman, Berry, & Berry, 1990). For websites and other self-service technologies, there is no physical surrounding and greater customer involvement (Gounaris & Dimitriadis, 2003), while well maintained facilities and modern equipment are key attracting students in face-to-face environments.

Yoo and Donthu (2001) emphasised the importance of aesthetic design as part of service quality asserting its importance amongst other dimensions of a website or web portal. The emphasis on the user interface was further advanced by Van Riel et al. (2001). In their study, they suggested that tangibles could be called user interfaces in a technological context. Attractiveness was established as an essential for a web portals (Z. Yang, Cai, Zhou, & Zhou, 2005).

It is therefore important the look and feel of the web portal, lay-out, fonts and its usage of multimedia is up scratch with its target market in mind. Design factors both technological and service design can provide great service quality dissatisfaction when not attended to (Meuter et al., 2000). Importantly the tangibles of the web portal must allow for what V. A. Zeithaml, Parasuraman, and Malhotra (2002) concluded was most pertinent: ease of use. Fancy self-service technologies with all sorts of technologies and lovely colours and brand elements may not lead to customers been satisfied with usage. Santos (2003) asserts the importance of certain service dimensions to be put in mind in building a website or any e-service platform that been ease of use, appearance, structure, linkage and its content.

In the face-to-face service environment like a university, tangibles may include appearance of staff, modern equipment, and printed marketing materials (De Oliveira & Ferreira, 2009). A study by Yousapronpaiboon (2014) found that an improvement in tangibles would have the greatest effect in improving the gap in service expectations and perceptions. The paper also used the opening of the building for more time as a tangibility factor in support of earlier thinking by Gronroos (1988) on the importance of accessibility and flexibility. Haywood-Farmer (1988) furthermore asserts the importance of building and facilities in a low labour-intensive service environment. Where there seems little care for buildings, facilities customers may assume the organisation pays little attention to details (Fitzsimmons & Fitzsimmons, 2006) leading to negative perceptions.

Gronroos (1988) asserts that a good image goes a long way to good customer service perceptions. Customers may be wowed by the great branding and atmospherics and hence it is important to ensure that the images are good. Marketing communication must therefore be well designed but yet promising what the organisation can deliver.

$H1_0$: The tangibles dimension of Self-service technologies has no effect on perceived service quality at a business school

$H1_A$: The tangibles dimension of self-service technologies has an effect in perceived service quality

- **Reliability-** ***accuracy and dependability in performance of the expected service.***

While a web portal and website may have many attributes, it is essential that it is dependable and, importantly, consumers evaluate it on its core service (Van Riel et al., 2001). A good portal must do that which it's intended to do, consistently. **Z. Yang et al. (2005)** assert the usefulness of content and importance of having adequate information as pillars of service quality in portals. Meuter et al. (2000) proffer that one of the greatest satisfaction factors of self-service technology is the ability to bail out customers and, therefore, deliver service quality at a critical time. In contrast, however, technological failures are the most annoying factor for customers. It is therefore important that self-service technology is reliable. This is confirmed by prior research that content quality is an important dimension to the success of el-learning systems in education (Ozkan & Koseler, 2009). In communicating with customers before they interact with the organisation, it is important that all marketing communications reflects honestly the products and services otherwise expectations rise and performance may not rise accordingly, leading to an increased service gap (Gronroos, 1988).

In the face-to-face service scape, reliability speaks to doing that which staff promise they will do, making customers feel secure when dealing with staff and keeping records (De Oliveira & Ferreira, 2009)***.*** Lovelock and Wright (2001) purport that this dimension is the most important of all service dimensions. Reliability has been found to be a strong source of dissatisfaction in the customer service encounter Johnston (1995) and therefore a lot of attention must be drawn to ensuring service is reliable. To ensure reliability, a focus on internal stakeholders is important as dissatisfied staff rarely deliver consistency (Seth, Deshmukh, & Vrat, 2005). Reliability could, therefore, be related to what Grönroos (1984) called functional quality and contends it's the most important service dimension, more important than any perceived quality.

The goal in reliability is to deliver a service all the time, in the same standard without error (Schneider & White, 2004). There is a need for dependency and accuracy to achieve this (Wilson, Zeithaml, Bitner, & Gremler, 2008) and, importantly, knowing customers ever changing expectations.

$H2_0$: The reliability dimension of self-service technologies has no effect on perceived service quality at a business school

$H2_A$: The reliability dimension of self-service technologies has an effect in perceived service quality

- **Responsiveness- *willingness to be available to provide customers with service promptly*.**

Z. Yang et al. (2005) noted that web portals allow for the interaction of customers and portal employees. Therefore, responsiveness on portals is both a technological and human interaction which can be evaluated and, importantly, affect perception on service quality. This dimension of scholars of e-service quality (Van Riel et al., 2001) preferred it remained the same when using SERVQUAL on a technology. Walker and Johnson (2006) found that when people perceive some sort of risk in the use of a technology or want a prompt response, they often will prefer face-to-face interaction as it gives them a quicker response. Whichever way, customer experiences are generally perceived as social in nature (Lemon & Verhoef, 2016) and therefore the design of self-service technologies must always have this in mind. A key part of service and perceptions of good customer service is service recovery in the moments of truth (Gronroos, 1988). Responsiveness is one the best ways to deliver service recovery when there has been a challenge, be it face-to-face or on a self-service technological platform.

When organisations are not responsive they keep customers waiting unnecessarily, which leads to negative perceptions of service (Perreault, Cannon, & Mc Carthy, 2009). In the advent of social media, more business schools and universities need to ensure that they keep content fresh, but more importantly, interact and respond in good time (Bélanger et al., 2014). Silent brands will take a knock.

$H3_0$: The responsiveness dimension of self-service technologies has no effect on perceived service quality at a business school

$H3_A$: The responsiveness dimension of self-service technologies has an effect in perceived service quality

- **Assurance-** ***inspiring confidence and trust through knowledge and courtesy of employees***

Gronroos (1988) in early studies called assurance professionalism and skill of employees. In proving assurance, confidence must be transferred from the service provider to the customers so they can act or make decisions on the information given. Critical to assurance is the security of information that is shared on web portals (Petersen, 2001). Every website must satisfy its customers that is can maintain privacy and confidentiality. In cases were payments can also be done online, the consumer or customers must feel safe transacting online, which speaks to trustworthiness. Urban, Sultan, and Qualls (2000) assert trust as being at very centre of any technological transaction of electronic commerce.

Without this trust, it becomes hard to do business and customers may not perceive the business well. The mandate of marketing, therefore, is to ensure that they constantly communicate the usage and assurance of self-service technologies to calm customers concerns about perceived risk (Walker & Johnson, 2006). Janakiraman, Lim, and Rishika (2018) posit that issues such as data breaches can have a negative effect on customers and their loyalty hence it's important to give customers assurance. It is also important that companies open channels for complaints as customers who are strongly tied to the company may actually become more loyal when they feel they are listened to (Umashankar, Ward, & Dahl, 2017).

Abdullah (2006a) posits that access is top of mind for students to perceive a university's service quality. The university must be easy to contact and be easily found. Self-service technologies may, perhaps, have the advantage of ease of contact in the era of cellular phones and in the case of students on a business school it would help if the contact centre is easy to find. The provision of a variety of support services and information service improves service quality (Chua, 2004). This ensures clients have assurance that they will be attendant should they come to a business school campus. In addition, staff must ensure that they "know their stuff", that is, have intimate knowledge of processes and policy to improve service and provide assurance to customers (Yousapronpaiboon, 2014). This is further emphasised by Zhu, Wymer, and Chen (2002) model on service quality.

$H4_0$: The assurance dimension of self-service technologies has no effect on perceived service quality at a business school

$H4_A$: The assurance dimension of self-service technologies has an effect in perceived service quality

- **Empathy-** ***provision of individual attention to customers***

Early studies on this suggested the importance of behaviour and attitude (Gronroos, 1988) and this has grown to studies on empathy. Described as both emotional and cognitive in nature (Smith, 2006), empathy is defined as the ability to perceive and respond appropriately to a customer's emotions and experience is the service encounter (Castleberry & Shepherd, 1993). Wieseke, Geigenmüller, and Kraus (2012) conclude that empathy has a positive relationship with customer loyalty and, importantly, satisfaction of customers which would be key objectives for any organisation. Previous studies purport that empathy and sales performance are positively related (Dawson Jr, Soper, & Pettijohn, 1992) but may also have negative consequences (McBane, 1995).

In reflecting an organisation understanding of its customers, they must demonstrate a level of customisation or tailor to personal needs, even. This kind of personalisation was found to be the most important thing in service encounters (Mittal & Lassar, 1996). The empathy in the self-service technology must speak to this personalisation (Van Riel et al., 2001), adequate contacts, consistent courteousness and attention when needed (Rosenberger, 2000). Where self-service technologies don't provide empathy or fail, often there is a propensity to then want interpersonal contact and that can overload workload to staff (Meuter et al., 2000). In an effort to been empathetic, organisations may put too much information on web portals but (Z. Yang et al., 2005) established the importance of "useful content" to convey service and hence empathy. Interestingly, personalisation of service may not necessary lead to been seen positively as concluded by Surprenant and Solomon (1987).

In interpersonal contact, it is important that staff exhibit empathy through not being distracted when dealing with a customer thus personalising service, provide convenience and always putting the customer first (De Oliveira & Ferreira, 2009). Strategic organisations must, in the case of face-to-face customer and employee interactions, hire service oriented employees and train them (Wieseke et al., 2012). Jiang, Jun, and Yang (2016) found empathy to be the care dimension of servicer quality. This care factor speaks to meeting individual needs and solving challenges the customer may have in service encounters.

The interpersonal contact environment when dealing with customers can be improved through providing training on how to exhibit empathy (Wieseke et al., 2012) and service training can also lead to improve sympathy in the organisation (Lundy, 2007). Empathy, therefore, can be learned like other skills. Of intrigue in the Wieseke et al. (2012) study was that it was evidenced that customers own empathy can literally rub on to employees in those moments of truths, thus creating great customer experiences. Some companies that in recent times have embraced empathy as part

of their culture of always being in their customers' shoes include Apple, Coke, Discover Cove, and NikeID (Tripp, 2013). They have all discovered that service will give them a head start but more importantly, that their success is more about the customers' needs more than its about what grand plans the organisation has for the customers.

$H5_0$: The empathy dimension of self-service technologies has no effect on perceived service quality at a business school

$H5_A$: The empathy dimension of self-service technologies has an effect in perceived service quality

2.5.2. *Servperf (service performance)*

Supported by Brown, Churchill, and Peter (1993) as being more superior to the SERVQUAL, the SERVPERF is known as the perception only scale (Sultan & Yin Wong, 2013). It seeks to ascertain the views after a performance and not the process only. This method is developed from the perception only scale. Scholars have taken time to compare it with SERVQUAL regarding to their suitability in education and found that it matches SERVQUAL in suitability (Bayraktaroglu & Atrek, 2010). As a method it was founded on the work of Cronin Jr and Taylor (1992) after questioning the gaps theories foundations and theoretical evidence.

SERVPERF is ideal for checking on performance only and, if that is the purpose, it then becomes the ideal method. It is evident that SERVPERF is limited and simply a variation of the SERVQUAL. The loss of the expectations measures also poses a challenge in that expectations do form an essential part of the judgement of a performance. Lovelock and Wright (2001) support this as they posit that expectations are essential to determine satisfaction.

2.5.3. *Critical incident technique (c-i-t)*

This method has been used in self-service technology assessment of service quality (Meuter et al., 2000). Self-service technologies are defined as enablers of the provision of services without service employees been involved in much of the process. It sought to ensure that service encounters on technologies are investigated and evaluated. Wilson et al. (2008) indicate that there are factors that will influence a customer's sense of satisfaction in every encounter. These factors are what Meuter et al. (2000) called satisfying and dissatisfying factors.

The strength in CIT is outlined by Meuter et al. (2000) who in postulates that there is little research on technology service encounters, and inductive techniques may be

best. CIT, as an inductive technique, generates concepts, hypotheses and theories that can be researched in the future. Secondly, the CIT method's strength is in its allowance for expression and detail. Questionnaires are open-ended, hence allowing for elaboration by respondents. While some scholars have criticised the fact that respondents have open book on their responses which made lead to some sort of bias, Cassell and Symon (2004) quoted Chell who stated that the bias may be the respondent's reality. However, in its efforts to only look at satisfiers and dissatisfiers, the method there is the possibility of only looking at what respondents found outstanding to them

2.5.4. *HEDPERF (higher education performance)*

Further developments to these have been the HEdPERF measure developed by Abdullah (2005), which is argued to have been developed specifically for the education sector. The study argued that what was known as generic measures were perhaps not very suitable for higher education, therefore necessitating a new measure which would have the student's perspective. The dimensions measured therefore looked at non-academic aspects, access, reputation, academic aspects, program issues and understanding. This industry specific method of measuring service quality was further supported by studies by Cronin Jr and Taylor (1992). The HedPerf model has 41 items that need to be measure thus capturing more information but at the same it is exhausting for respondents to go through all that information, especially in a fast-paced learning environment. From HedPerf, a new measure called HedQUAL was developed by Icli and Anil (2014) but is still in its infancy in terms of usage and further research.

2.6. Customer satisfaction

Defined as the customers' response in fulfilment by R. Oliver (1997) satisfaction must be a key objective of any organisation and, importantly, it's a concept that is closely aligned with service (Noone, Namasivayam, & Spitler Tomlinson, 2010). Kotler (2000) defines satisfaction as that feeling of happiness and increased need versus disappointment after the experiencing a service or consuming a product. The concept of customer satisfaction can be very abstract (Munteanu, Ceobanu, Bobâlcă, & Anton, 2010) and more often than not misunderstood as is its also used interchangeable with service quality.

Studies have even tried to find a common definition (Giese & Cote, 2000). Parasuraman et al. (1985) were of the view that service quality is different from satisfaction, but are related. In connecting the two Wilson, Zeithaml, Bitner, and

Gremler (2012) reflected that quality is a part or component of customer satisfaction. However Cronin Jr and Taylor (1992) contend that service quality is an antecedent to satisfaction, hence recommended further study (Cronin Jr & Taylor, 1994). This assertion was supported by more recent studies (Gruber et al., 2010). Bitner (1990) in contrast stated that satisfaction is actually an antecedent of quality. This is further supported by the thinking of Parasuraman et al. (1988) who believes that satisfaction leads to a perception of service quality. Athiyaman (1997) posits that satisfaction arises out of an assessment or evaluation of a usage or consumption experience and often an immediate response (Culiberg & Rojšek, 2010).

R. L. Oliver (1999), in looking at the relationship between satisfaction and loyalty, defines satisfaction as a perception of fulfilment. As much as there are similarities perhaps (Anderson et al., 1994) differentiation of the constructs that satisfaction looks back at an outcome and quality is perceptive in nature. Giese and Cote (2000) mention that often three elements about satisfaction are common in most definitions that is, customer satisfaction is a response, at a particular time to a particular focus. The importance of customer satisfaction is seen in that unhappy customers almost certainly spread the word to a handful of people (Hoffman & Bateson, 2010).

It stands therefore, that even higher education institutions must be targeting customer satisfaction as there is a positive relationship between customer service quality and customer satisfaction, specifically in higher education (Bigne, Moliner, & Sánchez, 2003) . In this study, service quality will be viewed as an antecedent of customer satisfaction. With regards to self-service technology, studies on customer satisfaction have been conducted by Lin and Hsieh (2011); (Meuter, Ostrom, Bitner, & Roundtree, 2003) who wanted to ascertain what could affect satisfaction.

Beyond satisfaction, however, it's trying to ensure you have a loyal customer, as satisfied customers have been found to also use alternative services providers or products (Jones & Sasser, 1995). This can be done by ensuring that customers receive a total customer experience in value chain moments, emotional involvement moments and physical moments (Mascarenhas et al., 2006).

Parasuraman et al. (1988) outline that the perception that service quality has been achieved emanates from customer satisfaction. This service quality perception may be a summed up after a single encounter, but is best surmised after the customer has had varied moments of truth with the same service provider (Bitner (1990) ;Van Doorn and Verhoef (2008)). It is therefore the mandate of marketing personnel to continually be investigating what their customers give as indicators of quality (Löfgren, 2005) in the pursuit of customer satisfaction. In contrast to many studies, however, Dubé (2015) purports that the influence of customer service quality on satisfaction is rather marginal at best.

It must be noted that like service quality, checking customer satisfaction becomes a waste of resources and time if there is little management commitment to make necessary changes (Cook, 2010). That said, management must not confuse or assume service quality and satisfaction as synonymous (Bolton & Drew, 1991). More so, for management, it has been found that customer satisfaction doesn't always lead to profitability for the firm contrary to common thinking (Keiningham, Perkins-Munn, Aksoy, & Estrin, 2005). Some satisfied customers are not part of the right customer segments and may not need as much attention as they are getting from the firm. These finding are contrary to findings by Harris and Goode (2004) who found a link between service quality, profitably and customer satisfaction.

Customer expectations are highlighted in the many definitions for both service quality and customer satisfaction. Defined as customers' needs and desires by Berndt and Brink (2004) their understanding is the at the apex of delivering service quality before all things (Wilson et al., 2008). Lack of understanding of expectations can lead to wastage of energy and resources by management. Expectations represent customer desires in the level of service they believe they deserve (Boulding, Kalra, Staelin, & Zeithaml, 1993).

V. A. Zeithaml, Berry, and Parasuraman (1993) allude to three different types of service expectation in adequate, desired and predicted service expectation. Satisfaction, therefore, can happen when either expectations are met or exceeded (Truong & Foster, 2006). Expectations have been categorised as either unrealistic, fuzzy or implicit (Ojasalo, 2001). The management of expectations is therefore advised lest unrealistic expectations and fuzzy expectations start to look like they are the standard. Expectations may be framed by many things such as personal needs, word of mouth, explicit and implicit promises; even culture has been found to have an effect on expectations (Assouad & Overby, 2016). It is assumed that individual wants and needs are generally influenced by culture (Overby, Woodruff, & Gardial, 2005).

Primary needs have a significant effect on perceptions of value and are a primary influence on expectations (Assouad & Overby, 2016). These needs can be functional, physical, social or psychological (Gollwitzer & Moskowitz, 1996) and act as a motivational force. Organisations, through their marketing communications to customers, may make personal and non-personal statements of promise (Assouad & Overby, 2016) which form the basis for expectations. Advertising, communication, personal selling and contracts are all forms of making an explicit promise (V. A. Zeithaml et al., 1993). When there have been more explicit service promises, there is bound to higher desired and predicted service.

In contrast, implicit promises are any marketing communication not explicit in nature (Assouad & Overby, 2016). These are cures that impact on expectations on what the

product or service may possibly be like and include staff uniforms, price, warranties and the business's interior look (V. A. Zeithaml et al., 1993). In the online and self-service environment, the look and feel of a website may be considered as an implicit promise (Koufaris, 2002). Considered as trustworthy and unbiased, word-of-mouth is a common source of expectation (Assouad & Overby, 2016) and utilised when there is a difficulty in making a consumption or purchase opinion. When there is higher collectivism in a community, you often find that word-of-mouth has a strong influence (Watkins & Liu, 1996). Word of mouth may be in many forms and avenues such as using the internet and making use of online reviews in addition to asking friends and family (Dwyer, 2007). Lastly, past experiences shape expectations, desires and their prediction (V. A. Zeithaml et al., 1993). These often are kept in memory like scripts by customers (Martin, Harrod, & Siehl, 1980).

Expectations have been conceptualised by various scholars in different ways such as ideal expectations, desired expectations and normative expectations (Assouad & Overby, 2016). Normative expectations can develop from previous good experiences with a service (Jayawardhena & Farrell, 2011). Customers have a reference point that often informs their future expectation (Wilson et al., 2008). Assouad and Overby (2016) assert that expectations are cognitive in nature, have a variety of sources, normative expectations are the most prominent, and importantly, expectations will involve over time. The fact that they evolve over time therefore means there is a level of uncertainty (Russ, 2006).

There is a range of expectations which could be informed by desired service, level of tolerance and adequate service. Adequate service is the basic level in which a customer will continue to deal with the service provider (Lucas, 2005). It's the least that a customer will possibly tolerate. This adequate service is often a product of a premeditated expected service by the customer (Valerie Zeithaml, 2000). The difference between the adequate and desired service level is possible what is the zone of tolerance (Boshoff & Du Plessis, 2009). When there is constantly a level of service that doesn't meet expectations and satisfactions clients will find options to switch to (Cravens & Piercy, 2000).

Of interest and contrary to many findings was that customer expectation could have no effect at all on customer satisfaction (Johnson, Nader, & Fornell, 1996). This thinking is contrary to assertions by Cravens and Piercy (2000) that customer expectations affect satisfaction.

2.7. Hypotheses Statements

$H1_0$: The tangible dimension of Self-service technologies has no effect on perceived service quality at a business school

$H1_A$: The tangible dimension of self-service technologies has an effect in perceived service quality

$H2_0$: The reliability dimension of self-service technologies has no effect on perceived service quality at a business school

$H2_A$: The reliability dimension of self-service technologies has an effect in perceived service quality

$H3_0$: The responsiveness dimension of self-service technologies has no effect on perceived service quality at a business school

$H3_A$: The responsiveness dimension of self-service technologies has an effect in perceived service quality

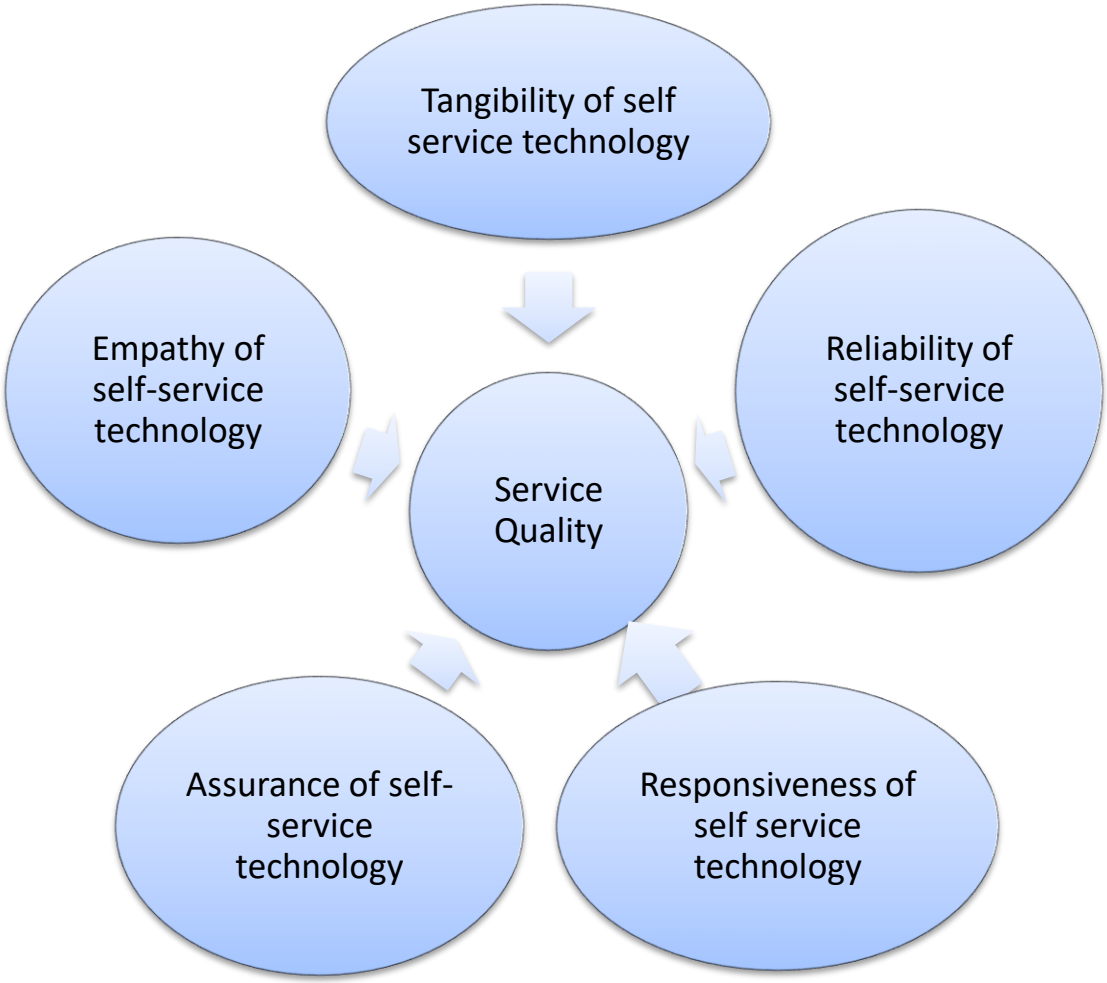
$H4_0$: The assurance dimension of self-service technologies has no effect on perceived service quality at a business school

$H4_A$: The assurance dimension of self-service technologies has an effect in perceived service quality

$H5_0$: The empathy dimension of self-service technologies has no effect on perceived service quality at a business school

$H5_A$: The empathy dimension of self-service technologies has an effect in perceived service quality

Figure 2: Conceptual framework for study



CHAPTER 3: RESEARCH METHODOLOGY

3.1. Data collection

The study used a survey research instrument which entails interviews based on a questionnaire. This is a basic tool in survey research (Salkind, 2013) and is the mostly widely used primary data collection method to eventually get descriptive information (Kotler & Armstrong, 2010). The objective was to obtain customers' inner views. It is essential that no undue pressure is placed on respondents hence the usage of a questionnaire. To make it easy to get feedback the researcher ensured that questions were easy and simple to understand. This straight forward manner makes people see the questions as objectively clear, well formatted and attractive as recommended by (Salkind, 2013).

Questions in the questionnaire were constructed to lead the respondent to reflect on attitudes and hence deduce perceptions of students on the customer service quality of the self-service technology. For ease of analysis, the usage of close-ended questions was preferred. Close-ended questions, when they include all possible replies, give respondents options on answers (Kotler & Armstrong, 2010). The questionnaire was designed such that it could be completed in minimal to moderate time, hence getting quality information while respondent is alert and willing to give information. Special attention was given to the development of the questionnaire as recommended by Cant (2003). This was cognisant of the fact that there is very limited time available when students are not inundated with school and work obligations. Importantly, SERVQUAL provided a guideline of the nature of questions when looking into service quality.

3.2. Research design

Research design is the grand plan on how research objectives will be achieved exactly (Tustin, Ligthelm, Martins, & VAN). It must be fluid and have continuity amongst the various research elements (Van Wyk & Toale, 2015) as it provides outline on the conduction of the research. Bryman (2006) concluded that qualitative research is depicted as a research that is largely open-ended and more often produces new information, changes and new insights or ideas. The research question primarily determines the research approach that is suitable (Salkind, 2013). The research question that has been set out in the study has a large influence in detecting the suitable research approach. Primarily, two types of research can be used: non-experimental or experimental research. The difference between these is largely a matter of differentiating on time frames, levels of control, the purpose of the research and key words in the research question. In the case of this research title:

The key word is "perception", which largely connotes how you view or organise and interpret sensory information. A non-experimental method is therefore appropriate to research perception. The descriptive method is outlined as a method to be used in this research to answer research questions. This stems from the belief that customer service is a present and continuous phenomenon and the research will require little control over factors being measured. Like most qualitative research, there is a general view that there is no objective reality but multiple realities as posited by Krauss (2005).

As the research was not exclusively attempting to answer questions about relationships between variables, co-relational research, despite being non-experimental, is therefore not ideal – narrowing the options down to descriptive or historical research design. Historical research, however, largely relates to events that have occurred in the past and utilises them to predict the future. The approach selected herein (that is, descriptive) will not require a treatment or control group. The objective is to paint a picture of what students perceive as good or bad customer service experiences in their interaction with the school's self-service technology. The research method's intent is to go into the mind of customers. Observational research as a source of primary information has the challenge that it is not possible to observe a perception, hence a survey being most suitable. The conduction of survey research can be done through interviewers "moving from door-to-door, asking respondents in a shopping centre, personal interviews, and phoning respondents, emailing questionnaires or postage mail, or using electronic means, such as the internet" (Zikmund & Babin, 2007, p. 15).

The questionnaire is based on an adaptation of the SERVPERF scale as designed and subsequently improved by (Parasuraman et al., 1988) and many other researchers. SERVQUAL, they noted, is a measure of what was expected and the perception after the service has been encountered.

3.3. Population and sample

3.3.1. *Population*

The research population according to Tustin et al. Is defined as "the total group of people or establishments whose opinions, behaviour, preferences or attitudes will yield information for the answering of the specific research question" and it may include groups, product, organisations or a number of individuals (Welman, Kruger, & Mitchell, 2005). In this research the population was all students registered for an academic programme that is at least a year or more at NQF level 8 upwards (425 students).

Students attending short courses were considered as they don't use the self-service portal for enrolment.

3.3.2. *Sample and sampling methods*

A sample must be as representative of the population to generalise the conclusions found in the research to others and making it more valid and relevant (Tolmie, Muijs, & McAteer, 2011). The sample is simply a representative segment and not a whole population (Kotler & Armstrong, 2010). Admittedly, there are limitations to reaching the entire population of students in a business school. hence a realistic sample was used. In light of the primary research method used, it was critical that enough time be given to every respondent so as to obtain quality insights. The key aim when selecting the sample was to have a successful study for good generalisation (Salkind, 2013). Alternatively, a census which would seek to interview all students at the business could have been conducted. Evidently, however, this is not cost effective, wasteful, and not necessary. According to (R. A. Kent, 2007) a probability sampling or non-probability sample may be used with all known subsets having a known non-zero chance of selection. In non-probability sampling, certain subsets have little to zero chance of selection to be part of the sample.

Probability sampling is the most commonly used because chance is used to select the sample (Salkind, 2013). Methods under probability sampling are simple random sampling, systematic, stratified and cluster sampling. Most common of these is simple random sampling where subjects have equal and independent chances of selection (Tolmie et al., 2011). The characteristics of the sample and population are largely aligned in essence, and bias is avoided. This method involves a tedious definition, listing and assignment of numbers and use of a chosen criterion to select a sample. Systematic sampling reduces the probability of certain people being chosen which could simplify the sample. In non-probability sampling, convenience and quota sampling are used. The former involves surveying what is deemed a captive audience that is conveniently located and the later selects desired characteristics but does not randomly select from the population.

The scope of the research, amount of time available and the resource constraints in conducting this research were considered in this study. It is in light of these factors that using the non-probability sampling method for the sample was found befitting. Convenience sampling was ideal under the circumstances as found by Creswell and Creswell (2017) who spoke of groups that are formed naturally like classrooms. Students can be found in the vicinity of the business school and therefore it was convenient to interview them. Objectively, a sizable number of conveniently selected students to be interviewed of a minimum 100 to 250 was deemed be adequate; eventually 210 respondents were found and interviewed. The number of people

interviewed is not too little nor is it too many, therefore allowing for generalisability which is important (Tolmie et al., 2011).

Table 1: Programmes enrolled for by interviewees

Programme of study	Code	Number of Interviewees
MBA students	1	61
Postgraduate Diploma in Business Administration students	2	65
Postgraduate Diploma in Management students	3	8
MM-Strategic Marketing students	4	33
MM-Entrepreneurship and new Venture creation students	5	17
MM-Business Executive Coaching students	6	0
MM-Innovation Studies students	7	25
MM-Finance and Investments students	8	0
Total		210

3.4. The research instrument

Interviewing is currently one of the most used methods of getting information (Silverman, 2016) and is especially for understanding experiences and collecting points of views (Turner III, 2010). Self-administered questionnaires have been found to increase response rates (Yu & Cooper, 1983) and can also be cheaper and may take less time (Tolmie et al., 2011) hence their usage in this study. While email and web-based surveys may be less costly and more modern, they sometimes don't yield some of the assumed benefits (Fricker & Schonlau, 2002). Evans and Mathur (2005) assert that online surveys may also be ignored as they are seen as spam, impersonal and have privacy and security concerns. In this study, questionnaires have been used in line with thinking by Cargan (2007) that

- There is increased anonymity

- All questions will be asked to all respondents
- The mood of the interview has no influence because standard is the same
- A number of dimensions can be looked into from the large data collected
- It will cost less for the study to be conducted
- It will may take less time.

The research instrument is a 2 part self –administered questionnaire that interviewed students on campus. Bruhn and Georgi (2006) assert that the Servqual method requests for ratings of expectations and perceptions on a Likert scale. The questionnaire firstly looked to ascertain the expectations and then perception of the service quality on a self-service technology called Wits Students self-service portal. The instrument is based on the SERVQUAL model and hence will look to extract insights on the five dimensions of service quality and gaps namely.

- Tangibles
- Reliability
- Responsiveness
- Assurance
- Empathy

Table 2: Dimensions measured in the questionnaire statements

Dimension	**Respective statements**
Tangibles	Statements 1-5
Reliability	Statements 6-9
Responsiveness	Statements 10-13
Assurance	Statements 14-17
Empathy	Statements 18-22

Three open-ended questions on the schools' website and self-service portal and its functionality were added to obtain greater depth of understanding on some of the

information and answers given in the close-ended questionnaire. To help respondents understand the research study purpose, a cover letter was also provided and a consent request to continue with the questionnaire was also provided.

Appendix A is the research instrument and letter to respondents.

3.5. Procedure for data collection

Upon receipt of an ethical clearance from Wits University, interviews were conducted on campus by the researcher on class dates. The questionnaires were handed out during the start of blocks/classes and collected by the end of blocks/class. In the case where collection was done in a classroom, permission was sought from lecturers; purpose of the study and how much time it would take was made known to the respondents before questionnaires were handed out. Some students were also approached during breaks or in study rooms. The data was then be collated electronically on SPSSS and later exported onto Excel. The usage of self-completed questionnaires takes in mind their knowledge level as guided by (R. Kent, 2001). To reduce error, a pilot question was done with 10 respondents who provided feedback with regards to misunderstandings of questions, grammar and typos that could be found. Pilot-tests are essential for controlling error (R. Kent, 2001)

3.6. Data analysis and interpretation

The data was collated electronically and analysed using IBM SPSS Statistical analysis and GAP analysis were applicable. The study questionnaire sought to ask students about their perception on the five dimensions as per the SERVQUAL scale. A Likert scale ranging from strongly disagree to strongly agree was then used. The answers range from strongly disagree to strongly agree where *Strongly Agree=1 point* , *Disagree= 2*, *Neither Agree nor Disagree=3 points* , *Agree=4 points* and *Strongly Agree 5 points* .According to Tustin et al. the Likert scale was developed by Rensis Likert and is commonly used or best suited for measuring attitudes and feelings. The Likert scale allows for fixed response and leads to ease of data scoring and collating (Tolmie et al., 2011).It is, therefore, the most ideal instrument for surveys. An analysis of the service gaps in the institution was then done to enable management recommendations.

Descriptive techniques are used for data analysis with mean, median, mode and deviations for interpretation. These are often the ways to measure central tendency and can be utilised on ordinal data as in this study (Tolmie et al., 2011). Descriptive statistics help summaries obtained responses.

A GAP analysis method was used to analyse the date in this study. Parasuraman et al. (1985) who developed SERVQUAL and extended service model called the GAPS Model so in support of their definition that service quality was the difference between expectation and performance in the service dimensions.

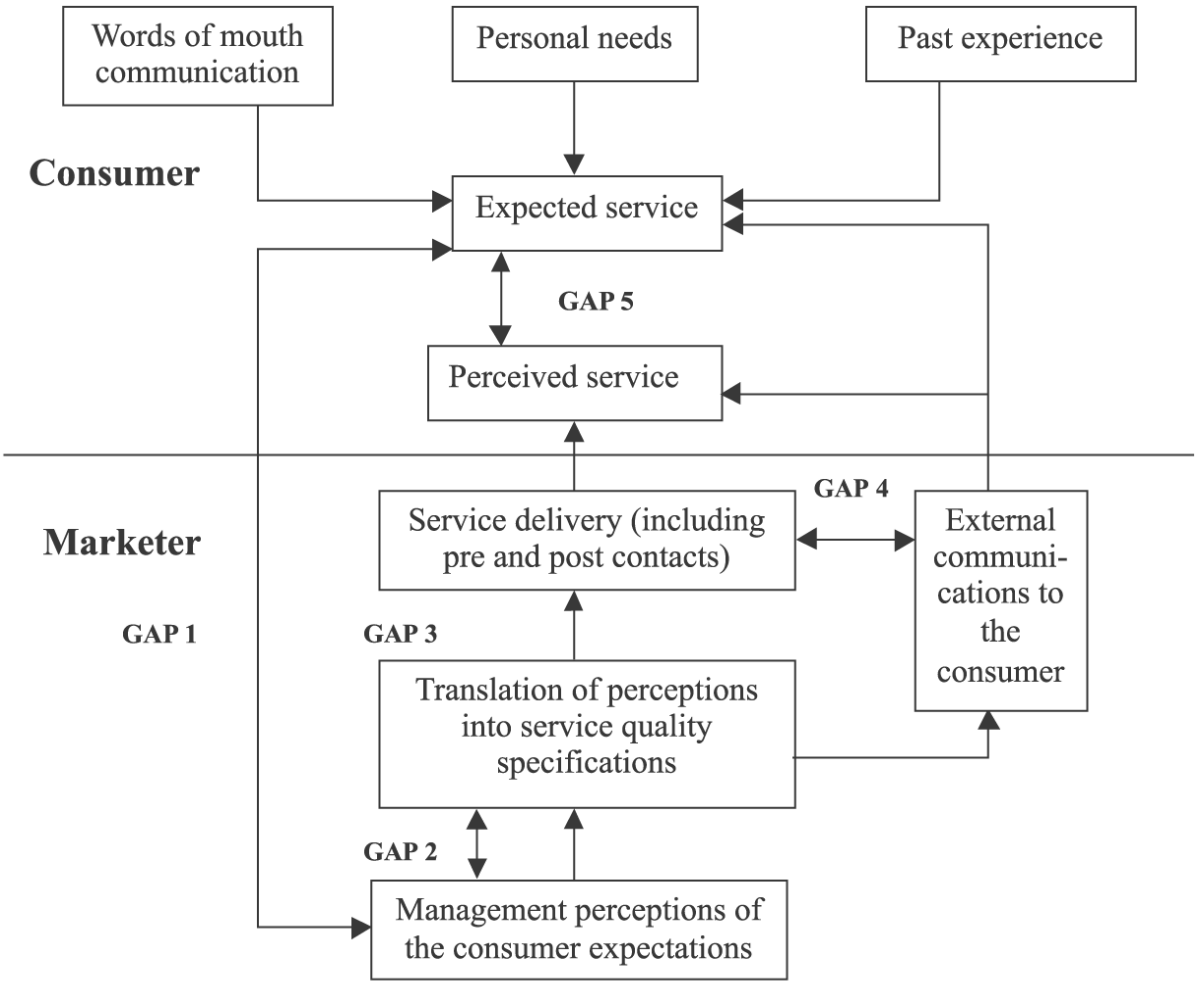


Figure 3: Original GAPS Model

Source: (Parasuraman et al., 1985)

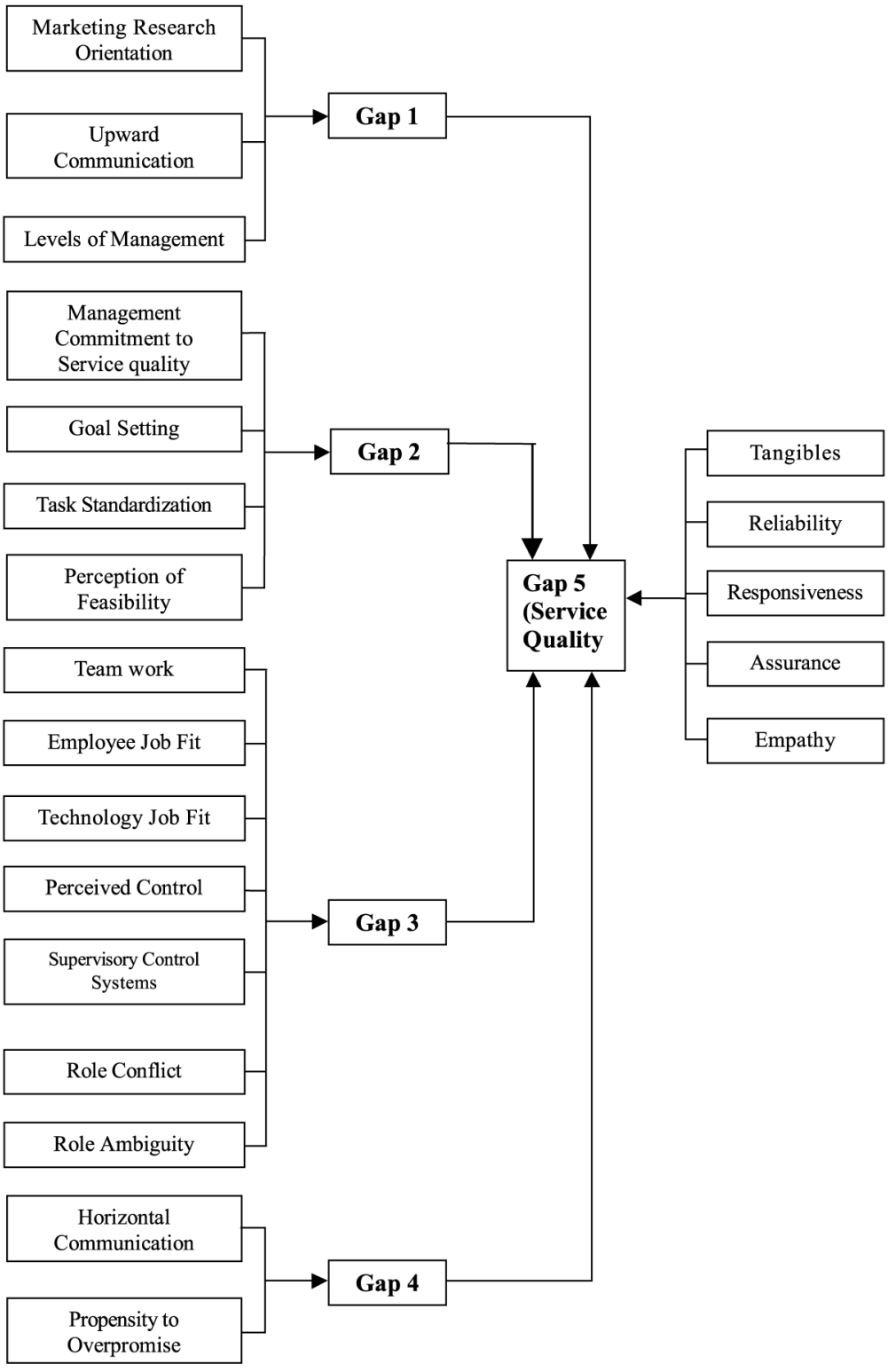


Figure 4: Improved GAPS Model

Source: (V. A. Zeithaml, Berry, & Parasuraman, 1988)

Where there is a positive score in GAP analysis service, it is assumed to have met service expectations, and the reverse is true (Yousapronpaiboon, 2014). Any organisation must desire greater performance than expectations. The GAP model is criticised for not being able to demonstrate how service can be measured at various levels (Seth et al., 2005) but to its credit, it is strongly customer focused and helps exceed the customers' expectations (Bitner, Zeithaml, & Gremler, 2010).

The gaps as seen in the figures above were numbered and defined as follows:

Gap1: Consumers expectations – management perception gap

The difference between management's perceptions and the customers' expectations. When management doesn't understand what quality elements should be included, this can lead to management perception gap (Parasuraman et al., 1985). Silvestro (2005) concludes the same in their study. Management need to constantly interact with customers before setting out priorities to avoid making bad decisions (Valerie Zeithaml, 2000)lists various reasons for this gap such as:

- Inadequate marketing research
- Lack of adequate upward communication-this may emanate from non-existent communication between customers and management, hierarchical challenges due to large layers between employees and executive management or lastly miscommunication or inadequate communication
- Insufficient relationship focuses- this emanates from having no market segmentation, when focus is on transactions and not building relationships with customers and lastly ignoring long standing customers in a dash for new ones

As a solution to the above reasons for the gaps Lovelock recommend that:

- A cycle and habit of conducting research, and ensuring that procedures of market research, sampling and implementation are improved
- Utilise a customer panel, customer complaints analysis and some form of customer feedback system to gauge customer satisfaction
- Middle management and top management interaction must be encouraged and increased.
- Front line and management communication to be increased

Gap2: Management perceptions – service quality specification gap

The internal and external environment and resources may result in management not understanding what customers expect and the specifications of the service, thus affecting service (Parasuraman et al., 1985). When customers' expectations are misunderstood, they will eventually be standards and design faults in the production of services or products.

Valarie Zeithaml ; (Valerie Zeithaml, 2000) suggest the following reasons for this gap:

- Poor service design-emanating from disconnection of service positioning and service design, undefined and vague service design, introducing new unsystematic service development process
- Absence of customer defined standards – emanating from having no customer-defined service standards, having no process management to concentrate on customer's requirements and having no service quality goal setting process
- Inappropriate physical evidence and servicescape

Lovelock (pp. 410-411) proffer the following as a solution to these gaps:

- Install a correct customer service process
- Have a clear, measurable and communicated customer-oriented service standard
- Goals, priorities and standards must be understood and accepted by all employees
- Clear, realistic and explicit service quality goals must be set to ensure expectation by customers are met.
- Repetitive work must be standardised so that there can be consistency

Gap3: Service quality specifications – service delivery gap

This is the gap between actual service and specified quality dimensions where some sort of guidelines are provided for delivery of service (Parasuraman et al., 1985). This

can occur where service standards have not been interpreted and translated to appropriate action (Rosene, 2003) or perhaps resources are in short supply, slack quality control processes, lack of staff training and poorly motivated and uncommitted staff (McDaniel, Lamb, & Hair, 2008)

Valarie Zeithaml (p. 535) proffers the following as possible reasons:

- Deficiencies in human resource policies – these emanate from mashed up roles, bad recruitment and employee-technology fit that is poor
- Failure to match supply and demand-
- Customers not fulling roles -
- Problems with service intermediaries

In light of these possible reasons for the gaps, the following is put forward as possible prescription by (Lovelock, pp. 410-411):

- Build a motivated team that will thrive to meet service standards
- Employee-job fit must be in mind when recruiting
- Soft skills, interpersonal skills and technology must be taught
- All employees must understand clear what their role is in line with meeting customers' needs and expectations
- Have the right and updated technology, capacity and support processes to enhance performance
- Find a balance between productive capacity and demand
- Put together cross-functional teams
- Keep customers educated so that they can help in co-creating good service quality

Gap 4: Service delivery – external communications gap

This the difference between what is communicated in promise to clients and what is eventually delivered to them (Parasuraman et al., 1985). This gap reflects that there have been broken promises through overpromising and, perhaps, the application of

inconsistent procedures and policies in the service touch points (Valarie Zeithaml, p. 540). This emanates from the below:

- Lack of integrated service marketing communication
- Infective management of customer expectations- not deliberately managing expectations of customers
- Overpromising – either at point of sale or in the adverts taken out to customers
- Inadequate horizontal communication - when operations and sales are not communicating adequately

The solution to the above gaps as prescribed by (Lovelock, pp. 410-411)

- Operational capabilities must be understood by the marketing and communications teams so they don't overstate or understate the capabilities of the organisation.
- Do a "reality-check" on communications content

Gap 5: Expected service – perceived service gap

This is the difference between the overall expected product service and perceived service. When it is negative, there is a quality problem that leads to bad publicity and little customer recommendations (Grönroos, 2000). To close this gap there is need to constantly look at measuring service expectation and performance.

Valarie Zeithaml (p. 537) summates that this gap is because of the other gaps

- Unknown customer expectations
- Poor selection of service design and standard
- Inadequate service delivery standard
- Mismatch of promise and performance

3.7. Limitations of the study

The study was limited to business school students at Wits Business School and hence may not be applicable to all schools. A student who may be enjoying their academic journey may possibly now have positive opinions of the school as a whole despite initial perceived bad service and the reverse.

The study is also conducted by an employee of the university who also happens to be a student. This may affect the study in that students may not want to speak badly of the researcher's employer in their presence. Some may also be expecting some responses to their challenges to be addressed, which is not an objective of this study.

Lastly the study only looks at the application process till the orientation and does not cover the evaluation of academic quality, academic content and lecturer's quality of delivery.

3.8. Validity and reliability of research

3.8.1. *External validity*

When incorrect inference is made from the sample to other people or settings and not the current subject of study, then there is a possibility of external validity threats (Creswell & Creswell, 2017). It is important, therefore, to ensure the study is credible through establishing its procedural validity (Creswell & Miller, 2000). The principles on service can be assumed to be true across all institutions of higher learning such as business schools. However, the research is, in all probability, not valid to all business schools as only the Wits Business School was surveyed. Therefore, it was strictly ensured that only Wits Business School students who use the Wits self-service portal were interviewed.

3.8.2. *Internal validity*

As defined by Merriam (1998) internal validity is how theory from literature review will align to research findings. Questions in the questionnaire were confined to getting insights on the topic only. Importantly, to ensure credibility, respondents were given time to answer without the interference or leading to answer in a particular way.

3.8.3. *Reliability*

By computing Cronbach' Alpha coefficients across the sample the reliability of the SERVQUAL scores were attained. Alpha is a systematic variance-accounted-for statistic that estimates the proportion of score variance. A high internal consistency reflects probability of stability of measurements (Tolmie et al., 2011). In practise, to

increase reliability a reasonably large sample, the usage of a pilot to eliminate items that are not clear, a consistent scoring matric, ease of questionnaire were paid attention to as (Salkind, 2013) directs. A pilot study with 10 respondents was done and yielded a high reliability coefficient score of plus .863 for both expectations and reliability. A reliability score of plus .070 is the standard for acceptability (Hair, Black, Babin, Anderson, & Tatham, 2006).

CHAPTER 4: PRESENTATION OF RESULTS

4.1. Introduction

The purpose of this section is to accurately feedback and interpret the research finding of this study and statistical methods used, data coding, data validity and reliability and looking at the descriptive statistics. Key to this process was understanding differences in customers' expectations and their perception after usage of the self-service technologies

4.2. Pilot testing of the questionnaire

Welman et al. (2005) asserts the essentiality of doing pre-testing of a questionnaire using a smaller sample of subjects. Piloting a study allows one to check and refine certain elements of the study which could include the instrument, process and procedure (Robert, 2011). This study was subjected to pretesting to look into the validity and reliability of the questionnaire. Refining of both the questions and language to ensure that the questionnaire can be done in a reasonable time and, importantly, that the questions speak to the objective of the research. 10 questionnaire responses were used to determine reliability using a Cronbach's Alpha calculation.

Table 4: Cronbach's Alpha scores for pilot study

	Valid N	Cronbach Alpha
Expectations	10	.863
Perceptions	10	.863

A Cronbach's alpha coefficient of 0.863 for customer expectations and 0.863 for customer perception indicated that the questionnaire was reliable as the score was over 0.70 which shows high internal consistency.

4.3. Demographic profile of respondents

Table 5 shows the profile of respondents in regard to their gender, age and year of registration.

Table 5: Demographic profile of respondents

Variable	Data	Count	Percentage
Gender	Male	105	50%
	Female	103	49%
	Undefined	02	1%
TOTAL		210	100%
Age	16-25	15	7%
	26-35	129	61%
	36-45	58	28%
	46-55	3	1%
	Unknown	5	2%
TOTAL		210	100%
Year of Registration	2017	5	98%
	2018	205	2%
TOTAL			100%

4.4. Tangibles dimension of Self-service technologies and its effect on perceived service quality at a business school

Figure 5 shows a comparison of the responses on the Likert scale in regard to Tangibles. The majority of responses were neutral or neither agreed nor disagreed on business school self-service portal having good tangibility elements.

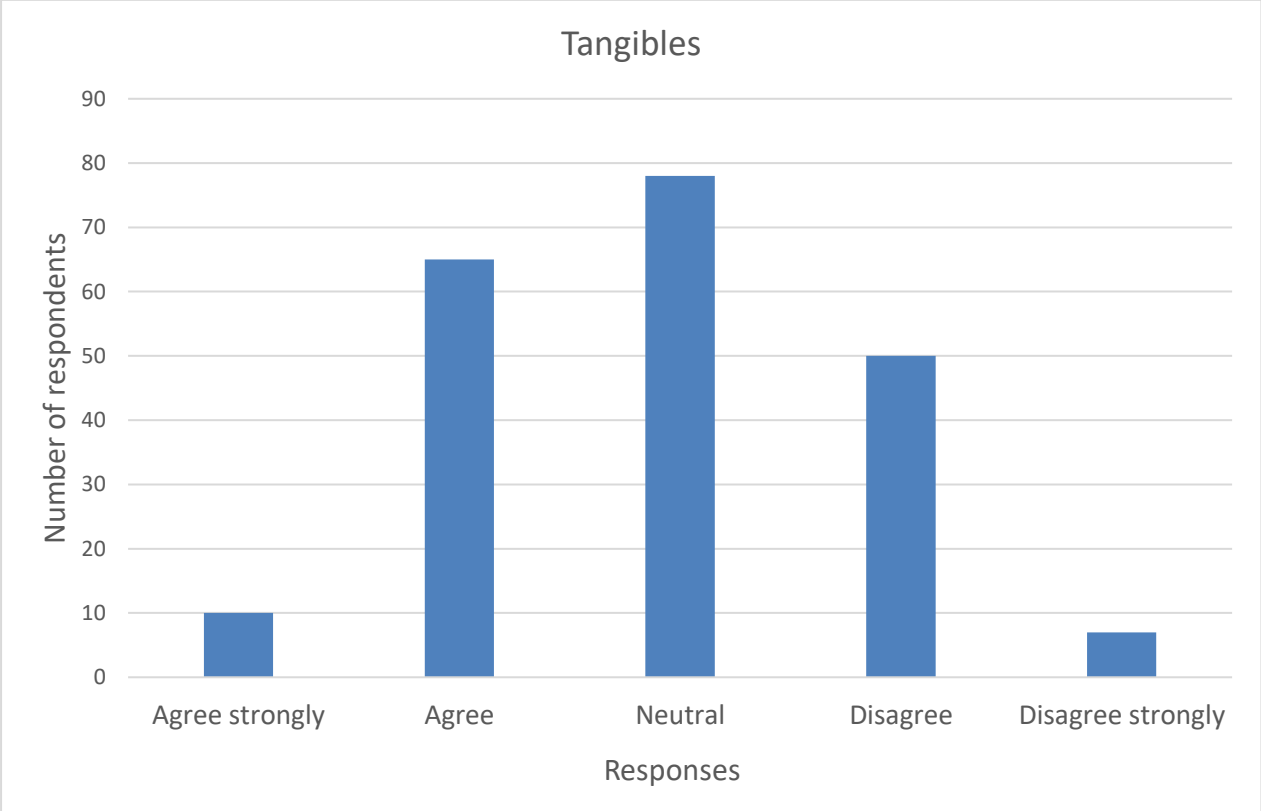


Figure 5: Count of responses pertaining to the tangibility dimension

Table 6: Descriptive statistics of the tangibility factor

Tangibility Dimension	Expectations (P)	Perceptions (E)	Gap-Score (P-E)
TL1 (*Good looking portal)*	4.5	3.0	-1.5
TL2 *(Morden self-service portal)*	4.6	2.9	-1.7
TL3 *(Well-designed self-service portal)*	4.7	2.8	-1.9
TL4 *(Fun and enjoyable portal)*	4.2	2.7	-1.5
TL5 *(Not amateurish)*	4.5	3.0	-1.5
Average	4.5	2.9	-1.61

Table 6 above reflects the mean of Expectations, Perceptions and the gap scores of the tangibility items. They indicate an average gap score of -1.61 indicating greater expectation of self-service technology tangibility than they actually are after experiencing them in usage function. In order of expectations, the tangibility factor is third highest of what students expect from self-service technology services, after their reliability and assurance which rank higher. Perceptions of this were low reflected in a low average perception score of 2.9 that was matched by the average perceived Empathy factor.

The biggest gap was in TL3 which questioned whether the self-service portal was well designed. Customers expected a better design of the self-servicer portal and their perceptions were not changed resulting in a gap score of -1.9 which above the average gap score for all tangibility factors. This gap was also evident in question TL2 questioning if the portal was modern and received a gap score of -1.7. While perceptions of modernisation of the self-service technology were at 2.9, the expectations, however, had been high at 4.5.

A mode of 5 was found in expectations which means most people strongly agreed with the need for good tangibles in the service portal and much to their disappointment most strongly disagreed (mode 2) that the school's self-service portal has good tangibles.

4.5. Reliability dimension of Self-service technologies and its effect on perceived service quality at a business school

Figure 6 and Table 7 show a comparison of the responses on the Likert scale in regard to Reliability. The majority of responses disagreed or were neutral on the school's service portal having good tangibility elements.

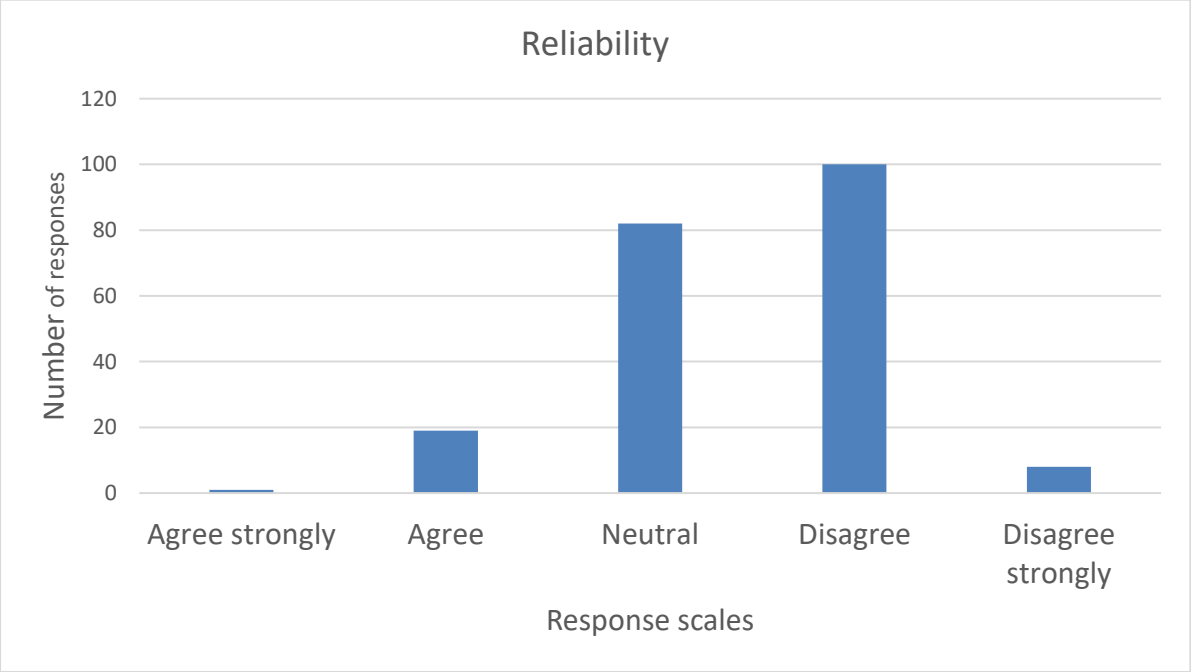


Figure 6: Count of responses pertaining reliability

Table 7: Descriptive statistics of the Reliability Factor

Reliability Dimension	**Expectations (P)**	**Perceptions (E)**	**Gap-Score (P-E)**
RL1*(Time responses)*	4.5	2.6	-1.9
RL2 *(Accurate fee/registration information)*	4.7	3.4	-1.3
RL3 (*Application info accuracy versus at registration)*	4.7	3.8	-0.9
RL4 *(Up to date personal information)*	4.7	3.6	-1.1
Average	4.7	3.3	-1.3

The Reliability factor has the highest expectations from students. It is evident that of all things a service portal should provide for them is the sense that it can do consistently that which it's designed to do. Average expectation for Reliability was 4.7 and the average perception score was 3.3 and thus an average gap scores of -1.30. While in comparison with other factors this gap was not as bad as others, it was still negative and reflects unmet expectations.

Question RL1, which speaks to self-service portal communication and being responded to in good time, had the lowest expectations of 4.5. The business school via its portal evidently didn't deliver on timeous responses as perception was very low at a mean of 2.6. This question of reliability of response time had the lowest perception score of all factors in the questionnaire and only matched with a similar question of Empathy which spoke to the similar issue of responses.

The question of student information being the same at registration and after as asked in RL3 had the lowest gap score of -0.9 which reflect a better management of information loaded by students but an improvement is needed in the wake of it being

negative. The total mode of 4 for reliability reflects that most people agreed with the perception of a reliable self-service portal.

4.6. Responsiveness dimension of self-service technologies and its effect on perceived service quality at a business school

Figure 7 shows a comparison of the responses on the Likert scale in regard to Responsiveness. The majority of responses were neutral or neither agreed nor disagreed on the school's self-service portal ability to be responsive.

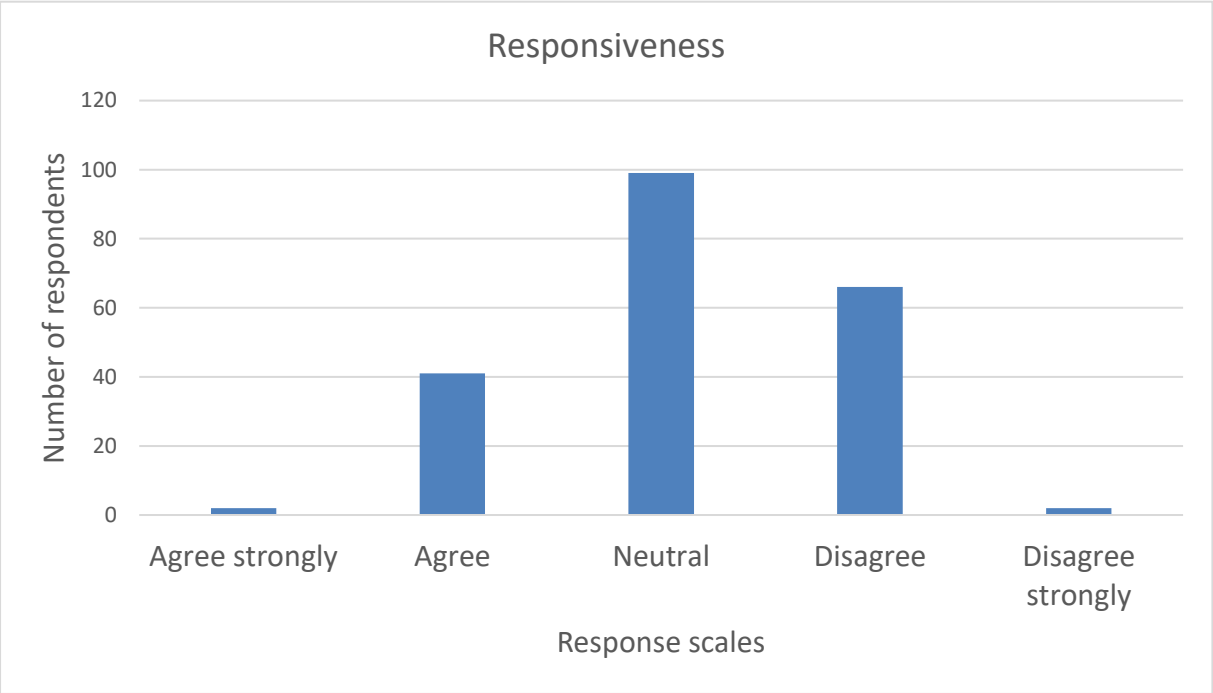


Figure 7: Count of responses pertaining Responsiveness

Table 8: Descriptive statistics of the Responsiveness Factor

Responsiveness Dimension	**Expectations (P)**	**Perceptions (E)**	**Gap-Score (P-E)**
RS1*(Helpful staff in portal failure)*	4.6	2.9	-1.7
RS2 *(Interactive self-service portal)*	4.4	2.7	-1.7
RS3 (*Timeous responses)*	4.6	2.8	-1.8
RS4 *(Ability to accept/decline offer on portal)*	4.5	3.6	-0.9
Average	4.5	3.0	-1.5

The high expectations were that customers, in the result that the self-service portal having challenges (RS1), staff members would be helpful or restore the self-service portal. Responses to enquiries and changes made on the self-service portal were expected to reflect and also be responded to in good time (RS3) as reflected by scores of 4.6 in expectations, which was higher than the total average expectation on the responsiveness factor.

The ability to receive an offer and also accept it online (RS4) had the highest perceptions at 3.6 and expectations had been high at 4.5, therefore giving it a gap score of -0.9. The highest gap score (-1.8) was in regard to RS3 as it seems responsiveness to changes and updates on the self-service portal were not meeting expectations. This gap is also one of the largest in all the questions students were asked to reflect on.

4.7. Assurance dimension of self-service technologies and its effect on perceived service quality at a business school

Figure 8 and Table 9 show a comparison of the responses on the Likert scale in regard to Assurance. The majority of responses disagreed on the school's self-service portal ability to be provide assurance, with a similar number neutral about its ability to provide assurance.

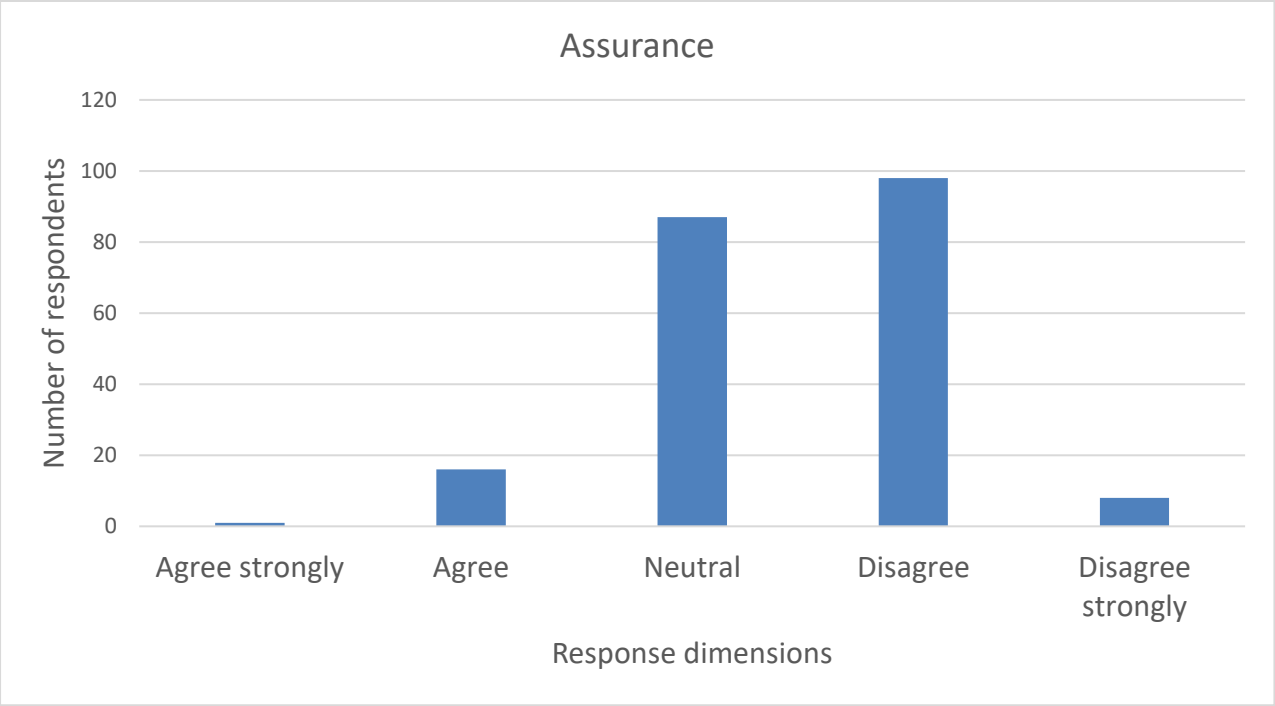


Figure 8: Count of responses pertaining Assurance

Table 9: Descriptive statistics of the Assurance Factor

Assurance Dimension	**Expectations (P)**	**Perceptions (E)**	**Gap-Score (P-E)**
A1*(information consistency)*	4.5	3.4	-1.1
A2 *(Competency and accurate answers)*	4.5	3.1	-1.4
A3*(Safety of online payments*	4.8	3.6	-1.2
A4 (*Polite staff in service recovery)*	4.7	3.2	-1.5
Average	4.6	3.3	-1.3

The school achieved an average perception score on providing assurance to students at 3.3 despite high expectation as most of them strongly agreed on the need for the self-service technology to provide assurance. High on the expectations was question A3 which spoke to safety of online payments and information security. The business school did well in this regard as the customers mostly agreed that there felt safe using the portal to make payments online as underscored by a 3.6 mean score. However, there was a perceived sense that perhaps the people who load the information on the self-service portals may not be very competent, leading to a gap score of -1.4 as per question A2.

4.8. Empathy dimension of self-service technologies and its effect on perceived service quality at a business school

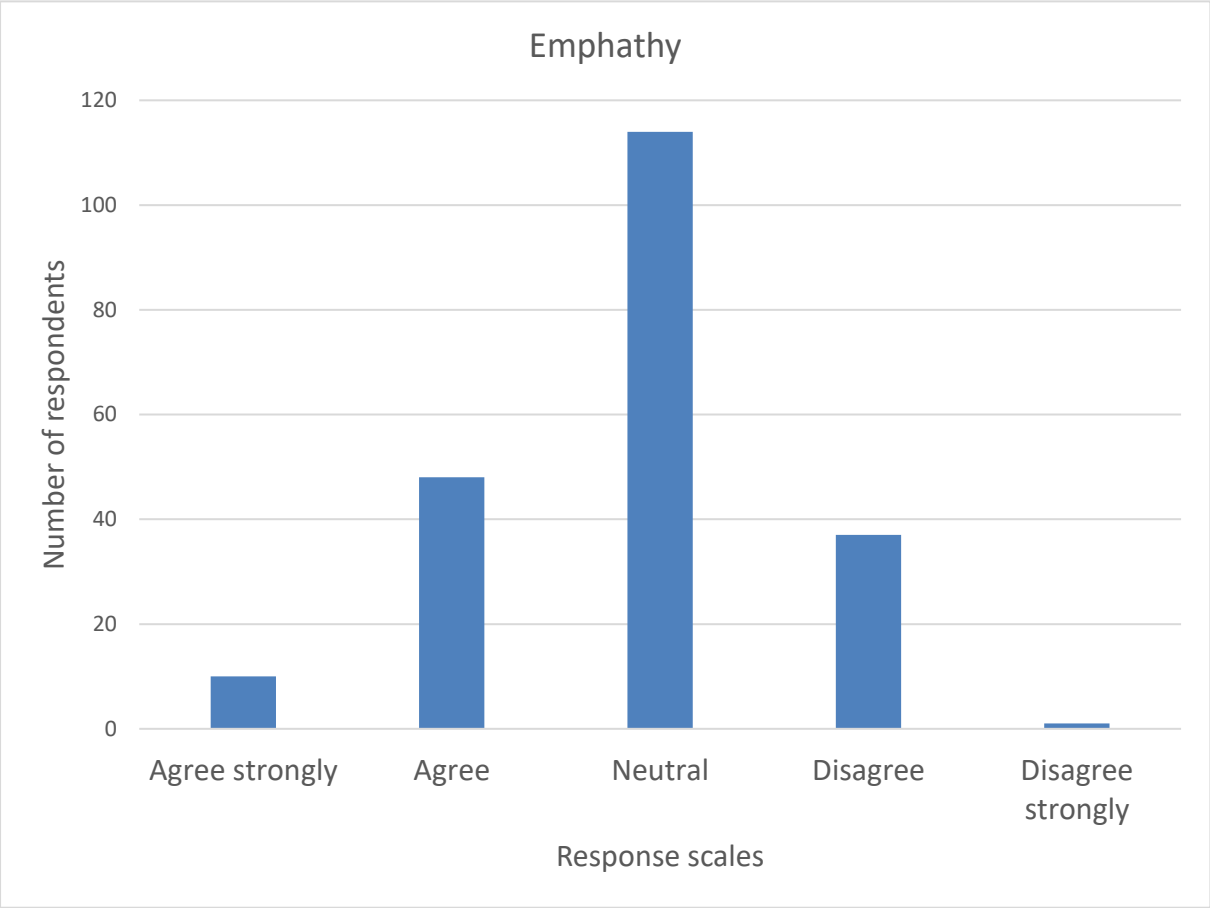


Figure 9: Count of responses pertaining Empathy

Table 10: Descriptive statistics of the Empathy Factor

Empathy Dimension	**Expectations (P)**	**Perceptions (E)**	**Gap-Score (P-E)**
E1*(24 hours presence and response)*	4.0	2.6	-1.4
E2 *(Personalisation of self-service portal)*	3.8	2.6	-1.2
A3 *(Provision of a contact or Help function on portal)*	4.5	3.0	-1.5
E4 *(Empathetic staff)*	4.4	3.1	-1.2
E5 (*Feeling of empathy and appreciated)*	4.4	3.1	-1.4
Average	4.2	2.9	-1.26

In summary, the students found the organisation to be unable to communicate any empathy through the self-service portal as reflected by the average 2.9 score on Empathy. The low score was largely from the institution not having a continuous online presence or attending to enquiries continuously as reflected in question E1's 2.6 score and lack of personalisation as reflected by E2's 2.6 perception score after using the portal. Of interest was that despite all other expectations on Empathy having a mean score of 4 and mode of 5 and above, therefore indicating they strongly agreed on the need for personalisation, the respondents, however, had a mean sore of 3.8. The largest gap score was found in E3 which sought to ascertain if they found a help or contact function on the self-service portal.

4.9. Self-service technologies and their effect on perceived service quality at a business school

The below graph represents the overall responses to the various service dimensions. Evidently, the largest number of responses were neutral (neither agreed nor disagreed) with the Empathy dimension having the highest neutral responses. From the responses there was evidently, very little in terms of “strong” responses whether in agreement or disagreement.

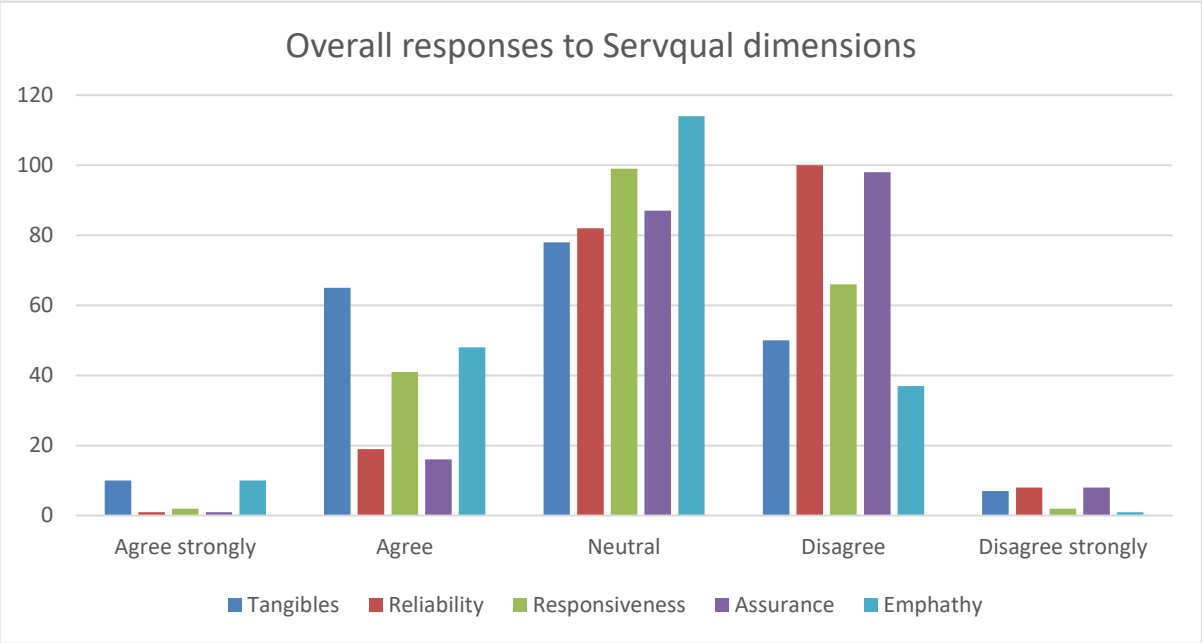


Figure 10: Count of responses pertaining to all Servqual dimensions

Table 11: Descriptive statistics of overall service quality of perceptions of self-service technology

Dimension	Expectations (P)	Perceptions (E)	Gap-Score (P-E)
Tangibility	4.5	2.9	-1.61
Reliability	4.7	3.3	-1.3
Responsiveness	4.5	3.0	-1.15
Assurance	4.6	3.3	-1.3
Empathy	4.2	2.9	-1.26
Average	4.50	3.08	-1.38

CHAPTER 5: DISCUSSION OF THE RESULTS

5.1 Introduction

A discussion of the results and the interpretation of results is given below on all the hypotheses noted in the study. Essentially, they outline a reflection on the results of the GAP analysis on every dimension and the possible influence of self-service technology. A reasonable explanation is given were gaps have been found.

5.2 Tangibles dimension of self-service technologies and its effect on perceived service quality at a business school

While tangibles are often associated with physical facilities in most service assessments, it can be observed that students place a high premium on the tangibles of the self-service portal as shown by a mean of 5 (Strongly Agree) on their expectations of self-service portals. However, after experiencing the Wits Business School self-service portal, their views were neutral about the tangible factors of the WBS self-service portal. Their views of self-service portal tangibles were also neither positive nor negative and the hypothesis that self-service technologies have a positive impact on perceptions of tangibles at a business is rejected. Contrastingly, in the another study in Thailand (Yousapronpaiboon, 2014) where physical buildings and facilities were utilised, these were deemed to be most essential to shift perceptions and reduce the gap between expectations and perceptions.

While studies like those by Tomkovick et al. (1996) found tangibles to be the most important to students, this may not necessarily be so based on finding on expectations from this study. However the importance of design is evidenced in this study as expectations in tangibles were high in line with findings of Yoo and Donthu (2001) and Van Riel et al. (2001) who advanced the importance of the user interface. This also further supports thinking by Bitner et al. (2002) that customers dislike badly designed self-service technologies. Tangibility question 3 (TL3), which spoke to design, had the biggest gap score between perception and performance. Customers simply expect better in terms of design and a better score with regard to performance may have reflected that self-service technologies have a positive impact on perception of customer service.

Some studies have found that when servicescapes on self-service portals are well designed they increase the sense of control (Collier & Barnes, 2015). Perhaps in this case the neutral view of students on the self-service portal may be that they neither felt a sense of control from looking at the tangibles of the portal. Of interest was that

of all tangible factors measures, students didn't rate the need for enjoyment as they did with all other factors. In their study Dabholkar (1996) posit that a seemingly fun self-service technology is most likely to be utilised and therefore one may have expected that fun was rated highly amongst the tangibility elements.

Perhaps the high expectations may have resulted in students not finding a positive performance by the self-service portal or perhaps as V. A. Zeithaml, Parasuraman, and Berry (1990) indicated that personal needs and previous experiences may influence expectations and, importantly, customer satisfaction is a product of consumers initial expectations (Solomon, Surprenant, Czepiel, & Gutman, 1985). In the South African context other studies such as Green (2014) have shown that a premium is placed on tangibles. Perhaps students are simply hard to please in this area of tangibles and using self-service tangibles doesn't alter their expectations.

5.3 Reliability dimension of self-service technologies and its effect on perceived service quality at a business school

Reliability in this study had the highest expectations amongst all Servqual dimensions. It would seem that it is important that self-service portals simple deliver consistently on what they say they can do. In the self-service portals context Van Riel et al. (2001) found that reliability was of the outmost importance of all factors, in line with expectations of the respondents in this study. Expectations on reliability have a mean of 5 (Strongly Agree) on the Likert scale and perhaps confirming findings by Lovelock and Wright (2001) that reliability is the most important service dimension. The results in this study are also consistent with finding by Jiang et al. (2016) on reliability being foremost for customers to perceive good customer service as reflected by the expectations in this study.

This business school did not respond well and fast enough to communication and this resulted in the reliability gap. Meuter et al. (2000), in line with the findings of this study, attest to the importance of prompt responses to deliver reliability. When customers are not responded to with accurate information or in time, this is becoming a bad customer experience and negative moment of truth. These moments of truths are important as they are used to evaluate how customers deal with the brand in future (Van Doorn & Verhoef, 2008).

For reliability to be achieved, there is also a need that customers, the organisation or both, help with service failures. Bitner (1990) asserts that the firm must have a system of service recovery. Often this is easy in face-to-face interactions of service but may

be difficult with self-service technologies. In the case of this study, student records and information were looked into - reliability therefore demands that in the case that these are not accurate the student must be able to make the necessary changes as soon as possible which would be customer recovery. However, in the case of something such as a fees quotation that is inaccurate, the service recovery may possibly be only done by the business school.

Face-to-face service encounters allow for explanations from employees and perhaps compensation in the case that a service encounter has not been satisfactory (Bitner, 1990).This element may be the reason customers using self-service portals may not find reliability or responsiveness when utilising self-service technologies as in the case of this study. Self-service technologies such as the self-service portal of the business school perhaps don't provide what Mascarenhas et al. (2006) called emotional involvement moments hence don't positively affect the perception of customer service. Grönroos (2001) asserts that technology is one the factors that services rely on. If technological innovation is upped, the business school can still provide reliable and consistent service to students with adequate service recovery as every customer touch point including the self-service portal, website or web application. This thinking was underpinned by Meuter et al. (2000) who noted how self-service technologies help increase efficiency and therefore, reliability.

Reliability can also be measured through the accurate provision of billing information and general information as Janda, Trocchia, and Gwinner (2002) found. However, this study was not able through R2 and R3 to ascertain if customers perceived positively the customer service of the business school because of reliability. Most student neither agreed no disagreed despite a generally high expectation that information would be accurate.

5.4 Responsiveness dimension of self-service technologies and its effect on perceived service quality at a business school

Responsiveness had high expectations amongst the Servqual elements, with most respondents strongly agreeing on all questions and therefore an expectation score of 4.5 in line with finding by Z. Yang et al. (2005) about importance and ability of self-service technology to allow for human and technological interaction leading to good service. Regrettably, the school didn't respond timeously to changes or enquiries and this led to the biggest gap score among all elements in the study, barring the ability to accept or decline offers on using the self-service portal. Responsiveness may have

scored low with a high gap because, as reflected in RS1, there was no personal contact backup which can annoy customers when they deal with self-service portals and experience service failure at critical moments of truths (Reinders, Dabholkar, & Frambach, 2008).

In this study, the expectation for staff helpfulness or contact in case of service failure was very high. Perhaps, as stated by Walker and Johnson (2006), customers may prefer human interaction when they think there is a risk or some anxieties as this may give them a faster response. Anxieties around changing information on the self-service portal or acceptance or declining of offers may seem easier with someone on the line than lodging a complaint or enquiry online and then checking later for changes made. The perceived lack of what Mascarenhas et al. (2006) call emotional involvement moments may be a factor at play with usage of self-service technology. That said, self-service technologies could still be a source of providing improved customer service (Bitner et al., 2002).

The results on perception of timeous responses or getting feedback with ease by respondents was inconsistent with Considine and Cormican (2016) who found that self-service technology made things easier and smoother. In this study, the respondents neither agreed nor disagreed on whether the self-service portal was interactive, or responses were in good time.

With regards to question RS4 which spoke to acceptance of offer online, it would seem that most customers agreed that this was possible and thus scoring the second highest perception score of 3.6 and a low gap score of 0.9. Perhaps the ability to simply accept or decline an offer at the click of a button supports the notion of perceived ease of use as introduced by Davis et al. (1989) in their Technology Acceptance Model (TAM). Responsiveness, therefore, can be achieved with self-service technology.

5.5 Assurance dimension of self-service technologies and its effect on perceived service quality at a business school

Key to the provision of a service is to provide assurance which may be through the courtesy and confidence of employees, or perhaps self-service portals security (Petersen, 2001), or provision of accurate and consistent information. Based on the results obtained in this study, this self-service portal could not give assurance to customers, nor did it put them at ease. Most students neither agreed nor disagreed on the portals ability to provide assurance as reflected by perception score of 3.3. However, an average expectation mean score of 4.6 and mode of 5 which means most

students strongly agreed that they expect assurance when using the self-service portal. Security speaks to ensuring that there is a bridge of trust where the portal is in use (Urban et al., 2000) and results from question A3 on making of payments online are in tandem with findings by Tate et al. (2007) that students were not completely feeling safe. These risks can either be systematic dependent risks or transactional risks as concluded by Q. Yang, Pang, Liu, Yen, and Tarn (2015). It becomes essential, therefore, that the perception is managed well. Not surprising in this study, were the high expectations with regard to ensuring that online payments are safe.

This paper corroborates findings in another South African university that assurance has the highest expectations and perception scores in face-to-face service encounters (Green, 2014) and self-service environment as in this study. With Reliability, expectations scores were highest for Assurance perhaps because of the need to provide security . Chen, Liu, Lai, Chang, and Lee (2017) substantiated that safety quality was more important than service quality in any online payment platform as the service portal has been used in the business school.

Ponte, Carvajal-Trujillo, and Escobar-Rodríguez (2015) concluded that of the key drivers of perceived trust is perception of security and quality of information in online platforms. Information quality is one of the major determinants of customers satisfaction (Kuo, Lu, Huang, & Wu, 2005). This study's finding perhaps corroborates this thinking as customers strongly agreed on the need for accurate and consistent information as reflected in question A1 and A2. Furthermore, Al-Debei (2014) assert that information quality is the most essential factor to get a positive perception and continued use of a technological platform. This, from the study, was not achieved by the business school and may have led to no positive views by students. Importantly however, they neither agreed nor disagreed on whether this self-service portal security or quality of information was up to standard, but it essentially didn't meet expectations as evidenced by the high gap score.

Based on the data, this study could not ascertain if the usage of self-service portals enabled the provision of assurance as the students could neither agree nor disagree whether they felt assured.

5.6 Empathy dimension of self-service technologies and its effect on perceived service quality at a business school

Empathy, together with tangibility, had the largest gap scores from results obtained. The business school was unable to communicate empathy to their customers through

the self-service platform. The lack of personalisation of the self-service technology was a key factor and this going in contrast with what scholars such Mittal and Lassar (1996) found to be of the most critical thing with services. All customers must not be treated the same or given the same information where they have provided their unique information and have different needs. Ashman, Brailsford, and Brusilovsky (2009) proffer that with most web portals presenting a lot of information, it becomes important to personalise. This will allow customers to navigate what is essential for them and not go through all the information on the self-service portal. Perhaps the low gap score on Empathy is connected to the low score on Tangibility. The self-service technologies have been badly designed and hence frustrating to use and this was reflected in the user perception that there was little empathy exhibited.

While self-service portals may remove the human interaction, the need for interaction is still essential and can be achieved through the use of chat boxes, forums amongst other users and message boards (Z. Yang et al., 2005). The availability of these would also speak to a continued online presence by the school. In this case, the results indicate that there was no visible contact function and no continuous online presence and hence the business was not exhibiting any empathy. Often, this perceived lack of empathy leads to customers insisting on speaking to service personnel (Meuter et al., 2000) and can see staff duplicating work that the portal should be helping them with. A number of customers expressed displeasure when dealing with service staff who themselves may be overloaded with work as business schools deal with thousands of applications and information requests. Rising labour costs have contributed to usage of self-service portals (Lin & Hsieh, 2011) and therefore the school may be having less personnel because of cost challenges leading to dissatisfaction by customers.

In conclusion when asked if students felt valued as per question E5, they neither agreed no disagreed and therefore, perhaps, the self-service portal has had no effect on the perception that business schools are empathetic towards stakeholders.

5.7 Conclusion

Based on results in this study, the usage of self-service technologies has not had a positive or negative effect on perceptions of customer's service quality on all dimensions of tangibility, reliability, responsibility, assurance and empathy. In contrast with face-to-face interaction, there has been positive effects on customer service quality and negative effects in various studies in higher education.

CHAPTER 6: CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

With chapter 4 and 5 covering the hypotheses and results, this chapter summarises the conclusions and recommendations deduced from them. Presented are the conclusions of the study, implications and recommendations for future research, marketing implications and contributions of the study to greater body of knowledge.

6.2 Conclusions of the study

Using an adapted Servqual method this study sought to understand the impact of self-service technologies on perception of customer service quality. While many studies have measured service quality in face-to-face environments, this study sought to interrogate the effects of using self-service technology during the application stage. Athiyaman (1997) concluded that pre-enrolment attitudes had no implication on post enrolment attitudes and therefore a two-part survey which looked into expectations before use and perceptions after usage of the self-service portal was used.

The study found that self-service technologies do not necessarily positively influence perception of customer service quality as the students could neither agree nor disagree on a shift of perception of the various elements surveyed on. Studies such as Naidoo (2014) suggested that an increased focus on self-service technology was necessary because they improve service in education, but this many not be conclusively so.

The study contributes to better understanding if the introduction of self-service technology usage will result in positive perceptions of business school's customer service quality. While some studies have indicated that self-service portals increase efficiency and service performance, customers may not be shifted to agree with this view, necessarily, as some continue to want face-to-face interactions than interface with business schools via technology.

This study affirms recent studies in other African countries that found that technology was not up to date in most higher education institutions in Africa (Rivers, Rivers, & Hazell, 2015). Students finding self-service portals not necessarily aiding positive perception of self-service may be because the standards are not high and there are few African examples of good self-service portals in higher education.

6.3 Theoretical and managerial implications

For managers in business schools looking to make improvements on their self-service portals, a couple of recommendations arise from this study with regards to the various service quality dimensions and website:

- Tangibles – There is a need to ensure that tangibles have an improved look and feel as this forms part of the impression students make of an organisation. When a portal or website looks amateurish, the assumption may be the same about the business school and its operations. The interface of the website or portal must be well-designed, with the customer in mind, not the organisation. Websites of business schools sometimes have a lot of unnecessary information for the prospective student and they find themselves having to navigate through too much information when they simply want to apply. Where a virtual agent or customer assistance option is available, it must be very visible or allowed to pop up to ask customers if they want help. Lastly, ease of use is the ultimate goal, if it's not easy it's not useful.

  Marketing material utilised must be well-aligned with service and branding principles. Well-designed material creates expectations and excitement for prospective students, yet, in the same breath, if it's poorly done may create negative effect. It is essential that on marketing material, all possible forms of self-service options be made known to the prospective student.

- Reliability – In the realm of service there is need for timeous replies and accurate information, always. Customers must be confident that the information displayed is accurate presently, hence there is need for daily and consistent checks of portals and the website. The usage of a virtual agent entails that they be knowledgeable so as to provide concise and contextually relevant information. In the application phase, there is a lot of nervousness by applicants and the web portal or website should not add to the already existing anxiety. There is also a need that management ensures that the web portals are mobile friendly. With most people using the internet from their phones, it is paramount. To add to this, the app must always work well.

- Responsiveness – prospective students, despite enjoying usage of self-service technologies, still want to feel like they can interact with the school or someone and hence the need to introduce chatbots and similar technologies to make them more interactive. The ability to have a conversation on a portal or website is

invaluable to clients and gives on-time response. Chatbots simulate what a customer would experience in a face-to-face environment. Utilising machine learning technology and voice recognition would make it possible for management to increase options of interacting via schools' self-service platforms. A smart virtual agent (online assistant) of sorts is now essential to improve customer experience.

- Assurance –security and accuracy of information is paramount and therefore it is essential that information is constantly edited, and also importantly, that it is aligned on both portals and marketing materials. Security technology must be at the highest levels, thus ensuring that customers feel secure with their information online and, importantly, making sensitive transactions like payments on the platforms.

- Empathy – A good back-up team to help customers is a must. From the study, one realises that service quality is continuous and hence so must be learning by the staff members. There must be an alignment of knowledge on self-service technology and by staff. A key process in providing empathy is to be able to access customer information quickly and easily so one can personalise service immediately. Service, by its nature, has challenges, hence customers must be given clear indications who then escalate an issue to in the event they have challenges with staff or the technology, allowing for quicker service recovery. Traditional call centres are now seen as places were students escalate issues rather than the first point of contact and therefore it's important that management empowers employees so they can make final and definite decisions.
    - Increased marketing/communication on platforms as most students don't use the portals or the App
    - Website must user friendly, have better navigation and mobile friendly

In line with findings by Scherer, Wünderlich, and Von Wangenheim (2015) it may not be advised to introduce self-service technologies completely in the short-run to allow customers to adjust to the change. Utilising both self-service and face-face service centres would be ideal for the business school.

Theoretically, there is need to understand more and more how each dimension of service quality may be affected by transition to self-service technology. Little is known thus far in that regard, with many studies having focused on tangibility which speaks to buildings and facilities in face-to-face service interaction and websites design in the

self-service arena, with the empathy dimension having seen the most neutral responses.

6.4 Suggestions for further research

With extensive studies done in the area of service quality in higher education and self-service technologies, there are new elements that scholars can look to understand and explore deeper, such as whether certain demographics have a better service quality perception with the usage of self-service technologies, whether age of user is a factor in preference to use self-service technologies, if co-designing of self-service portals improves perceptions, measuring and understanding metrics for self-service technology versus face-to-face interactions, usage of data analytics to personalise self-service portals and language – could perceptions shift when language is personalised? The fast-changing nature and improvements of self –service technologies and its effects on service perception could be areas of future study. Technological changes sometimes cause a lot of anxiety which may lead to hesitation to use them.

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APPENDIX A: ACTUAL RESEARCH INSTRUMENT



Dear Participant,

You are invited to participate in an academic research study conducted by Lawrence Dube, Masters Student in Strategic Marketing from Wits Business School, at the University of Witwatersrand.

The purpose of the study is to understand the impact of self-service technology on your perception of the customer service quality at Wits Business School

Please note the following:

This is an anonymous study survey as your name will not appear on the responses provided. The answers you give will be treated as strictly confidential as you cannot be identified in person based on the answers you give.

- Your participation in this study is very important to us. You may, however, choose not to participate and you may also stop participating at any time without any negative consequences.
- Please answer the questions in the attached document as completely and honestly as possible. This should not take more than 15 minutes of your time.
- The results of the study will be used for academic purposes only and may be published in an academic journal.

Please indicate your acceptance or refusal to complete the survey by ticking on the options below.

- I agree to continue with the survey
- No, I do not agree to continue with the survey

SERVQUAL: EXPECTATIONS

Gender		Age	
Academic Programme		Date	
Year of Registration			

*Please indicate **by way of ticking** how much you are agreed or disagree with the below statements in as far as your **expectations** were for the Wits Self-service portal*

Using scales given, tell me your opinion on the following:	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
1. The business schools must have good looking self-service portal					
2. I expect more modern self-service portal that is up to date like other schools' portals					
3. The self-service platforms must be well designed					
4. Business school self-service portal must be fun to use and enjoyable					
5. The business school's self-service portal must not look amateurish					

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
6. Communication sent via Wits Self-service must always be responded to in time					
7. Fee quotation and registration information must be accurate on Wits self-service portal					
8. The information I submit at application stage on the Wits self-service portal must always be accurately reflected when I am online					
9. The student records and personal information must always be available and up-to-date on Wits Self Service portal					
10. Staff members must always be helpful and available when having challenges with self-service portal					
11. Self-service portal must be interactive in nature					
12. Responses to my enquires and changes must be in good time without excuse					

13. I must be able to receive, accept or decline the offer to study on Wits Self-service portal					
	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
14. The course information I get at application is expected to be the same when I register					
15. I expect the people that load the information on portals to be competent and have answers					
16. I expect that Information I share such as bank details when paying fees online must safe					
17. Call-center staff must be polite and kind should I have a challenge using or Student self-service portal					
18. Applicant's online queries must be responded to around the clock (24 hours online presence)					
19. The self-service portal must be personalized					
20. Good business school must have a Contact or Help function on its self-service portal					

21. The staff at WBS should be empathetic					
22. I expect to feel appreciated and valued as an applicant and student					

SERVQUAL: PERFORMANCE

*Please indicate by way of **ticking** how much you are agreeing or disagree with the below statements in as far as your **perception of the performance** of the Wits Self-service portal*					
Using scales given, tell me your opinion on the following:	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
1. I found Wits self-service portal very appealing with a great look and feel					
2. The Wits -self-service portal is modern and up-to-date					
3. The Wits self-service portal is well designed					
4. The business school's self-service portals are enjoyable and easy to navigate					

5. The self-service portal looks professionally done in line with WBS reputation					
6. I was responded to on time when I made communication on Wits Self-service portal					
7. My fees quote and registration is accurate on the self-service portal					
8. My information is accurately reflected on the Wits self-service portal					
9. My student records and personal information are readily available and are up to-date on Wits self-service portal at this stage					
	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
10. The staff were always available and helpful when I had challenges with the self-service portal					
11. The self-service portal is interactive					
12. I have received prompt feedback on enquiries or changes I made					

13. I was able to receive, accept and decline my offer on the self-service portal					
14. There is consistency in the information I received previously and now at registration on Self-service platform					
15. The staff at the business school are competent and have the answers to my questions					
16. I felt safe making payments online for fees and application					
17. The call-center staff were polite when I had challenges with self-service portal					
18. I received personal attention around the clock					
19. The Wits self-service portal are personalised to me and my needs					
20. I was able to locate a Contact or Help function in the Wits self-service portal					
21. The staff at the business school are empathetic					
22. I feel valued and appreciated despite using the service portal for the application with little or no personal contact					

Are you satisfied with your experience on the Wits Business School website www.wbs.ac.za and what could be *changed or improved* e.g. typography, images, videos, menu, navigation, contact information, mobile friendliness?
What aspects of the website functionality would you like to be *added*?
What functions would you like to be improved on the student portal?
Have you used the Wits Application portal lately? What issues have you experienced e.g. crashing, lack of responses, high data usage, slow, errors, compatibility with operating systems, user friendliness, real-time feedback

APPENDIX B: CONSISTENCY MATRIX

Research Problem:

The impact of self-service technologies on perceptions of customer service quality: business school in South Africa

Sub-problem	**Literature Review**	**Hypotheses**	**Source of data**	**Type of data**	**Analysis**
Main Problem To ascertain the impact of self-service technology on the perception of the customer service quality	(Grönroos, 2001) (Meuter et al., 2000)	Hypothesis 1: *The tangible dimension of Self-service technologies has no effect on perceived service quality at a business school*	Survey	Ordinal	GAP Analysis
	(Meuter et al., 2000) (Bitner et al., 2000)	Hypothesis 2: *The reliability dimension of self-service technologies has no effect on perceived service quality at a business school*	Survey	Ordinal	GAP Analysis

	(Davis et al., 1989)	Hypothesis 3: *The responsiveness dimension of self-service technologies has no effect on perceived service quality at a business school*	Survey Survey	Ordinal Ordinal	GAP Analysis
	(Curran & Meuter, 2005)	Hypothesis 4: *The assurance dimension of self-service technologies has no effect on perceived service quality at a business school*	Survey	Ordinal	GAP Analysis
	(Parasuraman & Grewal, 2000) (Dabholkar & Spaid, 2012)	Hypothesis 5: *The empathy dimension of self-service technologies has no effect on perceived service quality at a business school*	Survey	Ordinal	Gap Analysis