

# **A BUSINESS GENERATOR FOR ONLINE UNDERGRADUATE PROGRAMME OFFERING AT A DUAL-MODE UNIVERSITY**

Herman Saayman

University of the Free State

Supervisor: Deon Barnard

## **ACKNOWLEDGEMENTS**

I would like to give all glory to my Redeemer and Saviour, Jesus Christ, without His guidance and strength, this MBA would have been a failure.

I wish to show my appreciation to my wife, Brigetta, who understood the journey and supported me from day one. I thank you for your love, belief and kind words of encouragement; you gave me wings. Since we met, 13 years ago, you never stopped believing in me. My children Annika (9), Mylah-Miné (7) and Liam (5) for helping mommy and for those special hugs and kisses you gave me when I needed it most. My parents for their prayers, my upbringing and for always supporting me in whatever I take on. My in-laws and close family members for all their prayers, messages and calls. Your love and support are appreciated.

My colleagues at work, but specifically Prof Lynette Jacobs, who never doubted in my abilities and motivated me to stay focused, without you, this would not have been possible.

I would further like to express my gratitude to my supervisor, Deon Barnard, who guided me throughout this challenging year of COVID-19. Thank you for driving me home by accommodating changed deadlines and making time to ensure that I finish.

Lastly, I would like to thank the UFS Business School; this was a journey that I will never forget.

## **ABSTRACT**

In the current economic climate, public higher education institutions cannot afford to carry on doing business as usual. This is not only due to increased costs and decreased government funding, but also because the world is increasingly digitalised. Digitisation in the higher education arena has been intensified during the Covid-19 pandemic where staff and students very quickly had to adapt to the so-called “new normal” of working and studying from home, and this trend is likely to continue. Online learning indeed offers a unique opportunity for public higher education institutions to expand their programme offerings, and thus also increase their income. Online programme delivery comes with its own cost, and these must be considered when decisions are taken about this mode of delivery.

The main purpose of this study is thus to compare the current financial model used at the distance education campus of one institution with models used by other online universities around the world to improve its ability to inform decision-making with regard to future fully online structured programmes accurately. In addition, the researcher aimed to review knowledge on current financial models available in the literature and described the importance of current financial model variables incorporating the view of other higher education institutions worldwide. A mixed-method approach was used in the study: the qualitative data was collected through interviews and the quantitative data by means of an online survey.

Findings suggest that the model used by the institution compares well with other models. All financial model variables included were also included by the other institutions from which respondents hailed. Some important insights were the suggestion to include a market analysis, to ensure higher accuracy with the estimation of student numbers along with the finding regarding the importance of the experience and knowledge of the person capturing the data in the financial model. In conclusion, the study highlighted that the current South Campus business Generator financial model used by the University of the Free State are useful in providing information with regard to future online structured qualifications, especially in the absence of any replacement model. Future developments should include making it more user friendly

and establishing an accountability culture where section heads will take responsibility for the information submitted.

**Keywords:** Financial models; online programme offering; distance education; higher education; financial administration; education cost models; education income models.

# TABLE OF CONTENTS

<b>CHAPTER 1 : ORIENTATION</b> .....	<b>1</b>
1.1 BACKGROUND AND INTRODUCTION .....	1
1.2 RATIONALE AND STATEMENT OF PURPOSE.....	4
1.3 PROBLEM STATEMENT AND RESEARCH QUESTION .....	5
1.4 RESEARCH AIM AND OBJECTIVES.....	6
1.5 PRELIMINARY LITERATURE REVIEW.....	6
1.6 RESEARCH METHODOLOGY .....	7
1.6.1 QUALITATIVE RESEARCH.....	7
1.6.2 QUANTITATIVE RESEARCH .....	8
1.7 DEMARCATION OF THE STUDY .....	8
1.8 ETHICAL CONSIDERATION.....	8
1.9 CHAPTER LAYOUT.....	9
1.10 CONCLUSION.....	9
<b>CHAPTER 2 : LITERATURE REVIEW</b> .....	<b>10</b>
2.1 INTRODUCTION .....	10
2.2 GROW IN DEMAND.....	10
2.3 FINANCIAL MODELS IN PRACTICE .....	13
2.3.1 CHARACTERISTICS.....	14
2.3.2 INFORMATION REQUIRED.....	15
2.3.3 THE BENEFIT OF FINANCIAL MODELS.....	15
2.3.4 DRAWBACKS OF FINANCIAL MODELS.....	15
2.4 FINANCIAL MODEL VARIABLES OF THE CURRENT UFS SCBGS.....	16
2.4.1 REVENUE.....	16
2.5 TYPES OF COSTS.....	18
2.5.1 STAFF COSTS.....	21
2.5.2 STUDY MATERIAL DEVELOPMENT AND INSTRUCTIONAL DESIGN .....	22
2.5.3 LEARNING MANAGEMENT SYSTEMS (LMS).....	25
2.6 DROPOUT.....	26
2.7 THROUGHPUT .....	27
2.8 CURRICULUM .....	28
2.9 OTHER CONSTRAINTS AND BARRIERS .....	29
2.10 CONCLUSION.....	30

<b>CHAPTER 3 : RESEARCH METHODOLOGY .....</b>	<b>31</b>
3.1    INTRODUCTION.....	31
3.2    RESEARCH PARADIGM.....	31
3.3    RESEARCH APPROACH.....	32
3.4    RESEARCH DESIGN.....	33
3.4.1    STUDY POPULATION.....	34
3.4.2    SAMPLING TECHNIQUES.....	34
3.4.3    DATA COLLECTION METHODS.....	37
3.4.4    DATA COLLECTION TOOLS.....	39
3.4.5    DATA ANALYSIS.....	40
3.5    VALIDITY AND RELIABILITY .....	41
3.6    ETHICAL CONSIDERATIONS .....	42
3.6.1    ANONYMITY.....	42
3.6.2    CONFIDENTIALITY.....	43
3.7    CONCLUSION .....	43
<b>CHAPTER 4 : DATA ANALYSES AND INTERPRETATION.....</b>	<b>44</b>
4.1    INTRODUCTION .....	44
4.2    RESPONSE RATE.....	44
4.3    SAMPLES USED .....	45
4.3.1    INTERVIEW PARTICIPANTS .....	45
4.3.2    SURVEY SAMPLE BIOGRAPHICAL DATA.....	45
4.4    THE FINANCIAL MODEL USED BY THE UFS .....	47
4.4.1    BACKGROUND AND PURPOSE OF THE MODEL.....	48
4.4.2    VARIABLES.....	49
4.4.3    THE SUCCESS OF THE BUSINESS GENERATOR.....	52
4.4.4    CHALLENGES .....	53
4.4.5    PROPOSED CHANGES.....	53
4.4.6    IMPORTANCE OF A MODEL.....	54
4.4.7    SUMMARY TABLE OF QUALITATIVE DATA .....	54
4.5    FINANCIAL MODELS USED BY EXTERNAL INSTITUTIONS .....	55
4.5.1    OVERVIEW.....	56
4.5.2    FINANCIAL MODEL VARIABLES .....	60
4.5.3    INCLUSION-IMPORTANCE MAPPING.....	70
4.6    COMPARISON BETWEEN THE MODELS USED BY OTHER INSTITUTIONS COMPARED TO THE UFS .....	72
4.7    CONCLUSION .....	73
<b>CHAPTER 5 : CONCLUSIONS AND RECOMMENDATIONS .....</b>	<b>74</b>

5.1	INTRODUCTION .....	74
5.2	BACKGROUND TO BUSINESS MODELS .....	74
5.3	PURPOSE OF BUSINESS GENERATOR .....	75
5.4	EVALUATION OF THE SCBG .....	75
5.4.1	<i>INCOME</i> .....	76
5.4.2	<i>COSTS</i> .....	77
5.4.3	<i>OTHER IMPORTANT INSIGHTS</i> .....	80
5.5	PRACTICAL IMPLICATIONS FOR THE USE OF THE SGBG.....	80
5.6	REFLECTION ON THE STUDY .....	81
5.6.1	<i>PERSONAL EXPERIENCES</i> .....	81
5.6.2	<i>ASSUMPTIONS</i> .....	82
5.6.3	<i>LIMITATIONS OF THE STUDY</i> .....	82
5.6.4	<i>AREAS FOR FURTHER RESEARCH</i> .....	83
5.7	CONCLUSION .....	83
<b>REFERENCE LIST .....</b>		<b>84</b>
<b>ADDENDA.....</b>		<b>93</b>
	ADDENDUM A: ETHICAL CLEARANCE LETTER .....	93
	ADDENDUM B: UFS GATEKEEPERS LETTER.....	94
	ADDENDUM C: LETTER OF CONSENT TO INTERVIEW PARTICIPANTS .....	95
	ADDENDUM D INTERVIEW QUESTIONS.....	99
	ADDENDUM E: LETTER TO GATEKEEPERS AT OTHER UNIVERSITIES .....	100
	ADDENDUM F: LETTER OF CONSENT FOR SURVEY RESPONDENTS .....	101
	ADDENDUM G: SURVEY.....	105

# LIST OF FIGURES

FIGURE 3-1: SEQUENTIAL MIXED-METHOD DESIGN .....	33
FIGURE 4-1: NAME OF THE FINANCIAL MODEL (N=18) .....	56
FIGURE 4-2: NUMBER OF YEARS THE INSTITUTIONS OF THE RESPONDENTS HAVE BEEN USING FINANCIAL MODELS (N=17).....	58
FIGURE 4-3: RESPONDENTS' VIEWS ON THE ACCURACY OF THE FINANCIAL MODEL THAT THEY USE .....	59
FIGURE 4-4: STATUS OF STATE SUBSIDY AT THE INSTITUTIONS OF THE RESPONDENTS (N=18) .....	60
FIGURE 4-5: OVERVIEW OF VARIABLES INCLUDED IN FINANCIAL MODELS AT THE INSTITUTIONS OF THE RESPONDENTS (N=18) .....	61
FIGURE 4-6: INCLUSION-IMPORTANCE MAPPING .....	71

# LIST OF TABLES

TABLE 3-1: SAMPLE OF THE QUALITATIVE STUDY .....	36
TABLE 3-2: SAMPLE OF THE QUANTITATIVE STUDY .....	36
TABLE 4-1: ROLE OF RESPONDENTS .....	45
TABLE 4-2: POSITION OF THE PARTICIPANTS .....	46
TABLE 4-3: NUMBER OF RESPONDENTS BASED ON THE MODE OF DELIVERY OF THE INSTITUTION .....	46
TABLE 4-4: NUMBER OF RESPONDENTS BASED ON THE NUMBER OF SCHOOLS OR FACULTIES OF THE INSTITUTIONS .....	47
TABLE 4-5: SUMMARY OF QUALITATIVE DATA .....	54
TABLE 4-6: REGULARITY WITH WHICH INSTITUTIONS USE FINANCIAL MODELS TO DETERMINE THE BREAK-EVEN .....	57
TABLE 4-7: USE OF FINANCIAL MODEL .....	57
TABLE 4-8: RESPONSES WITH REGARD TO HOW DROPOUT IS INCLUDED IN THE FINANCIAL MODEL .....	62
TABLE 4-9: RESPONSES WITH REGARD TO HOW THROUGHPUT IS INCLUDED IN THE FINANCIAL MODEL .....	63
TABLE 4-10: SUMMATIVE STATISTICS ON THE PERSPECTIVES OF THE RESPONDENTS ON THE INCLUSION OF VARIABLES (N=18) .....	64
TABLE 4-11: PERCEPTIONS ON THE IMPORTANCE OF VARIABLES, PER MODE OF DELIVERY .....	66
TABLE 4-12: PERCEPTIONS ON THE IMPORTANCE OF VARIABLES, BASED ON WHETHER INCOME FROM ONLINE PROGRAMMES AT THE RESPONDENTS' INSTITUTION HAS INCREASED OVER THE LAST FIVE YEARS (Yes) OR NOT (No) .....	69

## CHAPTER 1: ORIENTATION

### 1.1 BACKGROUND AND INTRODUCTION

Although the South Campus of the University of the Free State was established in 2004 when the former Bloemfontein branch of Vista University was incorporated into the University of the Free State, it was only in 2016 that this campus was formally established as the open distance learning centre of the institution (Coetzee, 2015, p. 1). According to Cant et al. (2013, p. 1317), open distance learning can be explained as a methodology where the change in policies regarding open admission and freedom of selection, along with bridging the distance gap by using technology and the face-to-face session, is used to transfer knowledge.

The South Campus offers two distance education qualification programmes to approximately 3000 off-campus students. Currently, only two sets of such programmes are offered in distance education mode, while others should be offered in the near future. The National Diploma in Education (NPDE) is only offered in blended mode at various centres across eight of the nine provinces. The mode of delivery is such that there are face-to-face contact sessions at regular intervals. At the same time, the students are expected to engage in various learning activities in between the contact sessions.

The second qualification that is offered in a distance education mode of delivery is the Advanced Certificate in Teaching (ACT), where 14 specialisations are available. In addition, the ACT is offered in blended and fully online modes of delivery. The IDEAS Lab (their name built from Innovative, Design, Enriched, Access, Student Success) on the South Campus specialises in the development of digital artefacts for learning, including videos and graphics, and supports the online offering, but at a considerable expense.

While the institution has almost 20 years of experience in terms of blended distance education mode of programme offering, the fully online mode of delivery is still emerging. However, for various reasons, the need to offer an academic programme through a fully online mode of delivery is increasing. It seems as if there is an increase in demand for online learning to around 1 out of 5 (Broadbent

& Tyszkiewicz, 2018, p. 1436). This implies that 20% of students prefer to manage their own pace and time. Digitisation in the higher education arena has been further intensified during the Covid-19 pandemic where staff and students very quickly had to adapt to the so-called “new normal” of working and studying from home, and this trend is likely to continue. Online learning is likely to grow and indeed offers a unique opportunity for public higher education institutions to expand their programme offerings, and thus also increase their income.

Fully online programme delivery takes place through a Learning Management System (LMS). According to Ichim et al. (2018, p. 178), an LMS manages the teaching and learning process online by using innovative tools. Furthermore, these platforms are used to manage course content, student assessment and tracking student progress. At the UFS it was decided to use Blackboard as the institution’s LMS.

The cost of delivering an online vs blended programme differs in the sense that the cost is split differently over the delivery model. Kalman argues that while traditional universities invested more money in campuses, classrooms, green grass and in some cases sports facilities, open universities invest more in infrastructure, technologies for distance education as well as counselling to assist students who juggle full-time employment with their studies (Kalman, 2014, p. 7). Indeed, some serious changes needed to be implemented before the UFS could deliver their first online qualification in 2016 as they were a traditional university offering only face-to-face programmes.

In the current economic climate, higher education institutions need to be run such as businesses to ensure financial sustainability. So to function like a profitable business, or at least one that breaks even, the student numbers need to increase. However, the current UFS physical infrastructure does not allow this in a face-to-face mode. Furthermore, the majority of families in South Africa live in poverty and cannot afford the luxury of sending a child to university full-time, as school leavers need to find employment to support families. According to Oluwatayo and Babalola (2020, p. 19), the level of poverty can be determined by using the poverty line. If a household spending is above the line, they do not live in poverty, but if their expense is below the line, they live in poverty.

Although there was always a need in South Africa, only known distance learning institutions were allowed to engage in distance learning (Fresen, 2018, p. 224). UNISA was the only university that offered distance education programmes at the time. However, in 2014, DHET released South Africa's first distance learning policy enabling all higher educational institutions (private or public) to develop and deliver distance education programmes (DHET, 2014, p. 10).

From the literature, it is evident that the same trend took place in America. The Lumina Foundation recently called for the creation of a new higher education business as well as financial models to expand that nation's capacity to deliver affordable, high-quality education (Lumina Foundation, 2013, p. 18). In South Africa, too, it is evident that there is a mental shift in the perception of online learning (Hes, 2017, p. 1). The main reason for the change was the fact that the South African Government realised that distance education methodologies are crucial to opening access to students who would not have had the opportunity to study (Hes, 2017, p. 1).

In light of the above views, the UFS, using the South Campus, chose to implement an enterprise business model, whereby it takes hands with other faculties based on a division of workload. In addition to this explanation, the enterprise business model is an interconnection between business processes to manage and use assets shared (Bider, et al., 2016, p. 663). The university also developed a compatible business generator based on financial model variables. A business generator is a financial modelling tool that is used to create scenarios to calculate the break-even point. The purpose of the business generator is to ensure that the time and effort invested is worth the output. One should take special care as negligence at this point could be costly to the institution. The calculation is done before any material development starts and is based on planned income to be derived from the qualification versus planned expenses. Any financial modelling tool is built with a set of variables about which certain assumptions are made. However, the situation in the world and higher education is ever-changing as Beth (2013, p. 1) indeed points out as follows: "Higher Education is in a state of change, and the existing business models do not meet the needs of stakeholders". To

ensure financial viability, the business model needed to change and address the core sections, as Kalman (2014, p. 6) puts it “The business model is used to describe the essentials of an organisation using a small number of components that, together, comprise the organisation.”

The logic of using a business generator is to make calculated decisions towards achieving financial sustainability. The UFS cannot embark on expanding online education provision through graduate programmes, without considering whether their online business generator measures well against other higher education institutions.

## **1.2 RATIONALE AND STATEMENT OF PURPOSE**

The interest in this topic stems from the researcher’s seven years of experience as a professional accountant working at a higher education institution. The researcher has a passion for helping and serving people. Through financial knowledge, the researcher continuously seeks opportunities to ensure that the students are given the best chance to reach their full potential. Still, at the same time, it is done cost-effectively. The success stories from students who utilised their opportunities to complete their studies encourages the researcher to carry on.

These stories over the past years have inspired the researcher to look at the current business generator, and it informs decision-making. It is essential to ensure that the UFS South Campus is on track to become financially sustainable and keep offering these affordable opportunities to students. As it is still early days, the UFS cannot afford to provide any programme at a loss as a result of student numbers being insufficient. In the development of the South Campus Business Generator (SCBG), everything possible was done to prevent the omission of any critical cost financial model variables. When comparing the UFS model with other trend-setting online universities, it would be interesting to see at what level of development the UFS finds itself and how the model can be improved. The current business model was successful in taking the UFS to the current level of

performance. A first online qualification was rolled out, and an independent online learning management system (LMS) was procured.

In his study, the researcher would like to gain enough knowledge to contribute to the development of industry-specific business generators. The knowledge gained must be applied to improve the SCBG's ability to inform decision-making at the South Campus. The final tool should be available to be used by any faculty at the UFS to inform the expansion of online programmes.

### **1.3 PROBLEM STATEMENT AND RESEARCH QUESTION**

In the same way as all other traditional universities, the UFS has the financial and social responsibility towards their shareholders to expand access to education and to remain financially sustainable. Before investing human and financial resources into the development of online programmes, one has to consider how up to date, and realistic the financial model variables of the current SCBG is in informing the business plan. In simple terms, the input cost needs to be established and measured against potential student numbers (class sizes) to reach at least a break-even point. One also has to consider if the financial model variables that form part of the SCBG indeed contribute to the method of delivery.

Given the above, the main research question proposed is:

How can the ability of the current SCBG to accurately contribute to sustainable online structured programmes at the UFS be improved?

Questions:

1. What can be learnt from publications with regard to financial models for online study environments?
2. What are the characteristics of the financial model used by the UFS, namely the current SCBG?
3. What are the priorities of other universities in terms of the financial model variables?

4. How can the insights gained from the study inform the improvement of the SCBG?

## **1.4 RESEARCH AIM AND OBJECTIVES**

The main aim of this study is to gather the information that will evaluate the South Campus Business Generator (SCBG) towards the improvement of its ability to inform decision-making about South Campus fully online structured programmes accurately.

Further to this, the researcher's secondary objectives would be to:

1. review the knowledge available on financial models for a successful business generator in the online study environment;
2. describe the current financial model and specifically the SCBG;
3. analyse the priorities of other universities in terms of financial model variables; and
4. provide critical comments on the SCBG.

## **1.5 PRELIMINARY LITERATURE REVIEW**

From the literature review, the researcher found relevance in his research question regarding the importance of a business modelling tool in online programme offerings. He realised that there is a significant difference in the approaches from traditional to online delivery as much more is spent in the development stage and getting the platform of delivery ready than in the actual delivery of the programme online. This makes online courses more expensive than traditional models when enrolment numbers are below break-even (Mays, 2005, p. 212).

As explained by Rumble (2001, p. 76), it is vital to identify the nature of the cost incurred as well as what drives them to not only account for all items but to model the behaviour in actual systems. It is also suggested by Rumble (2001, p. 76) to look at macro-level factors that drive costs, for example, the number of courses offered, length of courses and how staff will be appointed.

Another point to look at is whether a specific programme is worth presenting. From literature, there are various methods of how this can be done such as cost to benefit ratio (CBR), return on investment (ROI) and break-even analysis (Wentling & Park,

2002, p. 2). The break-even point is generally defined as the point where your fixed cost, plus variable, cost equals the revenue earned in the same period. According to Maloney et al. (2012, p. 222), there are many different views on how important it is to break-even when presenting online courses, but Eisenhauer (2013, p. 22) suggests a model where a factor is brought in to cover the cost of hardware and course management software together with the digitisation of course material. The break-even point of the online classroom should also factor in the students choosing to move to a traditional class.

Fixed costs include costs such as tech coordination salary, administrative time, secretarial support, equipment, facility, contracted server support, network support and office communication cost while variable costs include costs such as faculty salary, technology support staff, teaching assistant's salary, course materials and mailing fees (Wentling & Park, 2002, p. 3).

There is limited research available on South African business generators for online offerings and the researcher will, therefore, rely on international literature to guide this study.

## **1.6 RESEARCH METHODOLOGY**

Although the significant part of the study will be based on quantitative research methods, the researcher will also use some qualitative methods and therefore, follow a mixed-mode approach.

### **1.6.1 Qualitative research**

Qualitative research, according to Eyisi (2016, p. 92) explains the relationship between meanings, concepts and a description of things. It provides a full description of the research concerning participants. It also requires more time, a better quality of goals during setting the research design and cannot be measured or analysed using a computer programme (UKEssays, 2018). The qualitative research method will be used during one-on-one interviews, where an in-depth discussion with one person at a time will take place. Stakeholders directly involved at the UFS will be invited as participants for the interviews, and they would be the

ones who can provide insight into the specific model (SCBG) used by the institution.

### **1.6.2 Quantitative research**

According to Eyisi, quantitative analysis is focused on gathering numerical data that are analysed using mathematically based methods. Quantitative research is seen as scientific and uses statistical data to achieve the result (Eyisi, 2016, p. 94).

The quantitative research method will be used to gather information regarding the use and effect of a financial model on higher education institutions. The researcher will be using questionnaires in his survey.

Appropriate representatives from other higher education institutions will form the sample.

## **1.7 DEMARCATION OF THE STUDY**

The study is on the effectiveness of the SCBG in informing the UFS on future online programmes. Geographically the research is demarcated in the Free State Province of South Africa. The field of study is financial management within higher education.

## **1.8 ETHICAL CONSIDERATION**

Ethical consideration is ensuring no harm by obtaining informed consent for the study and providing confidentiality regarding all identities of participants. This is needed as the Ethics committee must determine if the benefit of the research weighs more than the potential harm it could cause.

Firstly, the researcher will write a letter to the gatekeepers at the various institutions requesting permission for the identified staff to take part in the study. After permission is granted, the researcher commits to getting informed consent from each participant, both with the qualitative as well as the quantitative study.

## 1.9 CHAPTER LAYOUT

**Chapter 1** consists of an overview to the study in terms of providing background, stating the problem and outlining research questions, highlighting the purpose of the research and clarifying its objectives, introducing the research design and methodology, data collection, sampling technique and data analysis methods, demarcating the field of research, stating the significance of the study and ethical considerations, as well as presenting an outline of the subsequent chapters.

**Chapter 2** literature reviewed will determine the knowledge available on financial model variables for successful business generators in the online study environment.

**Chapter 3** will comprise the research approach and methodology that will be used to gather the information needed to address the research topic.

**Chapter 4** will provide an analysis of the qualitative data generated through interviews on the current SCBG financial model variables through interviews with the developer and users at the University of the Free State. Secondly, an analysis of the quantitative data findings regarding the priorities of other universities concerning the SCBG financial mode variables will also be presented.

In the final chapter, the researcher will provide a conclusion on all research done with critical comments in **Chapter 5**.

## 1.10 CONCLUSION

In this chapter, the importance of the difference between traditional and online universities was discussed. The researcher set out the aim of the study with secondary objectives to be achieved. The researcher looked at some views on variables within the SCBG and briefly discussed the research approach that will be used to gather the data.

## CHAPTER 2: LITERATURE REVIEW

### 2.1 INTRODUCTION

Many conventional universities and other higher education institutions have come to a crossroad regarding programme delivery. The question is whether these institutions will engage in online learning. Due to financial pressure on the one side and massive opportunities for expansion on the other, this decision will have a significant impact on the future of these institutions. For the past seven years, the drive increased substantially with leading universities setting the example by duplicating their face-to-face offerings in an online format (Allen & Seaman, 2010). To engage in online learning, one should understand that certain cost commitments will have to be made concerning infrastructure and adopting the method of delivery and support. This commitment leads to the need for a programme that assists with the determination of the cost versus return.

Due to the volatility of the South African economy, one needs to ensure that the model used by an institution measures well against that of other leading institutions in South Africa, Africa and the rest of the world. The purpose of the literature review was to establish how these different countries approach this model and account for the risks associated. This literature review aims to provide background on online learning as well as considering different online learning business models and their financial model variables currently in use at other institutions. Many financial model variables contribute to the reduction in cost and maximising of profits. Still, the question (and answer) lies in the optimal arrangement of such financial model variables in an optimal model.

### 2.2 GROW IN DEMAND

Over the last few years in South Africa, there was an increase in the demand for access to affordable online higher education qualifications, especially amongst those that cannot afford to attend face-to-face academic offerings. When institutions change their delivery model, they are no longer seen as face-to-face (traditional) institutions, but rather as dual-mode institutions. Kanwar et al. (2018, p. 142) explain the definition of dual-mode as conventional institutions that supply students who cannot or choose

not to attend on-campus classes. The reason for the increase in demand is that this type of learning tends to remove many barriers, such as giving learners the freedom of place, time and content. This trend is not only seen in South Africa but also Africa, America and the rest of the world. In sub-Saharan Africa, there was an increase from 4,7% to 8.59% in the period 2004–2014 (Kanwar, et al., 2018, p. 140). The number of students enrolling online at universities and colleges across North America increased rapidly (Alexander, et al., 2014, p. 9) with Canada claiming an increase yearly of between 10% and 15% from 2012–2017 (Kanwar, et al., 2018, p. 141). The United States of America (USA) recorded a growth of 22% between 2000 and 2010; testimony to the growth elsewhere around the globe (Byrda & Mixon, 2015, p. 601). This growth would always lead to new prospects but also include risks that should be noted.

This global demand for learning has opened up numerous opportunities as the methodology of delivery changed across many continents. Some of these opportunities came in the form of increased levels of offering but related to a decrease in public funding which was the case in some developing countries (Mays, 2005, p. 211). These opportunities came in different forms with teaching practices such as virtual classrooms (Lam & McNaught, 2006, p. 200) and flipped classrooms that are now being used (Kanwar, et al., 2018, p. 140). The researcher goes on to explain that many institutions have also opted for the use of learner management systems (LMS), open educational resources (OERs) and massive open online courses (MOOCs). Furthermore, the conventional universities were prompted to realise the advantages of this new technology, with the latest communication (social media and chat rooms), assessment tools (interactive activities, tests and assignments) and easy access to learning material (Fresen, 2018, p. 224). For this reason, technology has become a prominent feature in delivery as conventional universities adopt how teaching and learning occur (Kanwar, et al., 2018, p. 140). The drive towards embracing technology and offering a broader scope of qualifications thus affects not only local markets but also international markets, as the impact felt is real.

With the expansion of online learning by well-known universities such as Harvard comes the intensified level of competition amongst players in the provision of online education. With easy access from anywhere in the world, this comes as a threat to

smaller brands, but it is believed that it should not at this point impact on the market position of established campus-based universities (Sharrock, 2015, p. 607). However, some believe that universities should adopt to avoid the same fate as the dinosaur by changing their conventional methods of teaching as well as their bureaucratic academic structure (Bramble & Panda, 2008, p. 1). To become a dual-mode institution, one should ensure that national and institutional policies are aligned to increase the level of research and plan sufficiently regarding the centralised system supporting the institution. One should also consider the cost-effectiveness of the business model and the enthusiasm and capability of faculty members (Kanwar, et al., 2018, p. 153). Although the opportunities to engage in dual-mode delivery existed, the uptake was slower in certain countries than in others.

In some cases, one found that from an early stage the support from government was visible but in other cases, the changes in policies only came at a later stage; thus, putting the institution in an awkward position to try to keep up with international trends. In North America, Australia and the United Kingdom dual-mode institutions are becoming the norm, but this is not the case in most developing countries where there are numerous challenges (Kanwar, et al., 2018, p. 142). Take the case of South Africa where in the early 2000s the position of distance universities was reinforced with the mandate that traditional face-to-face institutions will not be allowed to encroach on this so-called territory (Fresen, 2018, p. 224). The South African distance learning policy was only published in the government gazette in 2014, where the Department of Higher Education and Training acknowledged the growing demand for distance qualifications. Although still motivating the University of South Africa (UNISA) as the leading distance university in South Africa, assured other institutions, public or private, that they will be supported in their drive to supply quality distance education (DHET, 2014, p. 10). It was a welcome change to the traditional way of thinking but way overdue, increasing the pressure on higher education institutions to deliver at a rapid pace to address the demand.

Online learning provides many institutions with the opportunity to increase their profits if they engage with proper planning and implementation. In the USA, this industry experienced increased revenue, estimating the value at \$27 million, approximately

16% of the global market (Radovan, 2019, p. 29). In 2015, it was noted that 91.4% of USA colleges and universities included online learning as critical to their long-term strategy (Halupa, 2016, p. 32). In the past ten years, the world has seen a growth in online for-profit organisations, and with the rapid rate at which public universities join this drive, it seems as if the competition for online students has just begun (Deming, et al., 2015, p. 500). In addition to the benefit for the institution is the benefit to the student who gets programmes delivered in the ways they prefer by using up to date technology employing computers, smartphones and tablets (Durak & Ataizi, 2016, p. 85).

### **2.3 FINANCIAL MODELS IN PRACTICE**

There is a myth around online learning in that it seems to be more economical to deliver compared to face-to-face. Since launching the first online course at the University of the Free State, there were talks about the fact that online learning should be priced cheaper than its blended or face-to-face counterparts. The reasoning behind the thought was that the development and delivery of these programmes are seen to be more economical. This belief is not valid, and there is reason to believe that even if online programme development is streamlined, it would still be more expensive than regular face-to-face programmes (Cook, 2015, p. 966). Some believe that advances in online learning technology might be able to bend the cost curve, but the quality might be compromised (Deming, et al., 2015, p. 500). This view is shared by Ortagus and Yang (2019, p. 3) who further emphasise the importance of a useful financial model to assist with complex calculations and determine whether the return received on investment is worthwhile in comparison with the cost invested (Kennedy, et al., 2015, p. 179).

Calculating this cost-benefit scenario sounds relatively easy, but given the many different variables to consider, it proves to be a very daunting task. Typically financial models would not save cost or increase revenue but instead creates a platform where accurate forecasting of expenses and income can be done (Chipere, 2017, p. 44). The literature confirms that the UFS is not alone in its struggle to find a model that speaks to consistency. Also, assistance in the estimation of some of the variables is a struggle across many institutions. Financial models for online programmes are generally

underdeveloped (Eisenhauer, 2013, p. 19). Likewise, the model should add value to the overall student experience and account for the hidden cost (Kennedy, et al., 2015, pp. 179-180).

The literature review identified four models (CRAM, Economic, UW10C and DEOL) which are to be discussed by looking at their characteristics, information required, benefit and drawbacks.

### **2.3.1 Characteristics**

SCBGs should guide whether time and money should be invested (Kennedy, et al., 2015, p. 189) and should apply to any type of course and teaching method asked. The information must be presented in an easy to use format and determine a source of feedback to the lecturer or programmer (Kennedy, et al., 2015, p. 182). The instructional design part of the costing model should be carefully designed as the quality of the relevant programme as well as the learning experience depend on how the different parts are put together in the final online programme (Cook, 2015, p. 971). Cost-effectiveness should be applied throughout but especially in the material development phase as their might be content that is already developed that will save costs (Chipere, 2017, p. 43). The financial models should also find a balance between economies of scale and ensuring profitability for the institution and maximising students' possibility of success with a high-quality course design (Mays, 2005, p. 213). The model plays a pivotal role in establishing how much could be saved at which element to ensure maximum profitability without compromising student success.

Throughout the literature review, no model was found making provision to amortise any start-up costs, specifically the cost of equipment used in the instructional design. Taking into consideration that some of the more expensive equipment used, prices around R800 000, it could significantly influence any forecast. The high cost of a start-up was mentioned by Mays (2005), but it was not included in any model the researcher reviewed.

### **2.3.2 Information required**

Most of the models require data to be inserted before it can start processing the data. The data needed includes the maximum number of students per group, number of hours and the number of students per iteration and estimation of the teaching-related income (Kennedy, et al., 2015, p. 183). Clear information should be provided regarding direct and indirect delivery. Some other information needed included educational strategies, assessment types, office overheads, design and development cost and personnel costs.

### **2.3.3 The benefit of financial models**

In this context, a benefit refers to any idea to include or exclude any element that would contribute to the model's success in predicting the outcome of the relevant programme. One of the benefits identified was to ask the lecturer to distinguish between preparation hours and support as well as the percentage of time spent by higher or lower-paid staff. Both these financial model variables can have an impact on the costing and care should be taken when the information is captured. It was also found that the model should account for so-called "opportunity cost" which refers to students that migrate from the face-to-face to online or vice versa (Eisenhauer, 2013, p. 19). In practice, this happens a lot and directly affects your planning and delivering costs. In addition to these mentioned above, there must be a split between direct and indirect programme development cost as these are calculated at different levels, and the development cost should be amortised over the same period as programme delivery (Chipere, 2017, p. 43).

### **2.3.4 Drawbacks of financial models**

A drawback, in this context, would mean that elements that are disregarded, could potentially improve the accuracy of the model to do a forecast on a specific qualification. Some of the models reviewed do not include any cost for infrastructure development as the developers believed that there are other methods to establish those costs and that it is not under the control of the lecturer (Kennedy, et al., 2015, p. 183). Another drawback is that the financial models do not automatically account

for course update costs as these have to be noted and updated on the system at a later stage (Chipere, 2017, p. 43).

## **2.4 FINANCIAL MODEL VARIABLES OF THE CURRENT UFS SCBGS**

The current SCBG consists of various financial model variables that each affects the outcome of the model. The financial model variables include revenue (tuition and government subsidy) and cost (staff cost, study material development cost, including instructional design cost). In the section that follows literature on these will be discussed.

### **2.4.1 Revenue**

As previously mentioned, the rise of online programmes has the potential to increase revenue at public and private higher education institutions as it reaches a broader market of students (Ortagus & Yang, 2019, p. 3). In addition to this, many institutions worldwide are considering additional courses to increase their tuition income (Eisenhauer, 2013, p. 19). As echoed by Byrda and Mixon (2015, p. 608), the increased revenue does have an advantage. Still, besides this, other benefits such as student flexibility and lecturer-student interaction with smaller classroom size are worth mentioning. Many feel that online classes should be smaller. Still, in contrast to this view, revenue for online courses could indeed be increased by not only expanding programmes but by increasing the size of classes (Kennedy, et al., 2015, p. 179). As the objective of growing revenue continues, all cost and income should be carefully analysed and weighed against potential pitfalls. Especially as the current financial models are still underdeveloped, and little attention is given to attract new students to online learning considering additional courses to increase their tuition income (Eisenhauer, 2013, p. 26). Mendling et al. (2005, p. 17) argue that some revenue models focus on the utilisation of the offered services, but this relies heavily on the skills of the workforce. In an attempt to address high-cost levels with increased student numbers, a special effort should be taken to market the programmes properly. Bramble and Panda (2008, p. 10) also add that revenue tests cost-effectiveness throughout the programme delivery considering all costs.

The potential growth in online programmes can also squeeze institutions' revenue as it stretches resources to move to meet demand regarding instructional development (Byrda & Mixon, 2015, p. 601). Due to the high cost involved in the development of an online course, it is believed that one revenue stream will not be sufficient to cover the cost of development throughout the online course (Mending, et al., 2005, p. 17). That is purely the reason why many institutions have opted for other streams of revenue in the form of government tenders and seeking funds from donors.

#### **2.4.1.1 Government income**

Besides revenue received from tuition fees, public universities are also supported by many governments across the world. These funds, also known as a subsidy, is calculated based on a complex formula. The formula considers the level of the qualification according to a predetermined funding grid (DHET, 2014, p. 8). Part of the calculation is to find the enrolments that qualify for input subsidy and the number of graduations that are eligible for the output subsidy. This calculation is complicated and staff doing the forecast are not always willing to share all the financial model variables as it might expose the institution. A similar analysis was found where Mays (2005, p. 217) noted that staff could not tell him what the subsidy was and that they persisted in working on the actual tuition income as the subsidy sometimes gets lost in the institution. In the past, these funds received from the government were stable as education is one of the major cornerstones in building a healthy society. In most instances, a programme will experience cash flow problems without the availability of government funding (Chipere, 2017, p. 37). Many public universities in South Africa rely extensively on government funding ranging from 30%–65%, with an average of 50% and a decrease in government funding is noticeable (Wangenge-Ouma & Cloete, 2004, p. 906).

Lately, the government is faced with numerous financial challenges that are explained as the inability of public institutions to shift their resources to other non-governmental markets (Wangenge-Ouma & Cloete, 2004, p. 917). Adding to this pressure on government sources was the #Feesmustfall campaign where student protests across South Africa took place at all public institutions in a drive towards free higher education and decolonisation of higher education (Hodes, 2016, p. 140). The damage to public

institutions and the fact that the government had to assist universities with funds to cover specific tuition fees was general knowledge. The drive towards Free Education has advantages and disadvantages. Part of the gain would be access for students that would not have been able to study, and part of the problem would be the fact that it increases the financial pressure on the government. This viewpoint is not only shared by Wangenge-Ouma and Cloete (2004, p. 915), but it is further suggested that a funding model is developed to address the inequality of the past. Affordable education for the poor would also mean affordable education for the rich. A possible solution, as suggested by Wangenge-Ouma and Cloete (2004, p. 918), is that race could be used as a criterion for the allocation of NSFAS funds. In this way, inequality should be addressed and not aggravated.

The general decline in government subsidy is not only applicable to South Africa as other institutions around the globe face the same fate. In the USA, it was well documented that state funding to public universities was declining (Byrda & Mixon, 2015, p. 601). The reason why many governments opt to reduce the education budget is the belief that the loss in income can be made up of institutions increasing the tuition fees (Ortagus & Yang, 2019, p. 1). Contrasting to this view is the fact that the South African government is concerned with the fact that tuition cost is growing faster than their allocation to the National Student Financial Aid Scheme (NSFAS) (Wangenge-Ouma & Cloete, 2004, p. 915). This demand is not sustainable. The effect of reduced subsidy income profoundly affects the SCBG as it takes longer to reach a point of break-even.

## **2.5 TYPES OF COSTS**

The current SCBG consists of different financial model variables. Generally, any cost is not seen in a positive light as it silently eats away at your profit, therefore directly impacting the SCBG. In the literature, some believe that costs cannot be cut but Mendling et al. (2005, p. 17) does not agree with this assumption as one can always decrease costs. Another unanswered question is how do you account for the cost that is not easily measurable, for example, reputation. Once your reputation is damaged, it might cost a lot more to repair if it is at all repairable. So although one tries to limit cost, one should be sensible in the approach.

All cost plays an essential role in the forecasting of future qualifications and can be divided into fixed cost or variable cost. It is interesting to note that a higher fixed cost is required for online learning than any other form of delivery. In contrast to this, lower variable cost is needed for online learning than any other methods such as blended or full face-to-face (Ortagus & Yang, 2019, p. 3). It then implies that a change in the number of online students will have less of an effect on variable cost making it more acceptable to encourage online students to join when they want. That is if your model allows for different start sessions within an academic year. Fixed costs are costs that will not vary with the number of students, for example, salaries of permanent staff, capital cost, rates and taxes and material development.

Variable costs relate to materials and services, that will change as the number of students increase or decrease. Other examples include material printing and delivery cost and lecturing cost, but these also apply to blended programme delivery. These types of expenses are also known as the Achilles hill of online learning, as it is difficult to estimate. It could easily contribute to a cash flow problem, and it is difficult to control. Bramble and Panda (2008, p. 10) agree with this explanation of fixed and variable cost in an online environment, whereas Eisenhauer (2013, p. 23) added that fixed cost operates independently from any student enrollments. The capital cost usually falls within fixed cost and comprises hardware and software needed. Examples of these would be studio equipment, laptops for staff as well as software to do graphic design. These are referred to as start-up cost. Recurrent costs are those costs recurring as operations continue. The recurring charge consists typically of the expenses like communication cost, staff salaries and material for course development (Bramble & Panda, 2008, p. 10).

One must classify each cost involved, to distinguish between fixed and variable cost and determine the impact. For example, if the size of the cohort is increased, it would have a direct effect on all the variable cost components but not on the fixed cost. When calculating the cost, one also needs to understand the dynamics between teaching costs and learning outcomes (Kennedy, et al., 2015, p. 179). It might cost more to produce an intensive video, but the learning experience might stay with that student

forever translating to an increase in the reputation of the institution. One should always try to limit cost where possible to improve profits.

In limiting cost, several cost reduction techniques could apply. Some believe that online learning in itself is a method of cost reduction. Montelongo (2019, p. 76) together with Ortagus and Yang (2019, p. 3), suggest automated assessments of assignments can reduce that cost, along with quizzes and tests as well as shared resources for course development (Kennedy, et al., 2015, p. 179).

From studying the literature and the SCBG, examples of fixed and variable costs are listed below.

#### Fixed cost

- Salaries of permanent staff members
- Material development for online learning
- Instructional design of the material
- Blackboard (LMS)
- Other licencing fees used for instructional design
- Capital costs (equipment of studio)
- Operational cost (rates and taxes, maintenance, office supplies for permanent staff).

#### Variable costs

- Salaries of ad hoc facilitators
- Marking cost
- Moderation cost
- Office supplies for ad hoc staff members
- Marketing cost paid to an external marketer

### **2.5.1 Staff costs**

The staff cost directly impacts the SCBG, and although they work in different sections, can be classified as academic and support staff. The South Campus has academic and support staff, some are appointed as permanent and others as ad hoc. The permanent component refers to the staff employed permanently at the university with benefits. The other part relates to staff who assist on a needs basis and do not receive the same benefits as permanent staff. Although this is not a popular method of appointment, it is supported by Mays (2005, p. 217). The South Campus' current online programme runs in sessions, so ad hoc online facilitators and moderators are appointed per session. As correctly identified by Sharrock (2015, p. 607), staff profiles had to be changed to adapt to the new method of delivery, but at the South Campus, this has not been done. To manage staff cost-effectively, traditional institutions should adapt to the change.

Staff cost is identified as one of the significant cost drivers in online learning. Mendling et al. (2005, p. 16) confirmed this by adding that in three case studies staff cost accounted for 90% of the cost. Along with the cost of staff, one has to consider efficiency. It is vital to ensure that hidden costs are limited by increasing productivity. Many share this view, including Kennedy et al. (2015) and Mays (2005). One strategy to reduce staffing cost would be close monitoring and reducing time spent by permanent staff. These savings should then be carried over to technology-assisted strategies (Kennedy, et al., 2015, p. 179). One way to increase efficiency is to ensure that staff are appropriately skilled.

Improving staff skill is a hidden cost that sometimes gets left out. Many, including Dinmore (2019, p. 7) and Mendling et al. (2005, p. 16), agree that academic as well as support staff members should be up skilled in digital communication and interventions. In addition to the skill set, organisations should invest in broadening the understanding as well as explaining the vocabulary involved around costing models (Kennedy, et al., 2015, p. 177 & 181). The organisation should not ignore the management of this cost as it could be devastating. Equally important is the training of staff regarding ready for use budget tools and an explanation on how to do activity-

based costing to keep a record of time spent and manage their programme financially (Mays, 2005, p. 217 & 218).

Skilled staff is critical to the effective delivery of any programme, but especially online, as there is no contact with the lecturer (Mendling, et al., 2005, p. 16). These essential staff members should take special care on what they spend their time. Besides the development of skill, it is also important to note that numerous authors, including Eisenhauer (2013, p. 19) and Rambe and Moeti (2016, p. 648), warn against big online classes that contribute to poor results. These authors are adamant that virtual classrooms should be limited to a small number of students per online lecturer. It is clear that this is one area where you should not extensively save on costs.

### **2.5.2 Study material development and instructional design**

Fixed cost material development is a considerable expenditure that has a significant impact on the input cost of the SCBG. Material development for online programmes consists of two processes. Firstly, one needs to write the modules so that it is fit for purpose in online learning. Secondly, you need to transform these modules into online material that meets the expectation of the student.

#### **2.5.2.1 Study material development**

The material development needs to comply with the framework set out for the instructional design to take place. In literature, it is echoed by Phirangee and Malec (2017, pp. 160-161) as well as Durak and Ataizi (2016, pp. 86,100) that material developed for online learning should ensure that the student feels a sense of community and that there is time created for students to interact and feel supported. They also agree that methods should be used to encourage these needs, such as group assignments and discussion forums. In addition to their view, Dinmore (2019, p. 1) highlights the use of video as a technique to create inclusiveness and accommodate learners with different abilities. His view is confirmed by Housten (2018, p. 1) who explains that some students are not aware of their physical, sensory and learning disabilities until they engage in online learning.

The use of videos is encouraged by Dinmore (2019, p. 2) as a decision was taken by a large Australian university to include videos in all the online qualifications. Some benefits of videos include a sense of personalisation, perceived higher levels of student engagements and promotion of active learning pedagogies. Similarly, these benefits link to requirements mentioned above regarding online learning and making the use of video fit for purpose.

In the process of development, specific steps are crucial to the success of the programme. Fresen (2018, p. 226) and Chipere (2017, p. 47) identified that communication regarding the process and level of expectancy must be clear. They add that proper resources must be in place to execute the development and time efficiency must be managed by addressing problem areas and providing prompt feedback to avoid bottlenecks. South Africa has a distance education body that assists the department of higher education in the drafting of policies regarding distance education. They are called the National Association of Distance Education and Open Learning in South Africa (NADEOSA). In addition to the steps highlighted in the literature above, NADEOSA also compiled a thirteen point quality criteria when it comes to the development of distance qualifications (Fresen, 2018, p. 229).

The thirteen steps explained by Fresen (2018, p. 238) guide the whole process from accreditation to delivery (also see .

**Policy and planning** – National priority determines demand, and this is met by providing suitable qualifications to the targeted learner.

**Learner** – Information regarding the learner profile is available and is used to inform the development and design. Learning is aligned with the planned outcome.

**Programme development** – Programmes are developed to meet the needs of the learner with the employer in mind.

**Course design** – Outlines the importance of research and aligns with learning outcomes, which also highlights the process of development and evaluation.

**Course materials** – Ensure that assessment and material reach set outcomes and that the learner is engaged with the identified process of development and evaluation of course.

**Assessment** – Should meet the requirements of regulatory bodies and employers.

**Learner support** – Learner should be provided with a support structure with proper two-way communication.

**Human resource strategy** – Appropriate staff structure in place to perform expected tasks.

**Management and administration** – Ensuring an adequate support system to assist with the delivery of the programme.

**Collaborative relationships** – Highlight the importance of collaborative relationships.

**Quality assurance** – Clear cycle laid out of planning, implementing, monitoring, reflection and action to ensure adherence to quality standards.

**Information dissemination** – Ensure that programme developed is promoted.

**The result** – is measure in terms of the provider achieving the standard of delivery in a cost-effective way.

### 2.5.2.2 Instructional design

The instructional design section is responsible for creatively converting the study material developed by the curriculum designers to ensure that the programme can be offered online without changing the fundamental learning principles as confirmed by Cook (2015, p. 967). Since online learning is non-linear, the output cannot be predicted from the input (Lam & McNaught, 2006, p. 200).

As also noted in cost, the development of online material requires a higher fixed cost that also covers the cost of the staff responsible for the instructional design. Ortagus and Yang (2019, p. 2) as well as Chipere (2017, p. 43) agree the team should consist

of a course developer, instructional designer and support staff (graphic designer, programme designer and learner support specialist etc.). Other costs include media-rich resources that add to the fixed cost in the development of material (Kennedy, et al., 2015, p. 178). As an example of how instructional designers can contribute to cost saving, Cook (2015, p. 970) explains that a library could be kept of all designs, readily available for any future programme to be delivered.

Instructional designers play an essential part in contributing to success. Houston (2018, p. 3) emphasises the importance of each part of the instructional design and in support (Christensen & Spackman, 2017, p. 15) highlight the need for instructional design to address dropout. Both authors express the impact instructional design has on the success of students within the programme. Others such as Lam and McNaught (2006, p. 215) believe that students demand higher quality material to be successful, resulting in higher development costs. The truth is there is no guarantee that this will be the result.

### **2.5.3 Learning management systems (LMS)**

The learning management system (LMS) grew in stature as the demand for online programmes increased. These days no online programme can be delivered without an LMS system. Kanwar et al. (2018, p. 2) note that these systems store the content of qualifications in an organised format and are easily accessible to students. Goldbach et al. (2018, p. 406) add that it is in contrast to the traditional way of organising education according to student age. One of the most used systems is Blackboard that not only stores documents but also serves the purpose of same level communication to all students from a specific class (Alexander, et al., 2014, p. 10).

Furthermore, the LMS serves as a networking platform to create a sense of community, crucial to online students. Other types of platforms available include Udemy and Academika, which are a bit more advanced as they learnt from the mistakes made by initial LMS systems (Goldbach, et al., 2018, p. 406). Some advantages of LMS platforms include flexibility, accessibility, speed and no travel costs. In contrast, the disadvantages include a long time in front of the computer, computer skills required, absence of visual contact and negative effects to one's health

(Goldbach, et al., 2018, p. 406). LMSs are beneficial in the gathering of student data for future use. Data gathered by the system are categorised into a variety of fields including personal information (gender, age and country), statistical results, behavioural information and access period, the number of visits and duration of each visit.

The licensing cost of LMSs is easily missed as it might be seen as an institutional cost. The fact of the matter is that with online learning, it is variable and care should be taken to recoup costs from students as it directly affects the costs of the SCBG.

## **2.6 DROPOUT**

There are many different terms to describe when a student is considered to form part of the dropout statistic. According to Christensen et al. (2017, p. 1), some define dropout as discontinuation of studies within the orientation week. Others describe it as discontinuation before classes have commenced. As the dropout percentage influences the SCBG, one will have to decide on your approach before starting with the calculation.

The dropout rate of online programmes is much higher than that of face-to-face programmes despite all the advantages that online programmes might have above face-to-face programmes, as confirmed by Christensen et al. (2017, p. 1) and Radovan (2019, p. 29). Hachey et al. (2012, p. 2) and Phirangee et al. (2017, p. 160) also confirm the higher dropout rates and the problems associated with it. This is a massive concern amongst universities globally. Especially in light of planning potential income and future enrolments highlighted by numerous authors including Diver and Martinez (2015, p. 5) and Radovan (2019, p. 30) trying to estimate subsidy as there are various reasons from the literature regarding the high dropout rate. Some believe that students who previously completed an online course has a higher dropout rate than face-to-face programmes (Christensen & Spackman, 2017, p. 1). Others, including Phirangee and Malec (2017, p. 161) and Purarjomandlangrudi et al. (2016, p. 269), share the view that students feel isolated due to the physical separation or isolation from other students. MOOCs have noticeably high dropout rates and it is believed that only 10% of students enrolled pass (Chen, 2014, p. 95).

Similarly, Bozkurt and Akbulu (2019, p. 42) found the dropout rate to be as high as 90%. The cost of a high dropout is substantial as it has a much broader effect than just enrolments. The high dropout rate not only increases the cost of investment but also has an emotional impact on the student (Radovan, 2019, p. 30). According to literature, there is some remedial action that can be instated.

Student workload, intrinsic motivation, academic competence and student persistence are mentioned as financial model variables to monitor to ensure student success (Brubacher & Silinda, 2019, p. 172). Attention should be taken that any intervention should be done at the start of the programme to get the best effect (Radovan, 2019, p. 37).

As mentioned above, special efforts should be made to retain students as the dropout rate for online learning is much higher than any other form. The dropout rate directly affects the SCBG through the loss of income of tuition and subsidy.

## **2.7 THROUGHPUT**

Throughput as a financial model variable of the SCBG can be explained as the percentage of students that progress to the next year. Although the term is well-known, literature is clear that there is little consistency and the absence of standard definition leads to a lack of data to measure performance (Watson, 2008, p. 727). To measure throughput consistent from one year to another, the method should be standardised (Watson, 2008, pp. 736-737).

When considering improvements to throughput rate, it is explained by Watson (2008, pp. 736-737) and Hilton et al. (2016, p. 25) that purposeful intervention should take place. In return, this might also increase student graduation rates. Furthermore, Schultz (2016) notes that an institution's reputation is measured by its throughput. The importance of using throughput as a metric to measure success is repeated by Hilton et al. (2016, p. 25) and again echoed by Watson (2008, p. 725) through the white paper on higher education emphasising the importance of the increased level of throughput and equity amongst students.

Mays (2005, p. 216) resonates the importance of readily available data and explains how throughput at course level differs from throughput at programme or qualification level. This information proved to be valuable as it provides the institution with an opportunity to intervene and support the student. As the throughput rate impacts on the income of the SCBG, care should be taken to increase the throughput rate. The impact will not only be visible in the change in revenue but also serve as a testimony to the reputation of the institution.

## **2.8 CURRICULUM**

In South Africa, there is a new drive regarding the decolonisation of the curriculum. Charles (2019, p. 1) explains, “decolonising the curriculum means creating spaces, resources for a dialogue among all members of the university on how to imagine and envision all cultures and knowledge systems in the curriculum, and concerning what is being taught and how it frames the world”. Given this definition, it is clear that university transformation will not succeed if the curriculum is not changed (Moosa, 2018, p. 69). It is also felt that the Council on Higher Education (CHE) in South Africa could use the framework provided by the Higher Education Quality Sub-framework (HEQSF) to inform curriculum issues whereas it just prescribes a certain standard at this stage (Moosa, 2018, p. 69). Along with this view, Le Grange (2016, p. 1) propose a five-stage process to decolonise.

The curriculum design of online programmes should be aligned with essential characteristics, as also confirmed by Chen (2014, p. 97). These characteristics consist of the quality of material, engagement with the lecturer and interaction amongst students. In addition to these characteristics, Chipere (2017, p. 47) adds that curriculum should also provide for an outcome in the form of learning and associate activities with learning material and assessments. These objects can be achieved by drawing up a curriculum map. A curriculum map is defined as an overview of the entire curriculum of a programme presented in a graphical format (Chipere, 2017, p. 47). All characteristics confirmed above should be embedded throughout the whole process from accreditation to material development as well as instructional design. Internationally there are many frameworks for online curriculum development of which one example is the Universal Design Framework (UDL). UDL is preferred since it

includes student needs and saving on costs (Houston, 2018, p. 2). Some other methods to engage with students include the use of reflection activities such as learning journals, peer and self-assessments (Ou, et al., 2019, p. 85). All engagements carry a cost, including curriculum cost, and some efforts by established institutions have been made to account for these curriculum costs (Mays, 2005, p. 214). The same does not apply to new institutions. Online programmes take a considerable investment in human capital to develop. They sometimes appear to be risky not because students perceive it as cheap but because of input cost (Ragusa & Crampton, 2017, p. 1208).

## **2.9 OTHER CONSTRAINTS AND BARRIERS**

Some constraints or barriers make it very difficult to develop and deliver quality, respected online material. Some faculties are reluctant to support online programme development as they find that the online programme provides a “less than” quality qualification (Montelongo, 2019, p. 76). In contrast, others argue that the time taken to develop such programmes is too long (Kennedy, et al., 2015, p. 178). In addition to these, some academics feel that online students earn worse grades compared to face-to-face students (Montelongo, 2019, p. 76), as echoed in literature by Ortagus and Yang (2019, p. 3). Besides, academics do not want to support online as they are not prepared to take on the additional workload (Halupa, 2016, p. 33). Other constraints from the literature regarding academic staff is their change in the work environment from stress-free to stress out (Du Plessis, 2019, p. 1).

In addition to academic staff, some barriers come from students who feel that online programmes are less demanding (Eisenhauer, 2013, p. 20) than traditional programmes. In contrast to this view, other students struggle to engage as their attention is quickly drawn away (Wilson, et al., 2018, p. 257). Some believe that students also view an online qualification as a lower quality of teaching and more inferior quality materials (Phirangee & Malec, 2017, p. 161).

The final barrier considered from the literature will be the view employers have of the quality of teaching regarding online qualification in comparison to face-to-face (Ragusa & Crampton, 2017, p. 1208). In addition to this view, adding more cheap online

qualifications might exaggerate the opinion of the already estranged employers (Ragusa & Crampton, 2017, p. 1215).

## **2.10 CONCLUSION**

Although some universities have engaged in online learning, little has been documented and could not be found in the literature. The challenges are real with the lack of infrastructure, and social economic needs visible among the majority of the South African population. It is, therefore, not to waste money and offer programmes that are sustainable and affordable. The absence of a general financial model for universities to assist in decision making is a reality, but the researcher could not find any information in this regard. Articles from other countries that could inform the SCBG's financial model variables were limited. Still, the researcher scrutinised the limited literature to gain an understanding of the matter related to financial models such as what their financial models are called, what financial model variables are included and what constraints and barriers are experienced.

While studying the literature, certain gaps were identified, such as the general lack of amortising the initial and replacement cost of the instructional design equipment. As IT equipment only has a lifetime of approximately three years, the initial, as well as replacement cost, should form part of the cost recovery, proportionately allocated to each developed qualification. The study subsequently engaged in data collection to address this deficit.

## **CHAPTER 3: RESEARCH METHODOLOGY**

### **3.1 INTRODUCTION**

The research methodology section is a critical step in the research process. It describes the approach, design and methods selected to respond to the aim of a study, towards a conclusion (Allen, 2017, p. 1020). This study aims to gather the information that will evaluate the SCBG towards the improvement of its ability to inform decision-making about the South Campus' fully online undergraduate programmes accurately. In this chapter, the research approach, design and methods used to meet the research objectives are discussed. The researcher works from a Pragmatism paradigm, taking a mixed-method approach. Qualitative and quantitative data will be collected, the details of which will be discussed in the section below.

### **3.2 RESEARCH PARADIGM**

A paradigm is a set of assumptions on parts of reality that initiate a particular worldview (Creswell, et al., 2016, p. 52). Based on the main research question that aims to improve a practical tool, it was decided to work from a pragmatist perspective. As a worldview, pragmatism derives from activities, circumstances and results rather than from theories and postulations (Creswell, 2014, p. 54). Creswell (2014, p. 54) further points out that with this paradigm, emphasis is put on the problem to find solutions utilising all available approaches to understand it. This view is echoed by Johnson and Onwuegbuzie (2004, p. 16) who believe that pragmatism initiates action in discovering fit for purpose solutions. Thus, with the researcher's aim to evaluate the ability of the SCBG towards establishing the financial viability of programmes, the study is focused on finding a solution to a real-life situation.

According to Eyisi (2016, p. 92), paradigms inform the method of data collection and analysis. Denscombe (2008, p. 273) explains that pragmatism is viewed as a philosophical affiliate to the mixed-method approach. Others, such as Shaw et al. (2010, p. 513) share this view and point out that pragmatism is seen in studies that incorporate various methods to collect information.

The pragmatism paradigm is thus appropriate for this research project, as it will facilitate establishing meaning from the views of participants regarding their perception on the ability of the SCBG to inform decisions regarding future online learning programmes.

### **3.3 RESEARCH APPROACH**

According to Creswell (2014, p. 31), the research approach informs and details the route for research activities from idea to data collection, scrutiny and interpretation. The research approach that the researcher chose is mixed methods, as it sought to establish the views of the participants using both qualitative and quantitative methods (Creswell, 2014, p. 48). Taking a mixed methods approach, the focus will be on finding a solution by utilising inputs from quantitative and qualitative data (Johnson & Onwuegbuzie, 2004, p. 16). Creswell (2014, p. 32) indeed defines mixed method research as an approach to gain an understanding of the research question by integrating quantitative and qualitative data collection methods.

In understanding the mixed method approach, Creswell (2014, p. 32) explains that the qualitative research approach is an examining approach to understanding individuals or groups view on a specific social or human challenge. In contrast, quantitative research is an approach to study the connection between variables and test it by unbiased philosophies.

Quantitative research emphasises the measurement and analysis of the interactions between variables through numbered data (Creswell, 2014, p. 32). It is typically deductive, objective and general (Morgan, 2014, p. 47). The questions allowing quantitative answers, incorporate a measure of data collected to a certain degree (Morgan, 2014, p. 49).

Although many of the responses to questions will allow for quantitative capturing, others will require narrative answers. Qualitative researchers find interest in developing an understanding of how people elucidate on their encounters to conceptualise their worlds and meanings they attach to their experiences (Merriam, 2009, p. 5). According to Merriam (2009, p. 15), a trait of qualitative research is that it is a primary process to gather data on which to build ideas, theories or hypotheses.

### 3.4 RESEARCH DESIGN

A research design is crucial to the linking of specific research actions with a broad research aim. Within the mixed method approach, there are particular designs. In mixed method designs, there are two significant categories, namely sequential and concurrent. Castro et al. (2010, p. 344) explain that in sequential designs, either the qualitative or the quantitative data is collected in the initial stage. In contrast to this design, both qualitative and quantitative originate in the initial stage according to the concurrent design.

As this study will be following the sequential plan, there are three types of designs to consider that is a) sequential exploratory, b) sequential explanatory and sequential transformative (Castro, et al., 2010, p. 344). The knowledge gained is an attribute as according to the researcher's experience, no previous study at the UFS incorporated gathering perceptions on the ability of the SCBG, that makes the study explorative, and being sequential, it is specifically a sequential exploratory study (Castro, et al., 2010, p. 344).

The diagram below explains the design.

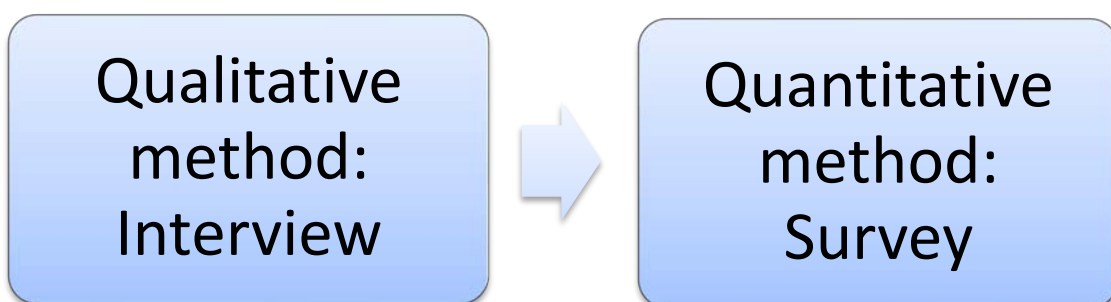


Figure 3-1: Sequential mixed-method design

This study will add valuable information regarding the design of a well-organised and reliable business generator in the online learning environment for the UFS.

### **3.4.1 Study population**

A population can be described as a set of people that has the same attributes that the researcher is interested in studying (Mouton, 1996: 134). In this study, the population consist of users of the financial models in the online learning environment. In this domain, there are two types of users, namely high-level users (in other words, HODs and senior directors), and those responsible for the initial input of data at their institutions (such as cost accountant, administrative officer etc.). The researcher will not exclude any participant based on background, sex, race or language. The information needed is specialised and will mitigate the challenge in the sampling process. Thus, the sample for the qualitative and the quantitative part of the study will be people with various degrees of knowledge on financial models at institutions that offer qualifications online.

According to Mouton (1996, p. 67), the population (unit of analysis) for the study is elected, based on the fact that it is possible and that the research question applies. The target population for this study are thus primary and secondary users of financial models similar to the SCBG.

Although the researcher knows the participants that will be used in the qualitative study (UFS staff), the researcher is not in a position of power with regard to influencing these participants. Concerning the survey, the researcher has no conflict of interest.

Furthermore, the researcher undertakes to get gatekeeper permission from each institution that will take part in the study. This method will be applied to the qualitative and quantitative study.

### **3.4.2 Sampling techniques**

There are many online universities across the world. Since the researcher found it difficult to determine the population size, the decision was taken to rely on literature to guide the process. Johnson (2004, p. 218) explains that the sample size should depend

on the population and that it depends on what level population is homogeneous or heterogeneous. More homogeneous will need a smaller sample but more heterogeneous will require a larger sample. Although the more categories or sections you want to analyse request a larger sample, it was proven through a mathematical calculation that you should not go larger than 384 (Johnson & Christensen, 2004, p. 218). Based on this information, keeping in mind that a mixed method approach is applied, it was decided to utilise a sample of 200.

Sampling can be defined as the selection of a subgroup in a study population (Henry, 2013, p. 77). According to Merriam (2009, p. 77), sampling consists of two kinds, namely probability and non-probability sampling. Probability sampling uses random processes instead of human judgement to identify research units, whereas non-probability sampling permits human judgement in a resolute or unintended manner (Henry, 2013, p. 78). In probability sampling, each member of the population has an equal opportunity of being selected, and a popular method used is random sampling (Creswell, 2014, p. 204).

Leedy and Ormrod (2015, p. 82) explain that in non-probability sampling, each element of the population is not necessarily included in the sample, and some have little chance to be included. On the other hand, non-probability sampling allows the researcher to analyse the contrast between high performing cases and low performing cases (Henry, 2013, p. 82). Non-probability sampling techniques include quota sampling, convenience sampling, purposive sampling, self-selection sampling and snowball sampling (Vehovar, et al., 2017, p. 329). The advantage of non-probability sampling is the fact that the sample guides data collection on various experiences to explore perceived issues and develop findings that are grounded in actual encounters (Henry, 2013, p. 81). Given all the different techniques, the researcher believes that purposive sampling, together with snowball sampling, will be used as sampling methods.

According to Morse (2011, p. 1), purposive sampling is intentionally seeking participants with specific characteristics that meet the need of the study. In this study, the need is to connect with members of the population who are willing to take part in the study and are knowledgeable of financial models in an online environment. These participants will be handpicked through internet searches and contacting them upfront,

to establish if they fit the need. After identifying a core set of participants, snowball sampling will subsequently be used to expand the sample, which is explained by Crouse and Lowe (2018, p. 1) as the process of generating a pool of participants through referrals by individuals who share the same characteristics. The initial core sample will be requested to utilise their existing networks and refer the researcher to other potential participants, thus expanding the sample.

The study consists of two parts, namely the qualitative part and the quantitative part. For purposes of qualitative research, the participants will be selected from the researcher's institution for in-depth interviews.

The sampling selection for this part is as follows:

*Table 3-1: Sample of the qualitative study*

<b>Target Population</b>	<b>Description</b>
<b>Candidate 1</b>	Director – Institutional Research and Academic planning
<b>Candidate 1</b>	Deputy Director – Finance – Business Projections
<b>Candidate 1</b>	Assistant Director – South Campus Academic Planning

Table 3.2 shows that the qualitative study will focus on three staff members of the UFS. These three staff members are selected based on their extensive knowledge regarding the development and use of the current SCBG.

The second part of the study is the quantitative part when participants will be from institutions other than the researcher's own. These will be from institutions in South Africa and other countries and will be based on internet searches, engagement and referrals as explained above.

*Table 3-2: Sample of the quantitative study*

<b>Target Population</b>	<b>Sample</b>	<b>Relative Frequency</b>
<b>Online business generator operators</b>	50	25%
<b>Support staff</b>	150	75%
<b>Total</b>	200	100%

Table 3.3 shows that the quantitative study will target two hundred individual users of financial models. Fifty of them will be financial model operators representing 25% of the sample. The other one hundred and fifty, representing 75% of the sample will be other users of online financial models. The universities will be identified through internet searches and will be contacted to identify appropriate persons who can take part in the study.

### **3.4.3 Data collection methods**

Following the sequential mixed method design, firstly, the researcher will interview the developer and two other users of the UFS business generator to gain a better understanding of the development, financial module variables included and the effectiveness of the current model. The researcher is the principal instrument for data collection and analysis of qualitative data (Merriam, 2009, p. 15). Merriam (2009, p. 88) explains that interviews allow the researcher "to obtain a special kind of information" as it will enable the researcher into the world of the interviewee. The interviews should take between 25–35 minutes to complete.

The researcher will guide the interviews through proper design interview schedule (Merriam, 2009, p. 102). However, typical of semi-structured interviews, the researcher will let the responses of the interviewee govern, and allow for authentic interaction to take place (Merriam, 2009, p. 107). According to Merriam (2009, p. 15), the advantage of utilising a human instrument is that it understands the goal of the study, can adapt and respond quickly and expand understanding of a specific concept by asking for clarity, confirming the accuracy and delve into different responses. Given these advantages, the author does warn that the shortcomings include objectivity in the interpretation of data (Merriam, 2009, p. 15).

Secondly, the quantitative data will be collected in the form of an online web-based questionnaire. According to Lavrakas (2008, p. 653), a questionnaire is a list of questions or items that request participants to answer to collect data regarding a specific topic. In this study, the researcher's topic for the questionnaire will be the financial model variables that are currently used in the SCBG, which was also confirmed in the literature study.

The use of a web-based online questionnaire has become prevalent as it replaced the traditional modes and can easily research a large population (Van Gelder & Bretveld, 2010, p. 1292). An online survey has gained popularity since it collects a vast amount of data in an efficient, cost-effective and timely manner. Furthermore, this method is very convenient as the participants can complete a questionnaire at any time and at their own pace (Regmi, et al., 2016, p. 641). The questionnaires should take approximately fifteen minutes to complete. Both Van Gelder and Bretveld (2010, p. 1293) and Regmi (2016, p. 641) agree that web-based questionnaires can be effortlessly adjusted. Some other advantages include the rate at which internet access is growing, creating the opportunity for web-based questionnaires to be used more in the future (Van Gelder & Bretveld, 2010, p. 1295).

There are, however, also shortcomings to this method. Such include the low or excessive non-response rate (Henry, 2013, p. 97); generally dealt with by creating the questionnaire to be self-explanatory and developed in such a way that participants must complete a question before moving on. Still, a low response rate is not always a distinct indication of the quality of information as response representation is seen as a more important concern (Lampert & Miller, 2014, p. 38). Another potential problem could arise as some participants might not feel comfortable answering at that point (Regmi, et al., 2016, p. 641). Also, the inability of researchers to use free and low-cost packages as many institutions only allow research if personal information is firewall protected (Van Gelder & Bretveld, 2010, p. 1295).

The data will be obtained from academic as well as support staff in unstructured and scaled choice questions. The advantage of simple questions lies in allowing participants to provide their view without restrictions (Creswell, 2014, p. 239). Alshenqeeti (2014, p. 40) agrees that it provides for an in-depth probing but highlights that a checklist should ensure that the discussion remains within set parameters of the study. Besides Alshenqeeti (2014, p. 40) also expresses concern that it is incredibly time-consuming to conduct these questions and labour intensive to analyse the data.

### **3.4.4 Data collection tools**

With the qualitative data collection, the researcher will use web-based tools, namely Zoom, Skype or Microsoft Teams, to conduct the interviews. All these have the facility to record the conversation and can easily be shared with the interviewee. The recording can also be transcribed later. The discussion will consist of six main questions set up by the researcher, but there might be follow up items depending on the answer provided by the interviewee. In the light of the current situation around the Covid-19 pandemic, conducting interviews via the web-based tools offer a perfect solution for a potential problem.

For the quantitative data, the study will utilise the Education Survey Automation Suite (EvaSys) available at [www.surveys.ufs.ac.za](http://www.surveys.ufs.ac.za) to design and develop an online, web-based questionnaire. EvaSys warrants total anonymity of responses and are easily accessible by generating HTML content. Data security is further enhanced by the fact that no third party is involved and the data collected is hosted on UFS servers. Also, the system uses controlled access to safeguard the data (Coetzer, 2018, p. 34)

The questionnaire was set up by the researcher to gather information on the financial model variables used in the current SCBG and those found during the literature study in Chapter 2. In the literature study, four financial models were found that highlighted some financial model variables. Based on the researcher's past knowledge of the current SCBG and the knowledge gained through literature, the questionnaire was set up, including all known financial model variables.

The questionnaire consists of four sections. The first section deals with general information about the participants and their institution. The last three parts seek to gain information on the participant institutions' financial model by understanding what financial variables are included and the importance of these financial variables. The importance of each variable will be in the last section indicated on a scale of 1–10 with space provided for financial model variables not known to the researcher. Furthermore, the researcher will make scaled responses.

With the questionnaire, the researcher attempts to evaluate the use and importance of current variables in online financial models.

### **3.4.5 Data analysis**

Data analysis is a continuous process throughout the research study and involves analysing the participant's information (Creswell, 2014, p. 261). According to Mouton (1996, p. 67), a study is reliable and realistic if proper methods of analysis are used.

The researcher will first analyse the transcribed interview data. Mouton (1996, p. 67) explains qualitative analysis includes processes such as thematic and content analysis. Terry (2017, p. 19) confirms that the thematic analysis is widely used in qualitative data analysis, mainly because it is flexible, accessible and also suitable for researchers new to qualitative study methods. Data will be analysed, and answers coded into themes, categories, concepts or typologies.

The researcher will then analyse the quantitative data using descriptive statistics. These include measures of central tendency through mean scores and percentages (Leedy & Ormrod, 2015, p. 241) as well as measures of variability, namely the standard deviation (Leedy & Ormrod, 2015, p. 246) which assists in explaining results from the quantitative data collected. Mutebi (2019, p. 126) adds that the mean score is a measurement of central tendencies by adding the values in distribution and dividing it by the total number of values and that percentages are used to express a number in proportion to another number. The standard deviation as a method of dispersion indicating to the researcher how far the average person is from the mean, meaning the higher the number is, the more scattered the values are from the mean. In contrast, a smaller value will indicate values closer to the mean (Chittaranjan, 2020, p. 410).

Secondly, the differences between sets of respondents will be analysed using the student's t-test, for two-groups, and the one-way ANOVA where more than two groups are compared. The student's t-test is designed to look at statistical significance in the mean score of two groups (Mutebi, 2019) According to Anders (2017, p. 253), the ANOVA and t-test are used in comparison for significant testing. This will be done to understand how the priorities of different groups in the sample vary. In addition to the

ANOVA test, the post-hoc test determines exactly where the differences lie. In this study, the Bonferroni ad hoc test is used. The section on the quantitative data analysis is concluded with an inclusion-performance map.

### **3.5 VALIDITY AND RELIABILITY**

In qualitative research, validity and reliability serve as a level of guarantee in respect of the outcome of participant performance as well as the degree to which the findings contribute to the research objective (Alshenqeeti, 2014, p. 43). Furthermore, Merriam (2009, p. 220) adds that reliability refers to the limit in a replication of the research findings that could pose a challenge in social sciences as human conduct is never constant. Still, reliability could be proven by leaving an audit trail dictating how the study was guided, and findings concluded. The validity of the study will be cautiously observed through communication with participants to ensure correct meaning and interpretation of results regarding the researcher as well as the participant (Merriam, 2009, p. 217).

In the quantitative research method, Creswell (2014, p. 200) adds that validity and reliability in the use of different instruments result in a study that interprets data in a meaningful manner. In the context of validity Creswell (2014, p. 206) explains that there are three types of measure regarding validity in a quantitative study, namely content validity, predictive validity and construct validity. In the study, the researcher would like to illustrate the use of content validity, whereby the instrument tests what is agreed to be tested. The researcher will aim to meet this measure by utilising the questionnaire as an instrument to verify what was decided to test. With regard to reliability, Creswell (2014, p. 206) claims that reliability is tested by comparison to the previous result to determine consistency in the result. This is a self-constructed questionnaire; therefore, reliability has not been proved over many studies. However, to test the internal consistency, the Cronbach's Alpha test was used. The Cronbach's alpha test measures the internal consistency or reliability in the application of the instrument, in other words, it determines how reliable the answers to the questionnaire are (Boyang, et al., 2018, p. 88). The test coefficient was calculated on all 23 scale questions and came out to be 0.874. According to Mutebi (2019, p. 120), this is expressed as a number between 0 and 1 with a point between 0.7 and 0.95 considered to be good.

## **3.6 ETHICAL CONSIDERATIONS**

Although institutions have policies, guidelines and adhere to the code of ethics, it also comes down to the individual researcher values and ethics (Merriam, 2009, p. 230). According to Strydom (2005, p. 56), the importance of ethics was not acknowledged in the past. There was also confusion between ethics and values. Strydom argues that values are concerned with excellent and desirable, whereas ethics is about right or wrong (Strydom, et al., 2005, p. 57). All research aims at producing valuable and trustworthy findings conducted ethically. Ethical considerations are essential if a study wants to contribute positively to the environment it investigates. As explained by Gupta (2017, p. 1), internet questionnaires that form part of quantitative data can reach many participants in a short time but raise concerns regarding ethical issues, especially concerning the protection of personal information. Still, in this study, the researcher will ensure anonymity by utilising questionnaires with an anonymous response. Specific ethical considerations such as the relationship between researcher and participants (Merriam, 2009, p. 230) along with informed consent and voluntary participation are imperative to the success of the study. The concerns regarding anonymity will apply to quantitative, whereas the confidentiality issues will apply to qualitative. The relationship concerns will apply to both data collection processes.

Firstly, the researcher wrote letters to the gatekeeper/s at the various institutions requesting permission for the identified staff to take part in the study. After permission is granted, the researcher commits to getting informed consent from each participant, both with the qualitative as well as quantitative study.

Regarding the security of the data-collecting software (EvaSys), it is password-protected and used only by UFS users whose computers are also password protected.

### **3.6.1 Anonymity**

Anonymity refers to data collected from participants entirely unknown to anyone connected to the study (Kennedy, 2008, p. 28). A critical aspect of the research is to respect participants' privacy by not disclosing information regarded as inappropriate by a reasonable person (Gupta, 2017, p. 6) and to protect of participants' identities at

all times (Merriam, 2009, p. 232). This type of ethical consideration is generally illustrated in quantitative data methods that collect information from anyone.

This study will adhere to the call of anonymity by utilising anonymous questionnaires where no participant information will be identifiable. The data will be kept in secure storage that is access controlled and password protected by the researcher. The researcher will identify questionnaires by the use of a unique code only known to the researcher.

### **3.6.2 Confidentiality**

Confidentiality in research is defined as dealing with information in a confidential manner (Strydom, et al., 2005, p. 61). Confidentiality also refers to the agreement with participants as to what might be done with their data (Sieber, 1992, p. 52). The agreement implies that information could be published where consent is granted. This type of ethical consideration is generally illustrated in qualitative methods of collecting data where the individual is known, but there is an agreement to respect confidentiality.

The study will collect data in a confidential format removing the risk of publishing personal information.

## **3.7 CONCLUSION**

In this chapter, the researcher considered the research methodology by describing the paradigm, approach, design, study population, data collection techniques, data analysis and ethical considerations. Each part of the research process will contribute to informing the researcher regarding the ability of the SCBG to inform decision-making on future online programmes at the UFS South Campus.

## **CHAPTER 4: DATA ANALYSES AND INTERPRETATION**

### **4.1 INTRODUCTION**

The self-constructed questionnaire used in the survey consisted of four sections. The first part provided the researcher with general information with regard to the participant and the institution. The second part consisted of questions to provide the researcher with information regarding the application of the model. The third part provides information on what variables are included and the fourth provides a view from the participants on the importance of the variables included.

The researcher exported the raw data from the completed questionnaire on EvaSys to a Microsoft Excel worksheet. The raw data from EvaSys were then bundled and checked to ensure the direction of the questions are all the same and that there are no instances of negative items (items that measure the opposite of the intended concept). If the researcher found any instances of negative items, these had to be inverted to align with the other data.

The data were first analysed by generating descriptive statistics. Thereafter, to enable the researcher to generate differential statistics, the data was exported to IBM SPSS 25. In the sub-sections below, the researcher will discuss the sample itself, followed by the descriptive and differential statistical procedures that were used.

### **4.2 RESPONSE RATE**

Although the intention was to use a sample of 200 participants, and the link to the survey was distributed widely, only 18 responded. Although the response rate is fairly low, the size of the sample is not always a distinct indication of the quality of information, as was explained in Chapter 3 under section 3.4.3 Data collection methods. Given this assurance, the researcher decided to conclude his study analysing the data received.

### 4.3 SAMPLES USED

The biographical data describes the participant as well as the institution with regard to nature of the appointment, level of appointment, the delivery model used at the specific institution and the size of the institution indicated by the number of faculties/schools.

#### 4.3.1 Interview participants

As explained in 3.4.2, three participants from the institution were interviewed to generate qualitative data on the institutions' financial model. All three whom I intended to interview, agreed.

#### 4.3.2 Survey sample biographical data

Due to the inadequate response to email correspondence from the institutions, the researcher used LinkedIn to connect with individuals appointed in the listed institutions. This enabled the researcher to distribute 200 surveys, of which only 18 were returned. The sample of data consisted of academic and support staff. Academic staff include all levels of lecturers and researchers. The details are provided below.

*Table 4-1: Role of respondents*

Role	Number	%
Academic	10	56%
Support	7	39%
Not Responding	1	5%
Total	18	100%

Thirty-nine per cent of the sample are in support staff positions, whereas 56% are in academic positions and 5% did not indicate any role.

With reference to each participant's role within their institution, Table 4-2 below describes the variety of participants that took part in the study.

Table 4-2: Position of the participants

Role	Number	%
Data input	0	0
Review/Manager	1	6%
HOD Finance	2	11%
Senior management	8	44%
Programme Director/Online Dean	3	17%
Online Teacher	1	6%
Instructional designer	3	17%
<b>Total</b>	<b>18</b>	<b>100%</b>

The mode in the above table is “Senior Management” with 8 of the 18 respondents indicating that they form part of this group. The rest were from a variety of positions all relevant to the study.

Table 4-3 below informs the study with regard to the various modes of delivery amongst the institutions that took part in the study.

Table 4-3: Number of respondents based on the mode of delivery of the institution

Mode	Number	%
Face-to-Face	0	0%
Face-to-Face & LMS	4	22%
Face-to-Face, LMS & online	12	67%
Online only	2	11%
<b>Total</b>	<b>18</b>	<b>100%</b>

None of the respondents indicated that their institution exclusively uses face-to-face classes, while most of the respondents (67%) were from institutions offering face-to-face and online mode of delivery, using an LMS.

The variations of respondents from institutions with different numbers of faculties or schools are shared below.

Table 4-4: Number of respondents based on the number of schools or faculties of the institutions

Number of school / faculties	Number	%
1–4	5	28%
5–7	1	6%
8–10	4	22%
>10	8	44%
<b>Total</b>	18	100%

From the above table, it can be seen that there is quite a difference in terms of the number of schools or faculties at the institutions where the respondents work – 28% of the participants only having 1–4 schools/faculties while 44% of participants have more than 10 schools/faculties.

#### 4.4 THE FINANCIAL MODEL USED BY THE UFS

Part of the qualitative data collection was to conduct interviews with staff working at the researcher’s institution. The interviews were transcribed, and information will be analysed below.

Certain themes emerged from the data that were generated through the interviews, and these are reported on in the sections that follow. Merriam (2009:254) gives clear guidelines regarding qualitative data reporting:

*The findings of a qualitative study are inductively derived from the data collected through interviews, observations or documents. Some of these very same data need to be presented as **evidence** for the findings. It is the quality and quantity of the evidence provided that persuades the reader that the findings are trustworthy (Merriam, 2009:254; emphasis in original).*

Direct quotes are thus used throughout to substantiate claims and to ensure trustworthiness. In order to protect the identities, each interviewee was given a code (e.g. #C1). Where names of individuals were mentioned by the participants, the names were removed, and a description was put in square brackets, also to protect identities.

## 4.4.1 Background and purpose of the model

Participants provided information concerning the purpose of the model.

### 4.4.1.1 History

It became clear from the interviews that the business generator was developed quite a while ago. #C1, for instance, shared: *“I’ve been using it since 2011”* while #C2 confirmed that it was used *“at least for [the last] 10 years”*. #C3 could not remember exact years but mentioned it was already used numerous times in projections (*5 years ago, 6 years maybe – but as to the number of times it was used – it is unlimited*).

All of the participants confirmed that another institution originally designed the business generator (a multi-university project as well as all the HEMIS people and so on; actively developed by a team, I think it is the IDCS (#C3); the Excel was developed by the guys in Potch [North West University] (#C2). However, at the UFS, it *“has gone into different phases (#C1)”* but it started with the purchase and development of the HEDA system.

### 4.4.1.2 Viability

In the interviews, the term viability was commonly used among the participants in reference to the feasibility of a subject or qualification to be delivered. #C2 mentioned that a business generator is a tool *“to see if a new subject, course or programme is financially viable and how many years it is going to take to be viable”*. #C3 echoed the importance of the viability, describing it as the primary purpose (*main purpose was to determine the viability of a qualification*). #C1 supported the view (*basic principle to see whether this qualification that a Department or a Faculty want to propose actually has a viable*), but added that the business generator also takes the cost of the student journey into account (*basically looked at how much it costs to take a student through the system*). The curriculum must be taken into account as well (*If you don’t have a curriculum, you cannot work out the viability (#C1)*). In addition, #C3 emphasised that the business generator is used to indicate whether the institution will grow financially through the project (*to determine when you plan a new qualification that it will at the end make money and not cost the institution a lot of money*).

#### **4.4.1.3 Financial sustainability**

The interviews highlighted another purpose, that of a programme reaching financial sustainability. Participants voiced the importance that a subject and a qualification programme must not only be viable but must also be financially sustainable. #C1 explained it as follows: *“the basic idea is to see how much a qualification will cost to get it up and running and make it sustainable. So not only just viable to start [with] but [to be] also sustainable in the long run”*. #C3 also emphasised that it is important to know how long it will take to get there (*it is about getting yourself to the point of sustainability*) and that leads the discussion to the concept of break-even.

#### **4.4.1.4 Break-even**

Participants shared that a new qualification sometimes takes time to break even and this according to the interviews is considered as an essential step in the calculation, knowing how many students will ensure that the income meets the cost. #C1 explained that qualifications usually only break-even after a few years and mentioned the challenging situation of paying for cost while making a loss. It was explained that for a new qualification, the institution often has to *“employ new staff members”* and then *“the most difficult consideration is the fact that you usually only break-even by year three (3) or year four (4) depending on the input cost.”* #C3 similarly highlighted the concept of break-even as a target for the institution to start generating profit (*how long it will takes this qualification to break-even or start to make money for the institution*).

### **4.4.2 Variables**

The participants made it clear that understanding the effect variables have on the viability of programmes is essential and that it is important to include these in the business generator. As #C2 put it: *“It is obvious that you have to have those variables, Variables are things that change, you obviously must have two things basically, the Income and the Expense”*. In the section that follows, variables that fall under these two categories will be discussed.

#### **4.4.2.1 Income**

From the interviews, there are two types of income that stood out. The subsidy received as part of government funding and the tuition fee.

a) *Teaching input and Teaching output (Subsidy)*

The teaching input and teaching output directly influences the outcome of the calculation. #C1 highlighted the importance of teaching input and teaching output as follows:

*It looks basically towards what the teaching input, what that will cost you; the teaching output at the end of the day if a student goes through the system in the minimum time or minimum time plus 1.*

#C3 also supported this view that the teaching input and teaching output form the basis of the income calculation (The basis of the model has input, output, how much money this student in this qualification in this module is generating).

#C2 further elucidated that the subsidy is influenced by the level of the course (*The subsidy is obviously; what level are the course*). Furthermore, #C2 emphasised that a correct number of students is needed to calculate the subsidy correctly (*The most important indicator is the number of first time undergraduates your [you're] gonna take into this qualification and then to exactly know in what CESM or funding level the modules is*). #C2, however, pointed out that qualifications might not qualify for a subsidy, in which case the tuition income would be the most important source of income (*depends on if you get subsidy or don't get subsidy, which one of tuition or subsidy is the most important*)

b) *Tuition fee*

From the interview, the tuition fee is considered the second most significant source of income, and it is not that difficult to calculate. #C1 explains: *“modular pricing structure is still fairly simple, it uses a one-credit equals type of basis, so the modular prices can easily be interpreted, and it can be input into the model to get a rough estimation”*. #C2 supports the importance of including tuition fee by stating: *“biggest [types of] income are subsidy and tuition. Those are the things that makes up the income, so you must have them.”*

In addition, the impact of the curriculum on tuition fee was explained by #C1 who stated that: *“if you don't know how your curriculum is going to look, your credit share all of*

those things [and] the actual per model price” it gets difficult to calculate the tuition income.

#### **4.4.2.2 Expenses**

In the interviews, the importance of the expense variables in addition to the income variables was explained. #C2 confirmed this by stating that “*you obviously must have two things basically, the Income and the Expense*”. Some concepts discussed in the interviews included salaries, hidden cost and number of students.

It became clear from the interview that salaries were one of the main cost drivers. #C1 referred to the “basic salary structures; What it actually costs to host a student on the campus” that includes “additional costs [which include for], example the support staff, teaching and learning and all of those items”. #C2 supports the importance by stating: “obviously salaries if you are on the expense side, the expense side is basically salaries, that is the biggest direct cost for the university”.

##### *a) Hidden costs*

Hidden costs are costs that are generally not easy to identify. Especially regarding costs associated with technology. #C1 explains: “*It gets complicated when you start looking at distance education and online education, things that bring in additional costs, especially technology.*” #C2 echoes the importance of including technology cost by stating: “*South Campus (Open Distance Learning campus), you need a lot of computer power, storage, if you don’t put that in, it can be that the subject is financial viable*”. #C2 also adds that “*sometime difficult for us to know beforehand, what’s the overheads going to be like, my salary, main campus and planning and all those extra cost*”, leaving it out could indicate that a subject or qualification seems viable which could not be true.

##### *b) No. of students*

From the interviews, it was clear that the number of students enrolling, continuing to next year and falling out is an essential factor to take into consideration. All participants agree that student numbers are vital with #C1 stating: “*The second most important or equally important is your student numbers*”. #C2 also supports the statement by confirming that it is all about “*how many people take the subject [or qualification]*”. In

addition, #C3 also highlighted the importance by declaring it is a “*process where you calculate all your students and new students, the success rate and the time they take to complete the degree*”.

### **4.4.3 The success of the business generator**

Although some of the participants agreed to the success of the business generator others did not agree. #C1 states “I think the concept of a business generator is successful; but if you know how to use it and properly trained, it is a very useful model, effective tool” #C2 explains that if it “just look at one subject or one programme” it is “basically correct” as a “standalone kind of thing” and useful to “proof [prove] to the management that this thing [or qualification] are going to make some money”. In contrast to the views above #C3 feels the “success of the business generator is debatable” and could be more towards a “50:50 estimate”. #C3 further explains that the accuracy increases if “everything is fixed, you've got a fixed curriculum, fixed departments, fixed modules only in a faculty, then it's easy”.

#### **4.4.3.1 Factors affecting success**

From the interviews, it became clear that the participants agree that sometimes the business generator could be more successful than other times. #C2 adds that “*It can be completely different if you make a mistake with how many students, the pass rates and how many students come back*”. #C3 supports #C2's view that data inserted determines the outcome by explaining “*if a qualification belongs 100% to a department or faculty this is easy to not make a mistake*”. #C1 adds that experience and knowledge (*historical data for some [new] qualification; information of the trends [in] distance education specifically*) informs the variables of the business generator and improves accuracy.

#### **4.4.3.2 Delivery – Contact or Distance**

An interesting insight from the interviews was the impact of the mode of delivery on the success of the business generator. As #C1 put it: “*from a contact programme perspective, it [the UFS business generator] was quite accurate and sometimes a little conservative*”. #C1 however then continued that the distance delivery differs from contact regarding student numbers (*the distance model actually worked complete the*

opposite way that it worked with a normal contact programme). The uncertainty about the Departments of Education's relationships increases the difficulty to determine the future number of students as #C1 explains: "*We didn't necessarily know that we won't get a contract every two years for 2 000–2 500 students*".

#### **4.4.4 Challenges**

In the interview, #C3 highlighted the high number of variables by stating: "*too many variables make the business plan generator a risk to use as a 100% safe indicator to determine the viability*". In addition, #C3 explains that the business generator is only an indicator (*most important thing you only can use the business plan generator as an indicator and not as an exact science*). #C2 added that: "*this thing doesn't tell you which subjects we are over enrolled in*" increasing the difficulty of the subsidy calculation (*It is very difficult because of the subsidy*) resulting that the university is "*over enrolled, so we lose money.*"

#C2 underlined the importance of the data input by stating: "Let me just tell you, don't let just somebody fill it in; Super-user must be somebody that knows how the subject work and what's all the cost and must be in the management of for example South Campus". #C2 further explains that "It's impossible, sitting on the main campus, like for instance because they don't know exactly what is going on" to complete the business generator accurately.

#### **4.4.5 Proposed changes**

From the interview, it became clear that the business generator is not perfect, and #C1 proposes that the business generator is redesigned as a "*financial model*" in a "*more hybrid version, something a bit more robust, and isn't necessarily too hinged on contact and distance base education*". #C3 would like to "*Add [a] few extra variables [to] get a performance standard*". #C3 adds that no predictive model will work if the accountability of information is not enforced (*you are never going to get a predictive model that will work right*).

a) *Market analyses*

#C1 underlined the importance of market research during the interview. (So the most important variable is actually considering your market analysis) and the impact it has on the numbers inserted into the business generator. #C1 lamented that “people do not do a proper market analysis to really see what are the potential numbers you can get”. #C1 further suggests that a “marketing analysis should come to the fore [and] it should actually be an addendum to this business generator especially in the light of 4IR, changing environment [and] the effects of COVID-19”.

#### **4.4.6 Importance of a model**

During the interview, #C1 explained that “higher education is now a business” and continued: “I don’t think that this is something universities can go out with”. #C1 also adds that “the government chunk of finances or funds that the universities get every year, gets less and less” adding to the importance of seeking new sources of income (so it’s all about getting your income from other sources).

From the interviews, the importance of a financial model such as the SCBG, to provide information on viability as well as financial sustainability to the institution was clear. Although the tool is not perfect and dependent on the correct data input, it is still useful. From the interviews, it was highlighted that it is not just the completion of the model that determines success but also the legitimacy of the information gathered to be completed. Clear guidelines should be provided to assist departments when completing the business generator.

#### **4.4.7 Summary table of qualitative data**

Table 4-5: Summary of qualitative data

<b>COMMENT</b>	<b>REFERENCE</b>
The main purposes of the financial model are to provide guidance on the viability as well as financial sustainability of a program.	§ 4.4.1.2 and 4.4.1.3

Various income and expense variables directly impact on the accuracy of the financial model. Attention should be given to ensure completeness with regards to variables.	§ 4.4.2
Income variable such as subsidy, both input and output along with tuition fee are instrumental in calculating potential income.	§ 4.4.2.1
Expense variable are directly influenced by student numbers, estimating these can be a challenge. Cognisance should be given to hidden cost to avoid surprises with regards to unforeseen expenses.	§ 4.4.2.2
The success of the business generator largely depend on the accuracy of forecast(especially student numbers) and data input.	§ 4.4.3
The financial model has clear challenges from data input to determining subsidy. Many factors outside the capturers control will influence the actual result in comparison to projection.	§ 4.4.4
The reliability on data inserted are extremely important, proper market analysis and accountability should be enforced to ensure accuracy.	§ 4.4.5
Having a financial model in these uncertain times is not negotiable but it should be developed to be user friendly and used to secure funding form non-traditional sources.	§ 4.4.6

## 4.5 FINANCIAL MODELS USED BY EXTERNAL INSTITUTIONS

The question that is answered in this section is how the UFS' model compares to models used by other institutions. In order to understand models used by other institutions (4.5.1), the survey data will be analysed and discussed. Thereafter, the interview data is analysed and discussed to get a clear understanding of the UFS'

model (4.5.2). Information from these two sets of data is used to inform the comparison (4.5.3).

### 4.5.1 Overview

Following demographic information, the second part of the questionnaire aimed to get an overview regarding how financial models work at the institutions where the respondents are employed. Firstly, respondents had to indicate the name of the business model, and in this sample, the term “Break-even model” seems to be the most popular (39%). Other terms used by respondents are *cost model* (28%) and *revenue model* (22%) while 11% indicated that it is referred to as something else.

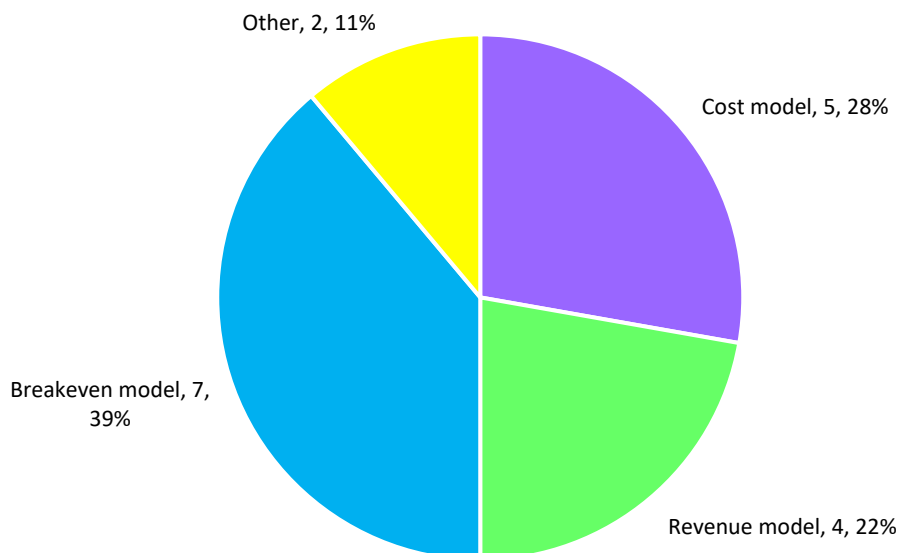


Figure 4-1: Name of the financial model (n=18)

One of the respondents who marked “other” indicated that their university is state-owned and that the “financial model is not a big issue here (#R14)”. The other one shared that “Our model looks at Revenue, Costs and break-even (#R18)”.

The respondents were asked to indicate the regularity with which their institutions use financial models to determine break-even, and the results are displayed below.

*Table 4-6: Regularity with which institutions use financial models to determine the break-even*

Option	Use financial model to determine the break-even	%
Never	2	11%
Sometimes	3	17%
Mostly	6	33%
Always	7	39%
Total	18	100%

More than 70% (6+7) of the respondents indicated that financial models are regularly used to determine break-even (39% always; 33% mostly). On the other side, two (11%) indicated that it is never used.

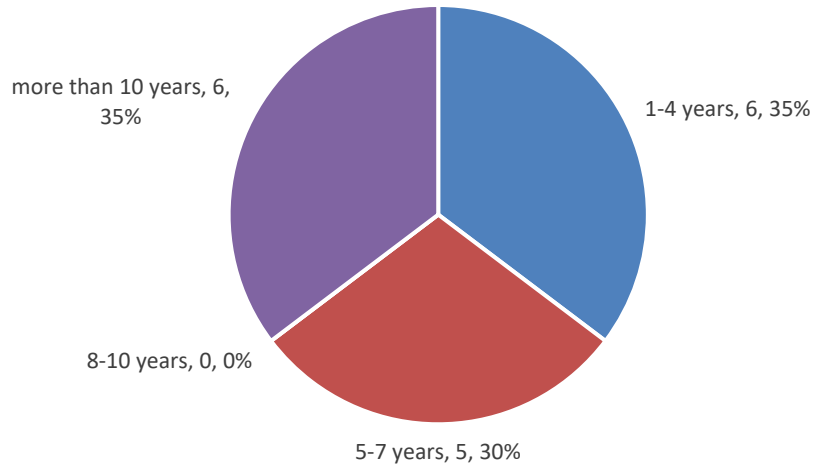
Related to this was the question of whether institutions only approve programmes once the viability was tested using a business model. The responses are summarised below.

*Table 4-7: Use of financial model*

	Programmes only approved after use of the financial model	%
Never	2	11%
Sometimes	6	33%
Mostly	6	33%
Always	4	22%
	18	100%

Only 4 of the 18 respondents (22%) indicated that their programmes are approved after the model is used. In contrast to this finding, 11% (2 respondents) indicated that their programmes are approved without the use of a financial model. This might be indicative that higher education institutions are not always as strict in the application of good financial principles like profit-driven companies.

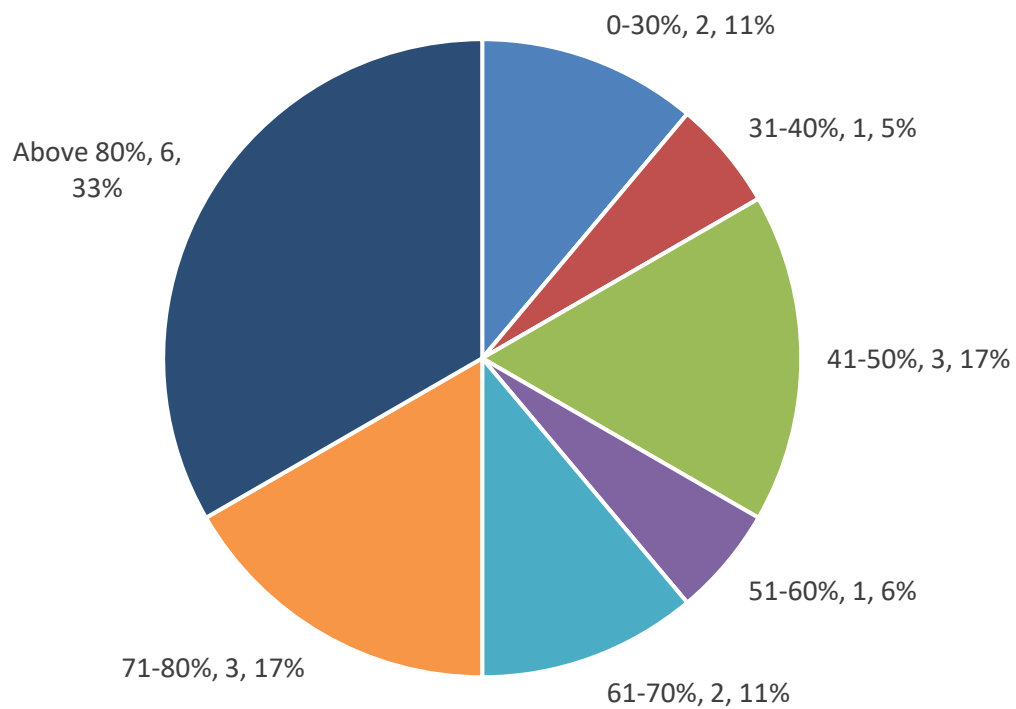
The respondents were also asked to indicate how long they have been using their specific financial model. The responses are indicated in the diagram that follows.



*Figure 4-2: Number of years the institutions of the respondents have been using financial models (n=17)*

Figure 4-2 shows that at more than two-thirds of the respondents' institutions, financial modelling is a relatively new practice (35% of them have used the model for 1–3 years and 30% using in between 4 to 7 years). On the other hand, the remaining 35% shared that financial models have been used for more than 10 years. One respondent did not respond to this question.

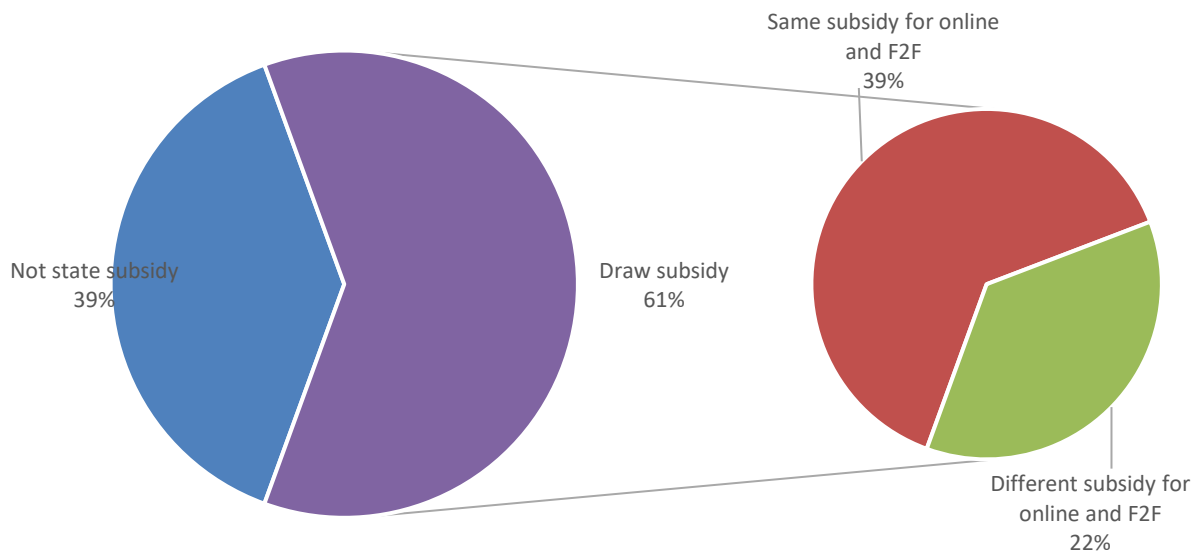
Following the previous question, respondents were also asked to indicate their views in terms of the accuracy of the financial model. The responses are indicated in the following diagram.



*Figure 4-3: Respondents' views on the accuracy of the financial model that they use*

From the accuracy perspective, 33% indicated that their model is >81% accurate, and 17% said their model is 71%–80% accurate. That suggests that half of the respondents (9) are convinced that their model is reasonably accurate (71% or more). Only 11% (2) indicated that their model is 30% or less accurate.

Respondents were probed concerning subsidy.



*Figure 4-4: Status of state subsidy at the institutions of the respondents (n=18)*

Of the 18 respondents, 11 (61%) indicated that their institution indeed received government subsidy. Of those, 7 (64%) indicated that the subsidy is the same for online and face-to-face programmes.

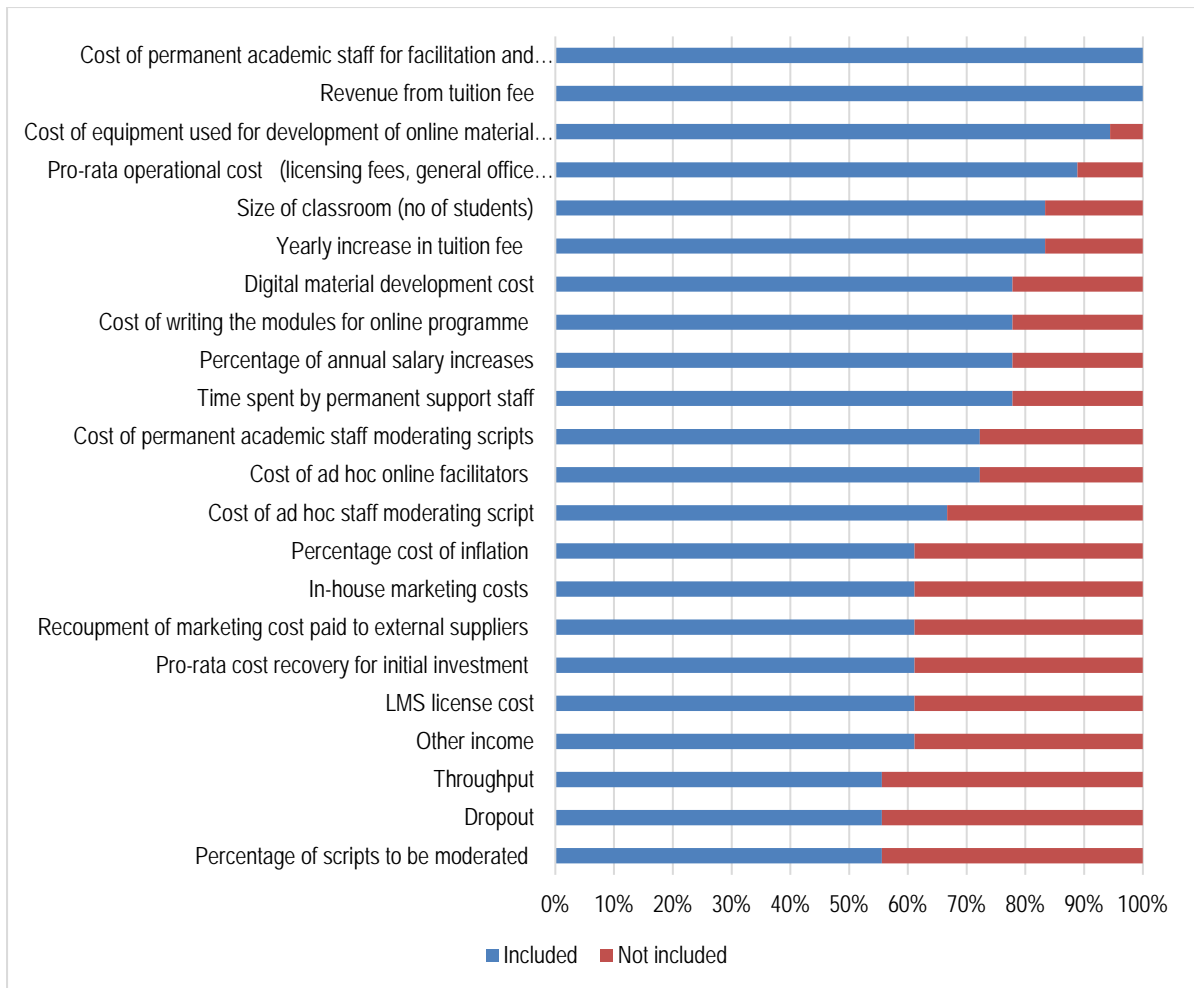
The last question posed in these sections related to the increase of their online programme income. The majority (83%) of the participants indicated that their income from online programmes has increase over the last five years.

## **4.5.2 Financial model variables**

The second part of the questionnaire focused on the variables that can be included in a financial model.

### **4.5.2.1 Variables used by institutions**

Respondents were first asked to indicate if each of the variables is included in their financial model. They were then given the very same list and asked to indicate how important they deemed that variable. In the section that follows, the responses are analysed.



*Figure 4-5: Overview of variables included in financial models at the institutions of the respondents (n=18)*

All (100%) of the participants indicate that “Revenue from tuition” and “Cost of permanent academic staff” are included in their financial model. The three variables that are the least commonly used are “Throughput”, “Dropout” and “Percentage of scripts to be moderated”. However, it must be pointed out that more than 50% of the participants indicated that these three are included in their financial model, suggesting that it is fairly commonly included.

Respondents were requested to also share the detail with regard to the incorporation of dropouts and throughput in their financial models.

a) *Dropout*

The question was posed to the respondents: If you include dropout percentage, what is your percentage for year 1, year 2 and year 3 of the programme? (Example: 1<sup>st</sup> year = 3%; 2<sup>nd</sup> year = 3.5% and 3<sup>rd</sup> year = 3%). The information shared is displayed in the table below.

*Table 4-8: Responses with regard to how dropout is included in the financial model*

Respondent	Year 1	Year 2	Year 3
#R3	1-year programmes		
#R4	We do 1 <sup>st</sup> to 3 <sup>rd</sup> term retention, which we see 16% dropout/withdrawal rate		
#R6	3%		
#R10	7%	2%	2%
#R11	20%		
#R12	30%	20%	10%
#R16	Not sure		
#R17	We use actual data. When forecasting we use different rates for different programmes.		
#R18	Varies based on course type and prior year trends		

From the above table, it is evident that there are variations with regard to how dropout is included in the model. Only two respondents indicated that dropout is also regarded in the second and third year: #R6 & #R11 replied with 3% and 20% respectively. #R10 responded with figures of Y1 (7%), Y2 (2%) and Y3 (2%), in contrast #R12 responded with Y1 (30%), Y2 (20%) and Y3 (10%). #R4, for instance, confirmed that they do retention from first to the third semester during which a dropout/withdrawal of 16% is recorded. On the other hand, #R17 explained that they use “actual data” and apply “different rates for different programmes [when] forecasting”. #R18 similarly indicated that it “varies based on course type and prior year trends”.

b) *Throughput*

Some respondents also provided additional information regarding how the throughput rate is included. The question was posed: If you include throughput percentage, what is your throughput percentage for minimum period + 1, minimum period +2 and

minimum period +3? An example was provided (Example: min + 1 = 60%; min + 2 = 20% and min + 3 = 10%)

Table 4-9: Responses with regard to how throughput is included in the financial model

Respondent	Year 1	Year 2	Year 3
#R3	All: Participation-based, need not complete all activities		
#R4	84%		
#R6	90%	80%	70%
#R12	Inverse of the dropout estimates.		
#R13	60%		
#R14	Follows a unique model of giving out Certificate after 1 <sup>st</sup> year, Diploma after 2 <sup>nd</sup> year and Degree after 3 <sup>rd</sup> year. Thus rate of drop is negligible.		
#R15	60%		
#R16	Not sure		
#R17	We use actual data. When forecasting we use different rates for different programmes.		
#R18	Varies based on course type and prior year trends		

From the above table, it is evident that there was a variety in responses when it comes to throughput. #R3 explained the influence of throughput on their model by stating: “*All Participation-based, need not complete all activities*”. #R5 indicated a throughput of 84% for the first year, whereas both #R14 and #R15 indicated 60% for the same period. #R6 replied responded by indicating a 90% (Yr1), 80% (Yr2), 70%(Yr3) in throughput. #R12 responded by stating: “*Inverse of the dropout estimates*” and #R14 by explaining that their rate of drop is negligible as they “*Follows a unique model of giving out Certificate after 1<sup>st</sup> year, Diploma after 2<sup>nd</sup> year and Degree after 3<sup>rd</sup> year.*” #R16 was “not sure” in the response.

Both #R17 (We use actual data. When forecasting we use different rates for different programs) and #R18 (Varies based on course type and prior year trends) explained that their throughput changes per programme or course.

#### 4.5.2.2 Perspectives on the importance

Irrespective of whether respondents' institutions include the listed variables, they were asked to evaluate the importance of each of the variable on a scale of 1–10. The summative statistics (mean score and standard deviation) is provided in the table that follows. The variables are sorted based on the mean score per variable, from what is deemed the most important to the least important.

*Table 4-10: Summative statistics on the perspectives of the respondents on the inclusion of variables (n=18)*

	N	Mean	Standard deviation
Revenue from tuition fee	18	9.00	2.196
Time spent by permanent support staff	18	7.89	2.374
Cost of permanent academic staff for facilitation and marking of programmes	18	7.78	2.315
Cost of ad hoc online facilitators	18	7.72	2.845
Cost of equipment used for development of online material (studio recording equipment, laptops, lights, microphones etc.)	17	7.71	2.687
Recoupment of marketing cost paid to external suppliers	16	7.44	2.874
Throughput percentage per year	18	7.39	3.274
Cost of writing the modules for online programme	18	7.33	3.290
Pro-rata operational cost (licensing fees, general office expenses, rates and taxes, maintenance)	18	7.28	3.177
Size of classroom (no of students)	18	7.28	3.232
Cost of permanent academic staff moderating scripts	18	7.22	2.942
Digital material development cost	18	7.22	3.116
Dropout percentage per year	18	6.94	3.472
In-house marketing costs	18	6.94	3.438
Percentage cost of inflation	18	6.89	3.288
Percentage of annual salary increases	18	6.83	2.684
Pro-rata cost recovery calculation for initial investment	18	6.83	3.730
Recoupment of LMS license cost	17	6.76	3.327
Percentage of scripts to be moderated	18	6.39	3.415

	N	Mean	Standard deviation
Cost of ad hoc staff moderating scripts	18	6.33	3.548
Other income (such as subsidy and grants)	18	6.22	3.574
Yearly increase in tuition fee	18	6.17	3.485

The four variables regarded by the participants as the most important are indicated at the top of the table with a mean ranging from 7.7–9. It is interesting to note that 3 of the 5 variables (60%) involve staff related cost. The lowest ranked variable at a mean of 6.17 is usually linked to the cost of inflation, and the result might be indicative that inflation does not have such a significant influence on tuition fee as in South Africa.

It is important to note that the variable that was deemed the least important is still above 6 on a scale of 1 to 10, so it is still regarded as moderately necessary.

With 100% of the participants confirming the inclusion of “permanent academic staff” and “revenue from tuition” it serves as confirmation that these two variables were also mentioned among the top three variables when it comes to importance. Interestingly less than 80% mentioned the inclusion of “Time spent by permanent support staff”, still it was mentioned as the second most important variable. Maybe it directly relates to the composition of the participants according to the mode of delivery. Face-to-Face, LMS and online, comprising 66% of the respondents, illustrates the importance of support staff in the success of distance education. Furthermore, it is worth noting that 65% of participants indicated that “Cost of ad hoc moderating scripts” is included in their financial model but it was rated the third least important variable indicating to me that moderation might form part of their workload and therefore there is no need to pay ad hoc people to assist. Although the “Recoupment of marketing cost paid by external suppliers” was considered fairly important with a ranking of 7.44, just over 60% believed that it should be included in the calculation.

Although the final sample was very small, in order to gain some insight into the difference between different sets of respondents, inferential tools were used to distinguish between groups. This was done using the fairly robust *students t-test* and the one-way ANOVA.

a) *Differences based on mode of delivery*

Respondents were from institutions that differ in terms of mode of delivery. The differences between their mean scores were compared using the one-way ANOVA

Table 4-11: Perceptions on the importance of variables, per mode of delivery

		N	Mean	Std. Deviation	F	Sig.
Revenue from tuition fee	All face-to-face with LMS	4	9.75#	0.500	0.293	0.750
	Some F2F & LMS, others online	12	8.83	2.588		
	Only online programmes	2	8.50	2.121		
Other income (such as subsidy and grants)	All face-to-face with LMS	4	7.50#	4.359	3.097	0.075
	Some F2F & LMS, others online	12	6.67	2.964		
	Only online programmes	2	1.00	0.000		
Yearly increase in tuition fee	All face-to-face with LMS	4	7.50#	4.359	0.355	0.707
	Some F2F & LMS, others online	12	5.83	3.010		
	Only online programmes	2	5.50	6.364		
Time spent by permanent support staff	All face-to-face with LMS	4	7.50	4.359	0.108	0.898
	Some F2F & LMS, others online	12	7.92	1.832		
	Only online programmes	2	8.50#	0.707		
Percentage of annual salary increases	All face-to-face with LMS	4	8.75	1.893	1.711	0.214
	Some F2F & LMS, others online	12	6.50	2.276		
	Only online programmes	2	5.00	5.657		
Cost of permanent academic staff for facilitation and marking of programmes	All face-to-face with LMS	4	6.75	4.031	1.531	0.248
	Some F2F & LMS, others online	12	8.42	1.505		
	Only online programmes	2	6.00	1.414		
Cost of ad hoc online facilitators	All face-to-face with LMS	4	7.50	4.359	0.094	0.911
	Some F2F & LMS, others online	12	7.92	2.539		
	Only online programmes	2	7.00	2.828		
Cost of permanent academic	All face-to-face with LMS	4	7.00	4.082	2.228	0.142
	Some F2F & LMS, others online	12	7.92	2.392		

staff moderating scripts	Only online programmes	2	3.50	0.707		
Cost of ad hoc staff moderating scripts	All face-to-face with LMS	4	5.25	4.924	1.180	0.334
	Some F2F & LMS, others online	12	7.17	3.186		
	Only online programmes	2	3.50	0.707		
Percentage of scripts to be moderated	All face-to-face with LMS	4	5.25	4.924	0.549	0.589
	Some F2F & LMS, others online	12	7.00	3.075		
	Only online programmes	2	5.00	2.828		
Cost of writing the modules for online programme	All face-to-face with LMS	4	5.25	4.924	1.036	0.379
	Some F2F & LMS, others online	12	7.92	2.811		
	Only online programmes	2	8.00	1.414		
Digital material development cost	All face-to-face with LMS	4	5.75	4.425	0.559	0.583
	Some F2F & LMS, others online	12	7.58	2.906		
	Only online programmes	2	8.00	1.414		
Cost of equipment used for development of online material	All face-to-face with LMS	3	6.67	4.933	0.570	0.578
	Some F2F & LMS, others online	12	8.17	2.038		
	Only online programmes	2	6.50	3.536		
Pro-rata operational cost (licensing fees, general office expenses, etc.)	All face-to-face with LMS	4	7.50	4.359	1.241	0.317
	Some F2F & LMS, others online	12	7.75	2.734		
	Only online programmes	2	4.00	2.828		
Recoupment of LMS license cost	All face-to-face with LMS	3	9.00	1.732	0.861	0.444
	Some F2F & LMS, others online	12	6.17	3.689		
	Only online programmes	2	7.00	1.414		
Pro-rata cost recovery calculation for initial investment	All face-to-face with LMS	4	7.00	4.243	3.709	0.049*
	Some F2F & LMS, others online	12	7.75	3.079		
	Only online programmes	2	1.00	0.000		
Size of classroom	All face-to-face with LMS	4	7.00	4.243	1.327	0.295
	Some F2F & LMS, others online	12	7.92	2.678		

(no of students)	Only online programmes	2	4.00	4.243		
Recoupment of marketing cost paid to external suppliers	All face-to-face with LMS	4	7.25	3.775	4.220	0.039*
	Some F2F & LMS, others online	10	8.40	1.647		
	Only online programmes	2	3.00	2.828		
In-house marketing costs	All face-to-face with LMS	4	6.75	4.272	0.595	0.564
	Some F2F & LMS, others online	12	7.42	3.118		
	Only online programmes	2	4.50	4.950		
Percentage cost of inflation	All face-to-face with LMS	4	6.75	4.272	0.022	0.979
	Some F2F & LMS, others online	12	7.00	3.075		
	Only online programmes	2	6.50	4.950		
Dropout percentage per year	All face-to-face with LMS	4	6.75	4.272	0.094	0.911
	Some F2F & LMS, others online	12	7.17	3.563		
	Only online programmes	2	6.00	2.828		
Throughput percentage per year	All face-to-face with LMS	4	6.75	4.272	0.293	0.750
	Some F2F & LMS, others online	12	7.33	3.284		
	Only online programmes	2	9.00	1.414		

\* Statistically significant difference on a 95% probability level

# Highest mean score

For the two variables where the p-value suggests a statistically significant difference (*Pro-rata cost recovery calculation for initial investment* and *Recoupment of marketing cost paid to external suppliers*), the Bonferroni post hoc test was applied pairwise. It showed that there is a statistically significant difference on *Pro-rata cost recovery calculation for initial investment* ( $p=0.047$ ) between respondents that are from institutions that offer *Some F2F & LMS, others online* and those who offer *online programmes only*.

b) *Differences based on whether income from online programmes at the respondents' institution has increased over the last five years*

It was deemed important to explore whether participants from institutions whose income from online programmes increased over the last five years differed significantly from those whose income did not increase. The results of the analysis using the student's t-test are provided below.

*Table 4-12: Perceptions on the importance of variables, based on whether income from online programmes at the respondents' institution has increased over the last five years (Yes) or not (No)*

		N	Mean	Std. Deviation	T	Sig. (2-tailed)
Revenue from tuition fee	Yes	15	8.93	2.374	0.442	0.674
	No	3	9.33	1.155		
Other income (such as subsidy and grants)	Yes	15	5.53	3.523	4.267	0.001*
	No	3	9.67	0.577		
Yearly increase in tuition fee	Yes	15	6.27	3.432	0.218	0.844
	No	3	5.67	4.509		
Time spent by permanent support staff	Yes	15	8.07	2.314	0.582	0.609
	No	3	7.00	3.000		
Percentage of annual salary increases	Yes	15	6.93	2.344	0.215	0.848
	No	3	6.33	4.726		
Cost of permanent academic staff for facilitation and marking of programmes	Yes	15	7.60	2.473	1.156	0.288
	No	3	8.67	1.155		
Cost of ad hoc online facilitators	Yes	15	7.53	3.067	1.095	0.302
	No	3	8.67	1.155		
Cost of permanent academic staff moderating scripts	Yes	15	6.93	3.127	1.655	0.131
	No	3	8.67	1.155		
Cost of ad hoc staff moderating scripts	Yes	15	6.33	3.478	0.000	1.000
	No	3	6.33	4.726		
Percentage of scripts to be moderated	Yes	15	6.40	3.312	0.023	0.983
	No	3	6.33	4.726		
Cost of writing the modules for online programme	Yes	15	7.13	3.543	0.944	0.375
	No	3	8.33	1.528		
Digital material development cost	Yes	15	6.93	3.240	1.101	0.336
	No	3	8.67	2.309		
Cost of equipment used for development of online material (studio recording equipment, etc.)	Yes	15	7.67	2.769	0.157	0.896
	No	2	8.00	2.828		
	Yes	15	7.33	2.895	0.108	0.923

Pro-rata operational cost (licensing fees, general office expenses, etc.)	No	3	7.00	5.196		
Recoupment of LMS license cost	Yes	14	6.71	3.074	0.092	0.934
	No	3	7.00	5.196		
Pro-rata cost recovery calculation for initial investment	Yes	15	6.40	3.942	2.222	0.043*
	No	3	9.00	1.000		
Size of classroom (no of students)	Yes	15	7.00	3.381	1.046	0.355
	No	3	8.67	2.309		
Recoupment of marketing cost paid to external suppliers	Yes	13	7.00	3.000	2.188	0.055
	No	3	9.33	1.155		
In-house marketing costs	Yes	15	6.47	3.563	2.523	0.028*
	No	3	9.33	1.155		
Percentage cost of inflation	Yes	15	6.87	3.044	0.043	0.969
	No	3	7.00	5.196		
Dropout percentage per year	Yes	15	6.93	3.283	0.021	0.985
	No	3	7.00	5.196		
Throughput percentage per year	Yes	15	7.47	3.021	0.151	0.893
	No	3	7.00	5.196		

\* Statistically significant difference on a 95% probability level

# Highest mean score

From the table above, the following can be noted. Respondents from the institutions whose income from online programmes that have not increased over the last five years, deem *other income (such as subsidy and grants, pro-rata cost recovery calculation for initial investment and In-house marketing costs)* statistically significantly more important in a financial model than those from institutions who did.

It must be emphasised that the findings cannot be generalised beyond this sample.

### 4.5.3 Inclusion-importance mapping

Based on the inclusion of variables by institutions, and the perceptions of respondents on the importance of the variable, an inclusion-importance map was created, based on the same principles of importance performance mapping. The y-axis indicates the number of respondents who indicated that the variable is included in their financial model, while the x-axis shows the mean score of the importance placed on the variable

by the respondents. The median is used as a reference line for each of the axes. The results are displayed below.

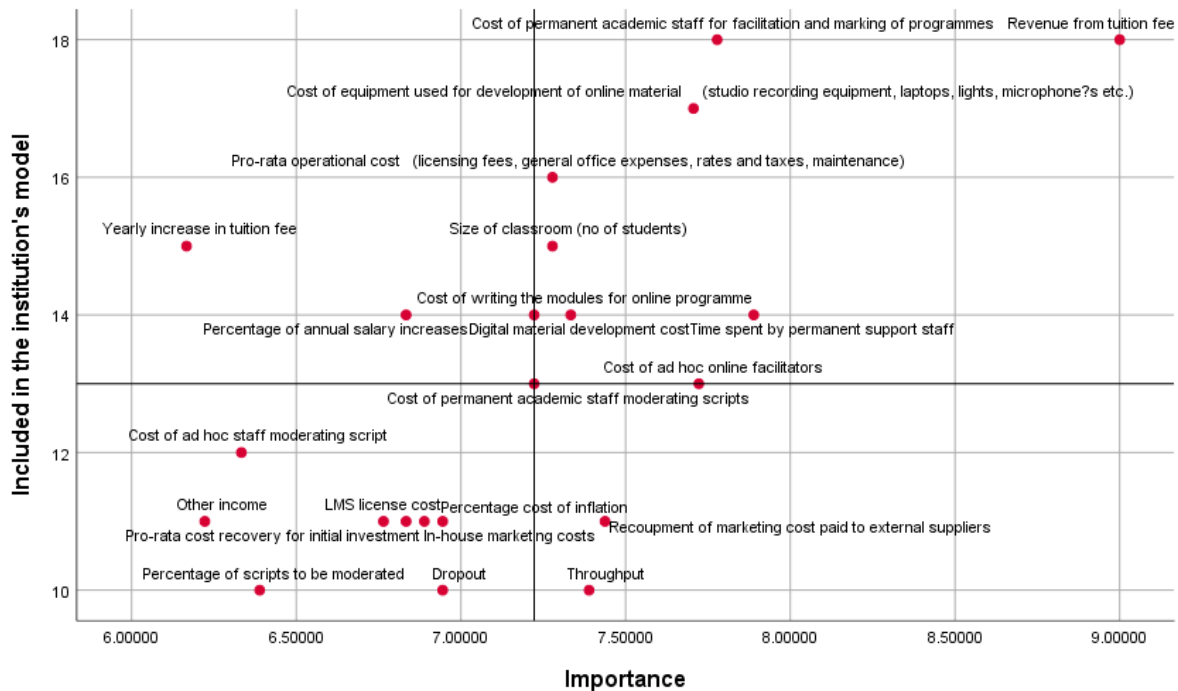


Figure 4-6: Inclusion-importance mapping

The top right-hand quadrant displays the variables that are deemed the most important and are most often included. These include revenue from tuition fees, cost of permanent academic staff and the cost of equipment.

The bottom left-hand quadrant displays variables that are deemed the least important and are included less often. These include the percentage of scripts to be moderated and the other income, which includes subsidy.

However, it must be pointed out that both the x and y-axis start above the point of neutrality, which would be nine on the y-axis, and 5.5 on the x-axis. This suggests that even the bottom-left quadrant is important, albeit not the most important.

## 4.6 COMPARISON BETWEEN THE MODELS USED BY OTHER INSTITUTIONS COMPARED TO THE UFS

Essentially, this chapter is aimed at enabling the researcher to compare the financial models used by other institutions with the model used by his institution. Based on the quantitative data collected from colleagues at other institutions (mainly abroad) via an online survey and the virtual face-to-face interviews conducted with colleagues at the UFS, the following emerged.

Both sets of data confirmed the importance of the inclusion of tuition income, as all participants indicated that this information should be included in any financial model (*cf.* 4.4.2.1; 4.5.2.2). The expense associated with any type of salary was highlighted as an important variable (*cf.* 4.4.1.7; 4.5.2.2).

The interview participants, as well as respondents in the survey, agreed with the inclusion of unique hidden costs that can include moderation, LMS licence cost, marketing costs etc. (*cf.* 4.4.1.7a; 4.5.2.2). The interview participants emphasised that the more you include such obscure variables, the more accurately your financial model will describe the future.

From the interviews, participants confirmed this by explaining that not just anyone should complete the financial model as the responsible person should have sufficient knowledge of the programmes (*cf.* 4.4.3). Both sets of data collected confirmed the importance and relevance of including the variable classroom size (no. of students). (*cf.* 4.4.1.7b; 4.5.2.2).

Although some (67%) of the participants in the interviews believed the financial model to be fairly accurate, one participant (33%) said that if all variables are not included, its accuracy could fall to 50%. Similarly, 33% of the survey respondents believed that the success rate is 50% and below, whereas 67% believed the success rate to be more than 50% (*cf.* 4.4.2; 4.5.1).

The first noteworthy difference picked up from the data analysis is the diverse views concerning subsidy. The UFS puts a lot of emphasis on the subsidy generated, while the respondents in the survey only rated it fourth from the bottom when ranked. The

participants in the interviews explained the reliance on subsidy and the efforts made to get the maximum subsidy. In contrast, the quantitative data analyses revealed that just over 60% confirmed its inclusion with an important mean of 6.22, which is the second-lowest ranking of any variable included in the study (*cf.* 4.4.1.6a; 4.5.2.2).

The importance of trends and understanding historical data as a guiding tool for the completion of any financial model was emphasised in the interviews.

## **4.7 CONCLUSION**

In this chapter, the researcher studied the results from the qualitative as well as quantitative study through two sections. Firstly, the researcher reviewed the results of the study by focussing on the model used by the UFS and then secondly on the financial model used by external institutions.

## CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS

### 5.1 INTRODUCTION

The purpose of this study was to gather information to evaluate the SCBG towards the improvement of its ability to inform the decision-making about the South Campus' fully online structured programmes accurately. Three sets of information were gathered.

Firstly, a literature study was conducted to review the knowledge available on the financial model variables for a successful business generator in the online learning environment. This was reported on in Chapter 2. Then two sets of data were collected. Qualitative data were collected from relevant employees to describe the current financial model and specifically the SCBG. This was reported on in Chapter 4 section 4.4. Following this, a set of quantitative data was collected to analyse the priorities of other universities in terms of financial modelling variables. This was reported on in chapter 4 section 4.5.

In this chapter, the above sets of information, from literature and from the data that was collected will be integrated to enable the researcher to respond to the main research question posed namely: **How can the ability of the current SCBG to accurately contribute to sustainable online structured programmes at the UFS, be improved?**

### 5.2 BACKGROUND TO BUSINESS MODELS

In the current economic climate, how higher education institutions are managed has changed (*cf.* 1.1) especially with numerous opportunities arising from a change in delivery across many continents (*cf.* 2.2). Many institutions are now at a crossroads, and the decision to engage (*cf.* 2.1) will depend on the cost-effectiveness of their business models (*cf.* 2.2) by determining whether the return on investment is worthwhile (*cf.* 2.3).

The University of the Free State also uses a financial model referred to as the business generator (*cf.* 1.1), which was developed by a group of people from other educational institutions including HEMIS officers (*cf.* 4.4.4.1) based on the financial model variables (*cf.* 1.1). Although the exact date is unknown, the UFS has used it between

5–10 years (*cf.* 4.4.4.1). The purpose of the business generator echoes the critical functions of any financial model to ensure that your output is worth the effort (*cf.* 1.1), whereas the logic of the business generator lies in its contribution towards a sustainable financial environment (*cf.* 1.1).

Although the business generator in itself cannot save any costs or generate income, it does provide a platform for accurate forecasting of future scenarios (*cf.* 2.3) as it is built on a set of variables where assumptions are made (*cf.* 1.1) and outputs calculated.

### **5.3 PURPOSE OF BUSINESS GENERATOR**

The two primary purposes of any financial model are to confirm viability first and secondly, to contribute towards financial sustainability.

All the participants of the interviews emphasised the importance of the business generator in assessing any potential qualification's viability. The viability is directly dependent on all the variables of the business generator (*cf.* 4.4.1.3). If, for example, the curriculum was omitted, the calculation of viability will be skewed (*cf.* 4.4.1.2).

Equally important is its ability to contribute to a department's financial sustainability (*cf.* 1.1). For a programme to reach financial sustainability, it must pass a point where its total cost is equal to its total income, referred to as the break-even point (*cf.* 4.4.1.3). Thirty-nine per cent of respondents to this research reported that financial models are used to measure break-even (*cf.* 4.5.1). The time it takes for a qualification to break even, directly influences the cost incurred to carry the qualification until it breaks-even (*cf.* 4.4.1.4).

### **5.4 EVALUATION OF THE SCBG**

To evaluate the SCBG, the researcher decided to include all the variables that currently form part of the SCBG, from an income as well as an expense perspective. It is understood from the data gathered that financial model variables could contribute to the reduction in cost and maximising of profits (*cf.* 2.1).

### **5.4.1 Income**

The two main income variables are government funding and tuition income. Although other forms of income do exist, the researcher decided to focus on these two variables.

#### **5.4.1.1 Government funding**

Although government funding through subsidy was a trustworthy source of income to many higher education institutions worldwide, the scope is changing as pressure on governments are increasing (*cf.* 2.4.1). The level of subsidy is calculated utilising a complicated calculation (*cf.* 2.4.1.1) and referred to as reaching input or output, directly influencing the income of a qualification, affecting its ability to reach break-even (*cf.* 4.4.2.1a). Participants felt that the subsidy allocation forms the basis of the income received and that the calculation is easily influenced by the number of students and the level of the course (*cf.* 4.4.2.1). The importance of the subsidy payments was further emphasised by the fact that more than half of the respondents confirmed that their institutions receive some kind of subsidy (*cf.* 4.5.1). Government funding was included as “other income” in the bottom left quadrant of the importance-mapping tool. This indicates that although it was not rated as the most important variable, it is still included as moderately important (*cf.* 4.5.3).

Considering the above insights in the context of the main research question, the SCBG also includes teaching input as well as teaching output as part of the variables and is thus in line with international trends in a financial model.

#### **5.4.1.2 Tuition fees**

The higher demand for online qualifications has the potential to increase revenue, although it is still felt that more than one income stream is needed to ensure sustainability (*cf.* 2.4.1). The participants agreed that tuition is the second most significant form of income for the financial model and is based on the credits as per the curriculum (*cf.* 4.4.2.1b). From the survey, all of the respondents indicated that the revenue raised from tuition fees is part of their financial model variables (*cf.* 4.5.2.1). Tuition fee is in the top right-hand corner of the importance-mapping tool, indicating its high level of importance along with its high level of use.

In the SCBG tuition income forms part of the income variables and is in line with international trends.

## **5.4.2 Costs**

From the quantitative and qualitative data, it is evident that fixed and variable costs are to be accommodated in financial modelling (*cf.* 2.5). Both these types of costs are discussed below.

### **5.4.2.1 Staff cost**

According to literature, staff cost is considered as one of the most significant cost drivers and directly affects the financial model. To improve efficiency, one should ensure that staff are appropriately skilled and that the time spent is monitored closely (*cf.* 2.5.1). The participants also mentioned salary cost as the highest direct cost (*cf.* 4.4.2.2), and all the respondents confirmed its inclusion in their respective models. On the importance-mapping, it is in the top right quadrant, which confirms its importance as well as inclusion in other institutions' models (*cf.* 4.5.3).

The SCBG split staff cost into permanent and temporary appointments with a schedule for each calculation. Compared to international trends, the SCBG is in line.

### **5.4.2.2 Study material**

Although many believe that online qualifications are more affordable to offer, the literature confirms that this is not the case (*cf.* 2.3). Provision should be made for both processes of development as much more is spent on the development of online material compared to a face-to-face mode of delivery. The use of videos to assist students and promote inclusivity is encouraged (*cf.* 2.5.2.1). On the importance-mapping, the study material is located in the top right corner, indicating its regular use as well as a high level of importance.

The SCBG incorporates the cost of developing study material and therefore is in line with international trends.

### **5.4.2.3 Digital material development cost**

From the literature, it is evident that considerable investment is needed in fixed costs to provide staff with the equipment needed to develop high-quality online material that contributes to the success of the students (*cf.* 2.5.2.2). On the importance-mapping, it is found on the mean, indicating relative high usage, but the cost was not viewed as extremely important (*cf.* 4.5.3).

The SCBG is in line with international trends as digital material development also forms part of its variables.

### **5.4.2.4 Cost of equipment used for online material**

Although the researcher could not find a model in the literature that confirmed the inclusion of the amortised equipment cost (*cf.* 2.3.1), it was indicated as one of the top three variables on the importance-mapping (*cf.* 4.5.3).

International trends indicate the amortisation of equipment cost, and therefore the SCBG, is in line by recovering the cost over some years.

### **5.4.2.5 Throughput**

From the literature, it is evident that although there is little consistency regarding the use of throughput, it is an integral part of the calculation of subsidy and the reputation of an institution (*cf.* 2.7). From the responses received, the inconsistency was confirmed with a variety of views on throughput. Some believed that throughput should be adjusted per qualification (*cf.* 4.5.2.1b).

On the importance-mapping tool, throughput is found in the bottom right quadrant, indicating that it is not included often but ranked higher than average when it comes to importance.

The SCBG is in line with international financial models as it also includes the calculation concerning throughput.

#### **5.4.2.6 Dropout**

From the literature, it is evident that there are many different views on the dropout rate. Special effort should be made to decrease the dropout rate by retaining students, as a high dropout rate increases investment costs and decreases income through less subsidy as well as tuition income (*cf.* 2.6). According to the respondents, the dropout rate is not used that often (*cf.* 4.5.2.1a). The dropout rate is plotted in the bottom left quadrant of the importance map as it is not used that often and is also not considered very important (*cf.* 4.5.3).

International financial models include this variable, and the SCBG is in line with these models by also including this variable in the calculation.

#### **5.4.2.7 Curriculum**

According to the literature, the development of online curriculum requires human capital to develop, especially also taking into consideration the impact of de-colonising the curriculum (*cf.* 2.8). Cognisance should be taken of the impact of curriculum on the income via tuition (*cf.* 4.4.2.1b) as well as the overall viability of the qualification (*cf.* 4.4.1). The curriculum is in the top right quadrant of the importance map, highlighting its importance as well as the frequency of usage among respondents (*cf.* 4.5.3).

In line with international models, the curriculum forms a major part of the SCBG's calculation.

#### **5.4.2.8 Hidden costs**

Some hidden costs can easily be missed such as staff skills (*cf.* 2.5.1) or the license cost of the LMS (*cf.* 2.5.3). It is challenging to determine some hidden costs and staff working in a particular section are in the best position to identify and calculate these costs (*cf.* 4.4.2.2a). Although the hidden cost is mostly found at the bottom left quadrant of the importance-mapping tool, indicating below average importance and usage, it might impact significantly on any financial model.

The SCBG is in line with international financial models as no additional hidden cost was highlighted from the data analysis.

### **5.4.3 Other important insights**

A major insight was the importance of accurately forecasting student volumes (*cf.* 4.4.2.2b) by including a marketing analysis. This will assist in estimating the student numbers more accurately, which will directly impact on the outcome of the calculation (*cf.* 4.4.5a).

From the UFS participants, it was also clear that the current model is not as user friendly and it should be redeveloped (*cf.* 4.4.5a). If this is not done, it could lead to staff not using the model as it is too complicated.

Only staff that have sufficient knowledge (*cf.* 4.6) and are informed should complete the model to ensure accuracy of data inserted as it directly impacts on the output (*cf.* 4.4.4).

Also, the model does not speak to the institution at large and therefore shared modules might lead to duplicate income (*cf.* 4.4.4). A shared module is a module that is included in more than one qualification.

Interestingly, two-thirds of all the participants, qualitative or quantitative, indicated that their model is more than 50% accurate (*cf.* 4.6).

## **5.5 PRACTICAL IMPLICATIONS FOR THE USE OF THE SGBG**

The SCBG compared well with other universities as neither the literature, nor the respondents revealed any variable that was not already included in the model. The feedback on the success revealed that most of the interview participants as well as survey respondents were satisfied with the variables included and how they impact on accuracy (*cf.* 4.4.3; 4.5.1).

One of the challenges faced is the slow implementation of government policies, limited growth and the increased pressure on public institutions to deliver and be relevant in this day and age. (*cf.* 2.2). Another challenge is the lack of support received from faculties at higher education institutions, due to their view on the quality of online programmes as well as the additional workload (*cf.* 2.8; 2.9). Furthermore, many students as well as employers, view online qualifications as lower quality (*cf.* 2.9).

Online qualifications are not cheaper than its face-to-face counterparts as the material development consists of two phases which increase the cost (*cf.* 2.3).

In practice, higher education institutions should be run as businesses (*cf.* 4.4.6) to make sure that the qualifications they deliver are viable and that the institution at large, through these programmes, are financially sustainable. Marketing programmes are of utmost importance. Care should be taken when SCBG is completed to ensure the correctness of information inserted. Proper planning should be done to ensure that all hidden costs (*cf.* 4.4.5) are calculated on a separate sheet and that it pulls through accurately. Staff completing the model should be held accountable for their student numbers and their progress on achieving their set targets should be regularly monitored.

## **5.6 REFLECTION ON THE STUDY**

### ***5.6.1 Personal experiences***

The end of the study provided a chance to reflect on the study, its strengths and its weaknesses. The biggest opportunity identified was the fact that the researcher was appointed as Head of South Campus Finance at the time of the study and had to take responsibility for the implementation of the financial model used by the UFS. This assisted the researcher in understanding the background of the SCBG and provided the researcher with the knowledge to look for potential problems. Clearly, this study also adds value to the work that he does.

In the beginning, the researcher struggled to find the correct angle to approach the study. The researcher knew what was needed but did not understand how to put it into words and research action. Fortunately, my supervisor supported me throughout the process finding the correct angle and determining a step-by-step action plan. The researcher's biggest frustration was the time it took the ethics committee to approve the study. The two and a half months was frustrating and it made it impossible to adhere to the timelines set by the UFS Business School. After the researcher finally got conditional approval and started the research, it was a struggle finding respondents. It was also a struggle to get institutions to assist with the completion of

the gatekeeper's letter. Many institutions wanted the names of the people the researcher wanted to include in the study. As the researcher is working as a support staff member and not an academic, there is no network list to assist. Furthermore, when the researcher did manage to make contact, some of the respondents indicated that the completion of a gatekeeper's letter is not applicable as they can decide if they want to take part or not.

In terms of any research project, the researcher would like to encourage students to plan appropriately and provide enough time for ethical approval. Do not underestimate the importance of this step as it has a massive impact on the whole study.

### **5.6.2 Assumptions**

The researcher decided on a pragmatism paradigm as it is commonly used to affiliate studies where multiple data collection methods are used. It contributed well to the mixed methods approach that was decided upon.

The mixed methods approach followed in the study worked well, as it allowed complementary sets of data that could be used fruitfully.

### **5.6.3 Limitations of the study**

Limitations of the study must be noted. This was from the onset intended to be a small-scale study. Only three participants were interviewed as planned, but the intention was to get a reasonable response rate to the digital survey. Nonetheless, even though 200 colleagues from other institutions across the globe were contacted and requested to respond, only 18 responses were received. There was no way to know who responded and that made follow-up difficult. In hindsight, follow-up reminders to the pool of possible respondents might have yielded a higher response rate. In hindsight, the country or region from which the respondents came, would have been a useful variable for comparison and any person who builds on the study should consider doing so.

### **5.6.4 Areas for further research**

To my knowledge, this study was the first study that was done at the UFS in terms of the SCBG. The information collected was extremely valuable, but on a very small scale. It is thus strongly recommended that the study be replicated on a bigger sample towards generalisation. Furthermore, in-depth interviews with colleagues from other institutions to understand the context in which their financial models are used, and the value of the said model, would assist in developing a substantial body of knowledge on this essential aspect of running programmes that are sustainable.

## **5.7 CONCLUSION**

Through the study, valuable insights were gained that could positively influence the accuracy of the SCBG. The model used by the institution compares well with other models. Institutions need to do a proper market analysis to ensure higher accuracy with the estimation of student numbers. It is also crucial that the person capturing the data in the financial model should be experienced and well-informed. The current South Campus Business Generator financial model used by the University of the Free State is indeed useful in providing information regarding future online structured qualifications, especially in the absence of any replacement model. Future developments should include making it more user friendly and establishing an accountability culture where section heads will take responsibility for the information submitted.

Nelson Mandela said: “Education is the most powerful weapon which you can use to change the world”. Ensuring that educational institutions are financially sustainable is key to securing future education for generations to come. Public institutions should be challenged to think outside the box and ensure they remain relevant and viable in the future by making well-informed decisions based on strategic thinking. They need to act with responsibility and accountability with regard to the public funds that they work with, be it tax-payers money or students’ money. This implies using sound financial models to evaluate the viability of programmes that they spend money on to develop.

---

## REFERENCE LIST

Alexander, M., Lynch, J., Rabinovich, J. & Knutel, P., 2014. Snapshot of a hybrid learning environment. *The Quarterly Review of Distance Education*, 15(1), p. 9–21..

Allen, I. & Seaman, J., 2010. *Class Differences: Online Education in the United States*. 1 ed. s.l.: Babson Survey Research Group.

Allen, M., 2017. *The sage encyclopedia of communication research methods, vol. 4*, s.l.: SAGE Publications, Inc, Thousand Oaks, CA, [Accessed 30 March 2020], doi: 10.4135/9781483381411.

Alshenqeeti, H., 2014. Interviewing as a Data Collection Method: A Critical Review. *English Linguistics Research*, 3(1), pp. 39-45.

Anders, K., 2017. Resolution of Students t-tests, ANOVA and analysis of variance components. *Biochemia Medica 2017*, 27(2), pp. 253- 258.

Beth, R., 2013. University Business Models and Online Practises: A Third Way. *Online Journal of Distance Learning Administration*, 16(1), pp. 1-25.

Bider, I., Perjons, E. & Mturi, E., 2016. A fractal enterprise model and its application for business. *Software & Systems Modeling*, 16(1), pp. 663-689.

Boyang, M., Omar, E. & Baharum, N., 2018. A Review on Sample Size Determination for Cronbach's Alpha Test: A Simple Guide for Researchers. *Malays Journal of Medical Sciences*, 25(6), pp. 85-99.

Bozkurt, A. & Akbulu, Y., 2019. Dropout Patterns and Cultural Context in Online Networked Learning Spaces. *Open Praxis*, 11(1), p. 41–54.

Bramble, W. & Panda, S., 2008. *Economics of distance and online learning : theory, practice, and research*. New York: Routledge.

Broadbent, J. & Tyszkiewicz, M., 2018. Profiles in self-regulated learning and their correlates. *Educational Technology Research & Developmen*, 66(1), p. 1435–1455.

- Brubacher, M. & Silinda, F., 2019. Enjoyment and Not Competence Predicts Academic. *International Review of Research in Open and Distributed Learning*, 20(3), pp. 166-179.
- Byrda, J. & Mixon, P. , 2015. Revenues and e-learning: do universities need an online presence?. *Journal of Higher Education Policy and Management.*, 34(6), p. 601–609.
- Cant, M., Wiid, J. & Machado, R., 2013. The Characteristics Of A Good ODL Practitioner. *International Business & Economics Research Journal – November 2013*, 12(11), pp. 1317-1329.
- Castro, F., Kellison, J., Boyd, S. & Kopak, A., 2010. A Methodology for Conducting Integrative Mixed Methods Research and Data Analyses. *Journal of Mixed Methods Research*, 4(4), p. 342–360.
- Charles, E., 2019. Decolonizing the curriculum. *Insights*, 32(24), pp. 1-7.
- Chen, G., 2016. Exploring the relationships between learning styles, online participation, learning achievement and course satisfaction: An empirical study of a blended learning course. *heng, G., Chau, J. 2016. British Journal of Educational Technology*, 47(2)257–278, 47(2), p. 257–278.
- Chen, Y., 2014. Investigating MOOCs Through Blog Mining.. *The international review of research in open and distance learning*, , 15(2), p. 94.
- Chipere, N., 2017. A framework for developing sustainable e-learning programmes.. *Open Learning*, 32(1), pp. 36-55..
- Chittaranjan, A., 2020. Understanding the Difference Between Standard Deviation and Standard Error of the Mean, and Knowing When to Use Which.. *Indian Journal of Psychological Medicine*, 42(4), pp. 409-410.
- Christensen, S. & Spackman, S., 2017. Dropout rates, student momentum, and course walls: a new tool for distance education designers.. *Journal of Educators Online*, 14(2), p. 1.

- Coetzee, D., 2015. *South Campus Strategic Plan 2015-2020*, Bloemfontein: University of the Free State.
- Coetzer, L., 2018. *Assessing the perceived satisfaction of Advanced Certificate of Teaching course students and facilitators regarding the online library services at the University of the Free State*, Bloemfontein: University of Cape Town.
- Cook, D., 2015. The value of online learning and MRI: Finding a niche for expensive technologies.. *Medical Teacher*, 36(11), pp. 965-972..
- Creswell, J., 2014. *Research design - Qualitative, Quantitative and Mixed Methods Approach*. 4th ed. California: SAGE Publications Ltd.
- Creswell, J. et al., 2016. *First step in research*. 2nd ed. Pretoria: Van Schaik publishers.
- Crouse, T. & Lowe, P., 2018. *Snowball Sampling*, Thousand Oaks: SAGE Publications, Inc. .
- Deming, D., Goldin, C. & Katz, L., 2015. Can Online Learning Bend the Higher Education Cost Curve?. *American Economic Review: Papers & Proceedings*, 105(5): 496–501., 105(5), p. 496–501..
- Denscombe, M., 2008. A Research Paradigm for the. *Journal of Mixed*, 2(3), pp. 270-283.
- DHET, 2014. Policy for the Provision of Distance Education in South African Universities. *Government Gazette*, 37811(1).
- Dinmore, S., 2019. Beyond lecture capture: Creating digital video content for online learning – a case study. . *Journal of University Teaching & Learning Practice*, 16(7), 16(7), p. 1.
- Diver, P. & Martinez, I., 2015. MOOCs as a massive research laboratory: opportunities and challenges.. *Distance Education*, 36(1), p. 5–25.

- Du Plessis, M., 2019. Coping with occupational stress in an open distance learning university in South Africa.. *Journal of Psychology in Africa*, 29(6), p. 570–575.
- Durak, G. & Ataizi, M., 2016. Learner Views about a Distance Education Course.. *Contemporary educational technology*, 7(1), pp. 85-105.
- Eisenhauer, J., 2013. Student migration to online education: an Economic model. *Journal of Academic Administration in Higher Education*, 9(1), pp. 19-28.
- Eyisi, D., 2016. The Usefulness of Qualitative and Quantitative Approaches and Methods in Researching Problem-Solving Ability in Science Education Curriculum. *Journal of Education and Practice*, 7(15), pp. 91-100.
- Feeley, N. et al., 2009. The Importance of Piloting. *CJNR*, 41(2), p. 84–99.
- Fresen, J., 2018. Embracing distance education in a blended learning model: challenges and prospects. *Distance Education*, , 39(2), p. 224–240.
- Goldbach, D., Cetrina, L. & Manea, N., 2018. Goldbach, D., Cetina, L. and Manea, N. 2018. *Academika – Online Learning Platform*. 7(2). *International journal of emerging technologies*,, 7(2), pp. 22-25.
- Gupta, S., 2017. Ethical Issues in Designing Internet-Based Research: Recommendations for Good Practice. *Journal of Research Practice*, 13(2), pp. 1-14.
- Hachey, A., Wladis, C. & Conway, K., 2012. Is the Second Time the Charm? Investigating Trends in Online Reenrollment, Retention and Success.. *The Journal of Educators Online*, 9(1), p. 1.
- Halupa, C., 2016. The changing roles of online deans and department heads in small private universities.. *Journal of Open, Flexible and Distance Learning*, 20(2), p. 32–44.
- Henry, G., 2013. *Practical Sampling: The SAGE Handbook of Applied Social Research Methods*. 1 ed. Thousand Oaks: SAGE Publications, Inc.

- Hes, D., 2017. How does distance learning fit into the SA education sector?. *Distance Learning*, 4(1), pp. 1-2.
- Hilton , J., Fischer, L. & Wiley, D., 2016. Maintaining Momentum Toward Graduation: OER and. *International Review of Research in Open and Distributed Learning*, 17(6), pp. 18-27.
- Hodes, R., 2016. Briefing questioning "Fees must fall". *African Affairs*, 116(462), pp. 140-150.
- Housten, L., 2018. Efficient strategies for integrating universal design for learning in the online classroom. *Journal of Educators Online*, 15(3).
- Ichim, M., Sava , C. & Farima, D., 2018. *Online Learning of Textile Engineering Using Moodle Platform*. Bucharest, The 14th International Scientific Conference.
- Johnson , B. & Onwuegbuzie, A., 2004. Mixed Methods Research: A Research Paradigm Whose Time Has Come. *Educational Researcher*, 33(7), pp. 14-26.
- Johnson, B. & Christensen, L., 2004. *Educational Research. Quantitative, Qualitative and mixed approaches*. 1 ed. Boston: Pearson Education Inc.
- Kalman, Y., 2014. A race to the bottom: MOOCs and higher education busniess. *Open Learning*, 29(1), pp. 5-14.
- Kanwar, A., Carr, A., Ortlieb , K. & Mohee, R., 2018. Opportunities and challenges for campus-based universities in Africa to translate into dual-mode delivery.. *Distance Education*, 39(2), p. 140–158.
- Kennedy, E., Laurillard, D., Horan, B. & Charlton, P., 2015. Making meaningful decisions about time, workload and pedagogy in the digital age: the Course Resource Appraisal Model. *Distance Education*, 36(2), p. 177–195.
- Kennedy, J., 2008. *Encyclopedia of survey research methods*. 0 ed. Thousand Oaks, CA: Sage Publications, Inc, [Accessed 1 April 2020], doi: 10.4135/9781412963947.

- Lampert, A. & Miller, A., 2014. Lower response rates on Alumni Surveys might not mean lower response representativeness. *Educational Research Quarterly*, 37(3), pp. 38-51.
- Lam, P. & McNaught, C., 2006. Design and evaluation of online courses containing media-enhanced learning materials. *Educational Media International*, 43(3), pp. 119-218.
- Lavrakas, P., 2008. *Encyclopedia of survey research methods*. 0 ed. Thousand Oaks,CA: Sage Publications, Inc. [Accessed 31 March 2020], doi: 10.4135/9781412963947.
- Le Grange, L., 2016. Decolonising the university curriculum. *South African Journal for Higher Education*, 30(2), pp. 1-12.
- Leedy, P. D. & Ormrod, J. E., 2015. *Practical Research. Planning and Design*. Essex: Pearson.
- Lumina Foundation, 2013. *STRATEGIC PLAN 2013-2016 [Online]*, [Accessed 22 March 2019]: Available from: <http://www.luminafoundation.org> .
- Maloney, S. et al., 2012. Breakeven, cost benefit, cost effectiveness, and willingness to pay for Web-based versus face-to-face education delivery for health professionals. *Journal of Medical Internet Research*, 14(2), pp. 222-237..
- Mays, T., 2005. Costing distance education and open learning in sub-Saharan Africa.. *Open Learning*, 20(3), pp. 211-225.
- Mendling, J., Neumann, G., Pinterits, ., & Simon, B., 2005. *Revenue Models for E-Learning at Universities..* s.l., s.n.
- Merriam, S., 2009. *Qualitative Research: A Guide to Design and Implementation*. 1st ed. San Francisco: John Wiley & Son Inc.
- Montelongo, R., 2019. Less than/more than: Issues associated with high-impact online teaching and learning. *Administrative Issues Journal*, 9(1), pp. 68-79..

- Moosa, R., 2018. . An Analysis of the Higher Education Qualifications Sub-Framework: Towards Decoloniality in South African Higher Education.. *Alternation*, 25(2), p. 44 – 77 .
- Morgan, D., 2014. *Integrating qualitative and quantitative methods: a pragmatic approach*. London: SAGE Publications, Inc. [Accessed 30 March 2020], doi: 10.4135/9781544304533.
- Morse, J., 2011. *Purposive Sampling*, Thousand Oaks: Sage Publications, Inc..
- Mouton, J., 1996. *Understanding social research*. Pretoria: Van Schaik Publishers.
- Mutebi, R., 2019. *The readiness of Lesotho high schools management teams to implement the curriculum and assessmen policy of 2009*, Bloemfontein: University of the Free State.
- Oluwatayo, I. & Babalola, M., 2020. Oluwatayo, I. and Babalola, M. 2020. Asset ownership and income as drivers of household poverty in South Africa.. *The Journal of Developing areas*, 54(3), pp. 119-130.
- Ortagus, J. & Yang, L., 2019. An Examination of the Influence of Decreases in State Appropriations on Online Enrollment at Public Universities.. *Research in Higher Education*, 59(7), pp. 847-865.
- Ou, C., Joyner, D. & Goel, A., 2019. Designing and developing video lessons for online. *Online Learning*, 23(2).
- Phirangee, K. & Malec, A., 2017. Othering in online learning: an examination of social presence, identity, and sense of community. *Distance Education*, 38(2), p. 160–172.
- Purarjomandlangrudi, A., Chen, D. & Nguyen, A., 2016. Investigating the Drivers of Student Interaction and Engagement in Online Courses: A Study of State-of-the-art.. *Informatics in Education*, 15( 2), p. 269–286.
- Radovan, M., 2019. Should I stay, or should I go? Revisiting student retention models in distance education.. *Turkish Online Journal of Distance Education*, 20(3), p. 29.

- Ragusa, A. & Crampton, A., 2017. Cheap degrees or educational pluralization. *British Journal of Educational Technology*, 48(6), pp. 1208 - 1206.
- Rambe, P. & Moeti, M., 2016. Disrupting and democratising higher education provision or entrenching academic elitism: towards a model of MOOCs adoption at African universities. *Education Technology Research Development*, Volume 65, p. 631–651.
- Regmi, P. et al., 2016. Guide to the design and application of online questionnaire surveys. *Nepal Journal of Epidemiology*, 6(4), pp. 640-644.
- Rumble, G., 2001. The costs and costing of networked learning. *Journal of Asynchronous Learning Network*, 5(2), pp. 75-96.
- Schultz, S., 2016. Socialising postgraduate students to success. *South African Journal of Higher Education*, 30(4), p. 277–291.
- Seyed, Y. & Alireza, Z., 2014. A data mining approach for segmentation-based importance-performance analysis (SOM–BPNN–IPA): new framework for developing customer retention strategies. *Service Business*, 8(1), pp. 295-312.
- Sharrock, G., 2015. Making sense of the MOOCs debate. *Journal of Higher Education Policy and Management*, 37(5): 597–609.. *Journal of Higher Education Policy and Management*, 37(5), p. 597–609..
- Shaw, J., Connelly, D. & Zecevic, A., 2010. Pragmatism in practice: Mixed methods research for. *Physiotherapy Theory and Practice*, 26(8), p. 510–518.
- Sieber, J., 1992. *Strategies for assuring confidentiality', in Planning ethically responsible research, Applied Social Research Methods*,. pp. 52-63, [Accessed 1 April 2020], doi: 10.4135/9781412985406. ed. Newbury Park, CA,: SAGE Publications, Inc.
- Strydom, H., De Vos, A., Fouché, C. & Delpont, C., 2005. *Ethical issues in the social sciences and human services professions. Research at Grass roots for the social sciences and human service professions..* Pretoria: Van Schaik.

Terry, G., Hayfield, N., Clarke, V. & Braun, V., 2017. *Thematic analysis: The SAGE handbook of qualitative research in psychology*. 0 ed. s.l.:Sage Publishing.

UKEssays, 2018. *Definitions available for quantitative research given by different authors.* [online]. s.l., Available from: <https://www.ukessays.com/essays/psychology/definitions-available-for-quantitative-research-given-by-different-authors-psychology>.

Van Gelder, M. & Bretveld, R., 2010. Web-based Questionnaires: The Future in Epidemiology?. *American Journal of Epidemiology*, 172(11), pp. 1292-1298.

Van Teijlingen, E. & Hundley, V., 2002. The importance of pilot studies. *Nursing standard: official newspaper of the Royal College of Nursing*, 16(35), pp. 6-33.

Vehovar, V., Toepoel, V. & Steinmetz, S., 2017. *Non-probability Sampling: The SAGE Handbook of Survey Methodology*. 1 ed. s.l.:SAGE Publications Ltd.

Wangenge-Ouma, G. & Cloete, N., 2004. Financing higher education in South Africa: Public funding, non-government revenue and tuition fees.. *South African Journal of Higher Education*., 22(4), p. 906–919.

Watson, P., 2008. Measuring postgraduate cohort throughput: A case. *South African Journal of Higher Education*, 22 (3 ), pp. 725-738 .

Wentling, T. & Park, J., 2002. *Cost Analysis of E-learning: A Case Study of A University Program*. Illinois, Urbana-Champaign.

Wilson, K., Martin, L. & Smilek, D., 2018. The Benefits and Costs of Speed Watching Video Lectures.. *Scholarship of Teaching and Learning in Psychology*, , 4(4), pp. 243-257..

# ADDENDA

## ADDENDUM A: ETHICAL CLEARANCE LETTER



### GENERAL/HUMAN RESEARCH ETHICS COMMITTEE (GHREC)

29-Oct-2020

Dear Mr Hermanus Saayman

#### Application Approved

Research Project Title:

**A business generator for online undergraduate programme offering at a dual-mode university**

Ethical Clearance number:

**UFS-HSD2020/0793/0408**

We are pleased to inform you that your application for ethical clearance has been approved. Your ethical clearance is valid for twelve (12) months from the date of issue. We request that any changes that may take place during the course of your study/research project be submitted to the ethics office to ensure ethical transparency. Furthermore, you are requested to submit the final report of your study/research project to the ethics office. Should you require more time to complete this research, please apply for an extension. Thank you for submitting your proposal for ethical clearance; we wish you the best of luck and success with your research.

Yours sincerely

**Dr Adri Du Plessis**

**Chairperson: General/Human Research Ethics Committee**

205 Nelson Mandela  
Drive  
Park West  
Bloemfontein 9301  
South Africa

P.O. Box 339  
Bloemfontein 9300  
Tel: +27 (0)51 401  
9337  
[duplessisA@ufs.ac.za](mailto:duplessisA@ufs.ac.za)  
[www.ufs.ac.za](http://www.ufs.ac.za)



*Adri Plessis*

## ADDENDUM B: UFS GATEKEEPERS LETTER



### UNIVERSITY OF THE FREESTATE RESEARCH ETHICS COMMITTEES

APPROVAL FROM UFS AUTHORITIES FOR PARTICIPATION OF STAFF IN RESEARCH PROJECTS			
Title, Initials, Surname:	Saayman, H	Staff/Student number	2018668893
Department/Institution:	UFS Business School		
Phone:	051 505 1447	E-mail address:	saaymanhpj@ufs.ac.za
Supervisor(s):	Mr Deon Barnard	Phone:	051 401 3143
Protocol Title:	A business generator for online undergraduate programme offering at a dual-mode university		
Who will be involved in the study? (tick ✓)	<input checked="" type="checkbox"/> UFS Personnel	<input type="checkbox"/> Students	

#### INSTRUCTIONS:

- Please attach the following to this form when requesting approval from the signatories:
  - A short summary of the study protocol with data collection instruments, and timeframes;
  - Conditional Approval letter from the relevant Ethics Committee (Applicable to internal UFS personnel and researchers).
  - Ethics Approval letter (applicable to external researchers)
- Kindly note that it is the responsibility of the researcher(s) to ensure that the relevant signatures are obtained before this signed form is attached to the RIMS application

A. FOR RESEARCH ON UFS STAFF FROM A SPECIFIC PROGRAMME AT THE UNIVERSITY THE FOLLOWING SIGNATURE MUST BE OBTAINED:		
i. HEAD OF HUMAN RESOURCES	<input type="checkbox"/> Approved	<input type="checkbox"/> Not Approved
Signature:	Date:	
Comments:		

## **ADDENDUM C: LETTER OF CONSENT TO INTERVIEW PARTICIPANTS**

July 2020 – November 2020

### **TITLE OF THE RESEARCH PROJECT**

A business generator for online undergraduate programme offering at a dual-mode university

### **PRINCIPLE RESEARCHERS' NAMES AND CONTACT NUMBER(S):**

Mr HPJ Saayman (051 505 1447)

### **UNIT WITHIN WHICH THE RESEARCH WILL BE CONDUCTED FROM:**

UFS Business School

Bloemfontein Campus

### **WHAT IS THE PURPOSE OF THE STUDY?**

The University of the Free State(UFS) South Campus has been involved in delivering online qualifications since 2016. From then to now, the UFS South Campus has changed the well-known "UFS business generator"/"financial model" to fit the method of delivery displayed at the South Campus. The UFS business generator is used to do a calculation regarding the viability of the planned qualification, taking various costs and other assumptions into consideration. The financial model then assists management in making informed decisions.

Given this background, the researcher's study focuses on the financial model variables and in two-phased plan to highlight which ones are still relevant and what is their perceived importance. The researcher will also strive to make improvements to the current financial model.

### **WHO IS DOING THE RESEARCH?**

MR HPJ Saayman – Student, MBA, UFS Business school.

### **HAS THE STUDY RECEIVED ETHICAL APPROVAL?**

This study has received approval from the Research Ethics Committee of UFS. A copy of the approval letter can be obtained from the researcher.

**Approval number:** *Insert approval number*

## **WHY ARE YOU INVITED TO TAKE PART IN THIS RESEARCH PROJECT?**

The researcher believes that the individuals identified for the qualitative part of the data collection would be in the best position to contribute to the study in terms of creating a better understanding regarding the development and functioning of the current financial model. Furthermore, the individuals would be in a position to indicate to what extent this model is used in decision making regarding future qualifications at their institution. You are part of the specially selected candidates and the researcher trust that you would be willing to take part in the study.

## **WHAT IS EXPECTED OF ME IN THIS STUDY?**

You will be requested to take part in an interview process. The interview will be scheduled at a time convenient to you. The researcher will conduct the interview, and it should take between 25-35 minutes to complete it.

## **WHAT ARE THE POTENTIAL BENEFITS OF TAKING PART IN THIS STUDY?**

We believe that the study will contribute to the ability of financial models to inform decision making regarding future online qualification.

## **HOW WILL I BE PROTECTED FROM HARM?**

We believe that this is a low-risk study. The researcher will make use of web-based tools, namely Zoom or Skype, to conduct the interview. Both have the facility to record the conversation and can easily be shared with you. Once information is transcribed, a copy will be provided to you. You can then approve or remove any parts that you do not want to be included. The purpose of the interview is to discuss your view on the use of the financial model and its effectiveness. The interviews will be conducted by the researcher and consist of six main questions, but there might be follow up items depending on the answer provided by the interviewee. In the light of the current situation around the COVID 19 pandemic, conducting interviews via the web-based tools offer a perfect solution for a potential problem. If you do consent to be interviewed, the interviews will take place at a time and place that is convenient for you. Identities of the interviewees will be kept confidential through the use of pseudonyms, and no information that can implicate you or the institution will be used.

Based on this information, we hope that you will be willing to take part, but it remains optional. Your position will in no way be compromised if you decide not to take part in this study, but we will really appreciate it if you do agree to be part.

## **CAN I WITHDRAW FROM THE STUDY?**

Your participation in this research is voluntary, and you are free to withdraw at any time. You are also free to refrain from responding to a particular question, should you feel uncomfortable to answer.

### **WILL THE INFORMATION BE KEPT CONFIDENTIAL?**

Although the interviewee is known to the researcher, there is an agreement that the researcher will respect the individual's confidentiality. The study will collect data in a confidential format removing the risk of publishing personal information. Notice should be taken that confidentiality cannot be guaranteed, as it is always possible for a breach of data to occur.

### **HOW WILL THE INFORMATION BE STORED AND ULTIMATELY DESTROYED?**

The information from the interviews will be summarised in Word protected folders and stored on the UFS database. From here, the researcher could access the data by using a password-protected laptop.

### **WILL I RECEIVE ANY PAYMENT OR ANY INCENTIVES FOR PARTICIPATING IN THIS STUDY?**

In this study, you will not receive any form of payment or incentives for taking part.

### **HOW WILL I BE INFORMED OF THE FINDINGS OF THE STUDY?**

The UFS Business School will receive a copy of the final research findings. A summary of the findings will also be sent to all participants.

Please contact Herman Saayman (+27) 51 505 1442 or email her at [saaymanhpj@ufs.ac.za](mailto:saaymanhpj@ufs.ac.za) for clarity.

Yours sincerely



**CONSENT TO PARTICIPATE IN THIS STUDY**

I..... (Name of participant) do understand the contents of this document and the nature of the research project. I hereby permit/do not consent to take part in this research project. I understand that this will require me to respond to interview questions. I am aware that the findings of this study will be anonymously processed into a research report, journal publications and/or conference proceedings.

I understand that I am at liberty to withdraw my permission to participate in the study at any time should I so desire without any negative consequence

I have received a signed copy of the informed consent agreement.

YES	NO
-----	----

I am willing to share further information by taking part in interviews:

YES	NO
-----	----

Full Name of Participant: \_\_\_\_\_

Signature of Participant: \_\_\_\_\_ Date: \_\_\_\_\_

Full Name(s) of Researcher(s): \_\_\_\_\_

Signature of Researcher: \_\_\_\_\_ Date: \_\_\_\_\_

## **ADDENDUM D INTERVIEW QUESTIONS**

The following questions were initially asked, and then depending on the responses, follow-up questions were asked:

### General

- 1) What was the impetus behind the development of the Business generator at the institution?
- 2) How did you decide on the variables(assumptions) of the Business generator?
- 3) Which of the variables would you consider as the most important?
- 4) How long has your institution used the Business generator?
- 5) In your opinion, how successful was the Business generator in the past? How accurate can it inform of choices on prospective programmes at your institution with regard to financial sustainability?
- 6) Is there anything that you are perhaps considering to change with regards to the financial model variables of your Business generator?

Please provide any other ideas that you would like to share regarding the Business generator. These may be comments on questions asked or variables that frustrated you. Also feel free to add challenges that your daily experience, lessons learned, and things that you think might increase the accuracy of the Business generator.

## ADDENDUM E: LETTER TO GATEKEEPERS AT OTHER UNIVERSITIES



To whom it may concern:

The University of the Free State(UFS) South Campus has been involved in delivering online qualifications since 2016. From then to now, the UFS South Campus has changed the well-known "UFS business generator"/"financial model" to fit the method of delivery displayed at the South Campus.

The UFS business generator is used to do a calculation regarding the viability of the planned qualification, taking various costs and other assumptions into consideration. The financial model then assists management in making informed decisions.

Given this background, the researcher's study focuses on the financial model variables and in two phased plan to highlight which ones are still relevant and what is their perceived importance. The researcher will also strive to make improvements to the current financial model. With this email, he would like to know whether you would allow your staff to participate in this study? Approx time that will be taken for completion of online survey 15 minutes.

Regards,

Mr H Saayman – 2018668893  
UFS Business School  
+27 51 505 1447  
+27 63 557 5672

## **ADDENDUM F: LETTER OF CONSENT FOR SURVEY RESPONDENTS**

### **RESEARCH STUDY INFORMATION LEAFLET AND CONSENT FORM**

#### **DATE**

July 2020 – November 2020

#### **TITLE OF THE RESEARCH PROJECT**

A business generator for online undergraduate programme offering at a dual-mode university

#### **PRINCIPLE RESEARCHERS' NAMES AND CONTACT NUMBER(S):**

Mr HPJ Saayman (051 505 1447)

#### **UNIT WITHIN WHICH THE RESEARCH WILL BE CONDUCTED FROM:**

UFS Business School

Bloemfontein Campus

#### **WHAT IS THE PURPOSE OF THE STUDY?**

The University of the Free State (UFS) South Campus has been involved in delivering online qualifications since 2016. From then to now, the UFS South Campus has changed the well known "UFS business generator"/"financial model" to fit the method of delivery displayed at the South Campus. The UFS business generator is used to do a calculation regarding the viability of the planned qualification, taking various costs and other assumptions into consideration. The business generator then assists management in making informed decisions.

Given this background, the researcher's study focuses on the financial model variables and in two-phased plan to highlight which ones are still relevant and what is their perceived importance. The researcher will also strive to make improvements to the current structure.

#### **WHO IS DOING THE RESEARCH?**

MR HPJ Saayman – Student, MBA, UFS Business school.

## **HAS THE STUDY RECEIVED ETHICAL APPROVAL?**

This study has received approval from the Research Ethics Committee of UFS. A copy of the approval letter can be obtained from the researcher.

**Approval number:** *Insert approval number*

## **WHY ARE YOU INVITED TO TAKE PART IN THIS RESEARCH PROJECT?**

The researcher thinks that the two groups, identified to take part in the quantitative section of the data collection, would be in the best position to provide feedback regarding the variables of the financial models used at your institution. The researcher further believes that you would be able to contribute to identifying what variables to include and which ones are more important than the others. You are part of these allocated groups, and the researcher trust that you would be willing to take part in the study.

## **WHAT IS EXPECTED OF ME IN THIS STUDY?**

You will be required to respond anonymously to a survey questionnaire. The questionnaire will be sent to you via an online link and make provision for you to complete it in your own time. Once you have completed it, please submit it online. It should take more or less 15 minutes to complete the questionnaire.

## **WHAT ARE THE POTENTIAL BENEFITS OF TAKING PART IN THIS STUDY?**

We believe that the study will contribute to the ability of financial models to inform decision making regarding future online qualification.

## **HOW WILL I BE PROTECTED FROM HARM?**

We believe that this is a low-risk study. Also, for your peace of mind and convenience, the questionnaires will be distributed online. You will anonymously respond in your own time to the unmarked survey questionnaire and submit it online. Neither the institution nor the individual name will be recorded anywhere on the questionnaire. The researcher will identify questionnaires by the use of a unique code only known to the researcher. All the responses from the participants will be aggregated, and therefore no individual scores will be available. Based on this information, we hope that you will be willing to take part, but it remains optional. Your position will in no way be compromised if you decide not to take part in this study, but we will appreciate it if you do agree to be part.

## **CAN I WITHDRAW FROM THE STUDY?**

Your participation in this research is voluntary, and you are free to withdraw at any time. You are also free to refrain from responding to a particular question, should you feel uncomfortable to answer.

**WILL THE INFORMATION BE KEPT CONFIDENTIAL?**

Participants will not be required to write their names or the names of their institutions on the questionnaire. After completing the questionnaire, participants will confidentially submit the questionnaire online. Nobody at the institution will be able to see how they responded, as there are no unique identifiers in the system. There are also no passwords that are sent to different participants to ensure anonymity. The study will not disclose any participant or institutions name. The Evasys system used for the survey warrants total anonymity of responses and are easily accessible by generating HTML content. Data security is further enhanced by the fact that no third party is involved.

The survey responses from all the participants will be aggregated and analysed.

**HOW WILL THE INFORMATION BE STORED AND ULTIMATELY DESTROYED?**

The UFS servers host any data collected by the Evasys system. Also, the system uses controlled access to safeguard the data. The data will be transferred to a combined Excel file which is password protected.

After completion of the study, the raw data collected will be deleted from the database as well as any Excell folders used in the project.

**WILL I RECEIVE ANY PAYMENT OR ANY INCENTIVES FOR PARTICIPATING IN THIS STUDY?**

In this study, you will not receive any form of payment or incentives for taking part.

**HOW WILL I BE INFORMED OF THE FINDINGS OF THE STUDY?**

The UFS Business School will receive a copy of the final research findings. A summary of the findings will also be sent to all participants. Please contact Herman Saayman (+27) 51 505 1442 or email her at saaymanhpj@ufs.ac.za for clarity.

Yours sincerely



**CONSENT TO PARTICIPATE IN THIS STUDY**

I..... (Name of participant) do understand the contents of this document and the nature of the research project. I hereby permit/do not consent to take part in this research project. I understand that this will require me to respond to a survey questionnaire. I am aware that the findings of this study will be anonymously processed into a research report, journal publications and/or conference proceedings.

I understand that I am at liberty to withdraw my permission to participate in the study at any time should I so desire without any negative consequence

I have received a signed copy of the informed consent agreement.

YES	NO
-----	----

I am willing to share further information by taking part in interviews:

YES	NO
-----	----



Full Name of Participant: \_\_\_\_\_

Signature of Participant: \_\_\_\_\_ Date: \_\_\_\_\_

Full Name(s) of Researcher(s): \_\_\_\_\_

Signature of Researcher: \_\_\_\_\_ Date: \_\_\_\_\_

## ADDENDUM G: SURVEY

EvaSys	South Campus Business Generator Questionnaire 2020	
University of the Free State Business School	Mr H Saayman 2018688893	

Mark as shown:     Please use a ball-point pen or a thin felt tip. This form will be processed automatically.

Correction:     Please follow the examples shown on the left hand side to help optimize the reading results.

### 1. Consent

1.1 I agree to be part of this research and I understand my answers will be used anonymously.  Yes  No

1.2 I acknowledge that this is informed consent and that I had the opportunity to read the online consent information document (In order to read the it click on the Online consent information.pdf)  Yes  No

**2. The first set of questions will provide the researcher with general information about the participant and institution. Please indicate the applicable box.**

2.1 In our institution, I am employed as

\*Academic – Lecturer or Researcher

\*Support – Work in support of Academic staff

Part of the Academic team

Part of the Support services team

2.2 My role in our organisation is to be the

Accountant/officer responsible for the input of data into a financial model

Manager reviewing the financial model data for correctness and providing input

Head of the Department reviewing and using the financial model data to motivate for the approval of future programmes

Manager part of senior management approving requests for programmes to be delivered based on the information from the financial model

Other

2.3 If you answered Other, please describe below.

2. The first set of questions will provide the researcher with general information about the participant and institution. Please indicate the applicable box. [Continue]

2.4 Which one of the following describes your institution best?

\* Programmes refer to any academic qualifications (under/post graduate degree, diploma or certificate) delivered at your institution.

- Our institution offers all programmes exclusively through face-to-face contact between lecturers and students
- Our institution offers all programmes through face-to-face contact between lecturers and students, while also making use of an online learning management system (LMS) (e.g. Moodle, BlackBoard, etc)
- Our institution offers some programmes through face-to-face contact between lecturers and students and making use of an online learning management system (e.g. Moodle, BlackBoard, etc), but other programmes are offered fully online (no on-campus face-to-face contact)
- Our institution offers all our programmes fully online (no on-campus face-to-face lecturing)
- Other

2.5 If your response to 2.4 was Other please expand:

2.6 How many Faculties/Schools do your institution have?  1-4  5 – 7  8 – 10  
 >10

3. All questions in section 3-5 only apply if your institution has a financial model and will provide the researcher with information on your model. Please indicate the applicable box.

		Never	Sometimes	Mostly	Always
3.1	Our institution uses a financial model to determine the break-even number of students for qualifications.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.2	At our institution programmes are only approved for delivery after using a financial model to ensure a break-even	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.3	What is the equivalent of your institution's financial model commonly referred to?	<input type="checkbox"/> Cost model <input type="checkbox"/> Revenue model <input type="checkbox"/> Breakeven model <input type="checkbox"/> Other			
3.4	If you answered Other, please describe below.				
3.5	How long have you use your financial model?	<input type="checkbox"/> 1-3 years <input type="checkbox"/> >10 years	<input type="checkbox"/> 4 – 7 years	<input type="checkbox"/> 8 – 10 years	
3.6	In your experience of your cost model, how accurate do you view it to be?	<input type="checkbox"/> 0-30% <input type="checkbox"/> 51%-80% <input type="checkbox"/> Above 81%	<input type="checkbox"/> 31-40% <input type="checkbox"/> 61-70%	<input type="checkbox"/> 41-50% <input type="checkbox"/> 71-80%	

3. All questions in section 3-5 only apply if your institution has a financial model and will provide the researcher with information on your model. Please indicate the applicable box. [Continue]

3.7 Our institution receive subsidy from our government  Yes  No

3.8 The subsidy we receive from government is the same for online and face to face programmes  Yes  No

3.9 Income from online programmes at my institution has increased over the last five years  Yes  No

4. This section focus on the financial model variables, see list below. Please indicate whether the variable is included in your model or not.

	Included	Not included
4.1 Revenue from tuition fee	<input type="checkbox"/>	<input type="checkbox"/>
4.2 Other income (such as subsidy and grants)	<input type="checkbox"/>	<input type="checkbox"/>
4.3 Yearly increase in tuition fee	<input type="checkbox"/>	<input type="checkbox"/>
4.4 Time spent by permanent support staff	<input type="checkbox"/>	<input type="checkbox"/>
4.5 Percentage of annual salary increases	<input type="checkbox"/>	<input type="checkbox"/>
4.6 Cost of permanent academic staff for facilitation and marking of programmes	<input type="checkbox"/>	<input type="checkbox"/>
4.7 Cost of ad hoc online facilitators	<input type="checkbox"/>	<input type="checkbox"/>
4.8 Cost of permanent academic staff moderating scripts	<input type="checkbox"/>	<input type="checkbox"/>
4.9 Cost of ad hoc staff moderating script	<input type="checkbox"/>	<input type="checkbox"/>
4.10 Percentage of scripts to be moderated	<input type="checkbox"/>	<input type="checkbox"/>
4.11 Cost of writing the modules for online programme	<input type="checkbox"/>	<input type="checkbox"/>
4.12 Digital material development cost	<input type="checkbox"/>	<input type="checkbox"/>
4.13 Cost of equipment used for development of online material (studio recording equipment, laptops, lights, microphone's etc.)	<input type="checkbox"/>	<input type="checkbox"/>
4.14 Pro-rata operational cost (licensing fees, general office expenses, rates and taxes, maintenance)	<input type="checkbox"/>	<input type="checkbox"/>
4.15 Recoupment of LMS license cost	<input type="checkbox"/>	<input type="checkbox"/>
4.16 Pro-rata cost recovery calculation for initial investment	<input type="checkbox"/>	<input type="checkbox"/>
4.17 Size of classroom (no of students)	<input type="checkbox"/>	<input type="checkbox"/>
4.18 Recoupment of marketing cost paid to external suppliers	<input type="checkbox"/>	<input type="checkbox"/>
4.19 In-house marketing costs	<input type="checkbox"/>	<input type="checkbox"/>
4.20 Percentage cost of inflation	<input type="checkbox"/>	<input type="checkbox"/>
4.21 Dropout (percentage of students who discontinue their studies before completing the year)	<input type="checkbox"/>	<input type="checkbox"/>
4.22 If you include dropout percentage, what is your percentage for year 1, year 2, and year 3 of the programme? (Example: 1st year = 3%; 2nd year = 3.5% and 3rd year = 3%)		
<div style="border: 1px solid black; height: 30px; width: 100%;"></div>		
4.23 Throughput (percentage of students that progress to the next year)	<input type="checkbox"/>	<input type="checkbox"/>
4.24 If you include throughput percentage, what is your throughput percentage for minimum period + 1, minimum period + 2 and minimum period +3 ? (Example: min + 1 = 80%; min + 2 = 20% and min + 3 = 10%)		
<div style="border: 1px solid black; height: 30px; width: 100%;"></div>		

5. This section focus on the importance of the financial model variables. Please indicate on a scale from 1 - 10 how important each variable is in your model.

		1	2	3	4	5	6	7	8	9	10	
5.1	Revenue from tuition fee	Low Importance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	High Importance
5.2	Other income (such as subsidy and grants)	Low Importance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	High Importance
5.3	Yearly increase in tuition fee	Low Importance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	High Importance
5.4	Time spent by permanent support staff	Low Importance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	High Importance
5.5	Percentage of annual salary increases	Low Importance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	High Importance
5.6	Cost of permanent academic staff for facilitation and marking of programmes	Low Importance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	High Importance
5.7	Cost of ad hoc online facilitators	Low Importance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	High Importance
5.8	Cost of permanent academic staff moderating scripts	Low Importance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	High Importance
5.9	Cost of ad hoc staff moderating scripts	Low Importance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	High Importance
5.10	Percentage of scripts to be moderated	Low Importance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	High Importance
5.11	Cost of writing the modules for online programme	Low Importance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	High Importance
5.12	Digital material development cost	Low Importance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	High Importance
5.13	Cost of equipment used for development of online material (studio recording equipment, laptops, lights, microphone's etc.)	Low Importance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	High Importance
5.14	Pro-rata operational cost (licensing fees, general office expenses, rates and taxes, maintenance)	Low Importance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	High Importance
5.15	Recoupment of LMS license cost	Low Importance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	High Importance

