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Afterschool remedial education service to address low literacy and numeracy levels in the Tshwane South District

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Afterschool remedial education service to address low literacy and numeracy levels in the Tshwane South District

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A business venture proposal submitted to the Faculty of Commerce, Law and Management, University of the Witwatersrand, in partial fulfilment of the requirements for the degree of Master of Business Administration

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C2 General

DECLARATION

I, Noko Machipi, declare that this business venture proposal is my own work except as indicated in the references and acknowledgements. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration in the Graduate School of Business Administration, University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in this or any other university.

Noko Machipi 

Signed at Centurion

On the 24th day of February 2023

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I would like to thank God for always giving me the strength I never thought I had. I found I could reach deeper and push boundaries to reach my goals.

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SUPPLEMENTARY INFORMATION

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	Appendix B - Statistical analysis
	Appendix C – Business model canvas, Pro-forma statements and Managing Director profile

Executive Summary

A majority of grade four and five learners in South Africa do not have basic reading skills and perform poorly in mathematics. This is a complex challenge as the source of poor performance can be attributed to a combination of several factors which resulted in increasing enrolments in private schools and private tutoring services.

The purpose of this research was to determine through quantitative methods, the viability of a remedial centre that addresses poor levels of literacy and numeracy in the Tshwane South District. Application of prior knowledge included resource-based view and the lean start-up approach as applicable management theories; analysis of stakeholders impacting viability of the proposed business venture; exploring challenges in implementing remedial education; exploring options for remedial interventions; and assessing the impact of digital technology in remedial education.

The study revealed there is an interest in an afterschool supplementary service in Centurion. This interest is for learners requiring remedial, catch-up, maintaining grades or going beyond grade levels. This requires high quality service at affordable price, with an online option and a method with proven track record. Notwithstanding, real progress may take time with sustainable improvement in leaner academic outcomes and confidence.

Therefore, a Kumon franchise is proposed to offer this service as it best meets customer needs through proven methods and curriculum, online service and confidence building service. The break-even point is at approximately 70 learners however the business aims to acquire 110 learners in year one. The target market has eight schools within a 7km radius in a district absorbing 10% to 13% new learners migrating into Gauteng annually. This represents a high growth potential business that scalable to a private remedial school later. The start-up funding requirement is R1,36 million comprising of 37% shareholder's contribution and 63% loans from banks payable within 5 years. Therefore, this is therefore a viable business venture.

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1 Introduction and scope

1.1 Overview

The South African education system has evolved drastically over the years from Apartheid into democracy. This enabled policy reform in the sector to be more inclusive despite the inherent differences. Two main categories of schools permitted by The South African Schools Act 84 of 1996 are public and independent schools (Government Gazette, 1996). Services offered in the education sector may not be directly to the school but to parents of school children. These includes afterschool services such as transport, sports and tutoring services.

Private tutoring has become very popular all over the world (Hallsén & Karlsson, 2018). This has been termed the shadow education system as tutoring services are offered to supplement school offering however conducted after school and at a fee (Bray & Lykins, 2012, as cited in Saengboon, 2019) . This service has been used as a remedial method to assist children struggling to achieve necessary academic outcomes and are at risk of failing.

1.2 Purpose of the study

The purpose of this study is to determine viability of a physical and digitalized remedial centre focused on improving numeracy and literacy. As such, the study will explore challenges and gaps existing within the South African basic education system leading to the problem and interventions implemented or proposed to find resolution. Living in the 4th Industrial Revolution (4IR) era, the study also seeks to understand use of technology in remedial education and impact thereof.

1.3 Identification of the gap and business opportunity

The level of proficiency in reading and mathematics are a great concern, with only four out of ten children achieving minimum proficiency globally. The

implication is these children will proceed from primary school to secondary having not acquired necessary basic foundational skills for effective reading and mathematics mastery. Sub-Saharan Africa has approximately 138 million learners in primary schools not achieving minimum proficiency in reading (UNESCO, 2017b).

The 2016 Progress in International Reading Literacy Study (PIRLS) assessments revealed that majority (78%) of grade 4 learners in South Africa did not have basic reading skills required at this level compared to international peers (CDE Insight, 2020) meaning that learners "...could not read for meaning" (Howie et al., 2017, p. 11) . Recent reports indicate a worsening problem based on leaners tested in the Western Cape (Spaull, 2023). PIRLS is an international study occurring every five years to assess reading comprehension of grade four and five learners and compare internationally. The last assessment placed South Africa as the worst performers of the 50 countries which participated (Howie et al., 2017).

In mathematics, South African performance is no better. In 2014, average grade 4 Annual National Assessment (ANA) score in mathematics was 36% (DBE, 2014). Primary school mathematics is foundation for more complex concept taught in high school which need to be thoroughly understood for application at tertiary level. It is therefore important to understand the problem of poor mathematics outcomes from the root – the primary school level (Taylor, 2021).

Several factors highlighted as contributing to the problem includes growing class sizes, lack of resources, bullying, ill-discipline, teacher absenteeism, teacher qualifications and teacher pedagogic skills (Mabena et al., 2021; Taylor, 2021; Howie et al., 2017). This gives an indication of how deep the problem is and several types of interventions will be necessary.

The general shortage of public schools exacerbates the problem with overcrowding in schools, which is not conducive to effective learning (Howie et al., 2017). One of the contributing factors to shortage of schools in Gauteng is the influx of learners from other provinces and international immigrants (GDE, 2020). To exacerbate the problem, Department of Basic Education in South Africa introduced a policy allowing foundation phase learners to progress despite their competencies (DBE, 2013), which is counter intuitive.

The persisting low level of literacy, numeracy and pass rate in the country is a clear indication of a gap in the education system that need to be addressed.

1.4 Evaluation of the business opportunity and purpose of business venture

The quality of education provided by government schools has been unsatisfactory to many parents who resorted to taking their children to private schools (Chowdhury & Synthia, 2021; Härmä, 2013). Independent schools are providing a viable alternation to South African public schooling system and has proven successful in producing higher and better pass rates of school leavers. In 2022 Independent Examination Board (IEB) schools achieved 98.4% pass rate with 89.3% learners achieving a degree entry (Oberholzer, 2023), compared to public schools' pass rate of 80.1% with only 38.4% bachelor's degree entry (DBE, 2022). Besides parents taking their children to independent schools in search of better education, private tutoring is also considered to supplement daytime schooling. These services first gained popularity globally some 20 years ago (Bray & Kwok, 2003).

The purpose of the venture is to provide an afterschool remedial education service in Centurion to address the problem of poor educational outcomes as highlighted. Centurion falls under the Tshwane South District (TSD) which caters for a total of 260 573 learners and absorbing approximately 10% to 13% of new learners migrating into Gauteng yearly (GDE, 2021). A preliminary search of remedial schools in Centurion indicates there are only two remedial schools in the area. Given the high number of struggling learners in foundation phase (CDE Insight, 2020), some learners are still not catered for and left to struggle within ordinary school setups. This challenge is persistent despite numerous tutoring services available.

Most tutoring services operate based on school curriculum and dealing with learner's challenges at that level. Key focus of the proposed remedial centre will be building from the ground up, despite learner's current grade, to ensure basic mathematical concepts and reading skills are solid before advancement to next stage. One of the biggest and most successful private tutoring services in

Denmark highlighted the importance of looking beyond academics and focus on how to develop the whole child, through mentorship that gives the child desire to learn and do better (Kany, 2021). The mentorship approach will also be incorporated as a key offering to ensure sustainable positive learner outcomes.

Success of the venture will be measured by improvement of learner outcomes in mathematics and English; Moreover, establishing a sustainable business that builds confidence for continuous learning and overall success in future.

1.5 Scope of the Venture

The business venture will operate based on an already existing Kumon curriculum, through a franchise model. The Kumon method has been tried and tested for over 60 years (Kumon, 2023). Success of this method is evident through learner improvement which places performance three years ahead of current grade for 70% of learners who started in year 1 of school (Orcos et al., 2019). Utilising already existing curriculum ensures the business' cost structure remains low while building trust, attracting customers and gathering market intelligence. This phase is also critical for knowledge transfer which will assist the business through remedial education learning curve while preparing for autonomy in the long term. The service will be through a physical centre located in Centurion, Amberfield as well as online.

The value proposition for this venture is improving outcomes in numeracy and literacy through curriculum focused on solidifying the basics, starting the learner at their level of competency; Secondly, improving learner confidence through mentorship; Lastly, providing an accessible and convenient service through digitalized platform saves parents time while giving learners maximum support. This value proposition is incorporated in the Kumon Model and requires learners to have a mobile device or computer with internet.

2 Application of prior knowledge

Application of prior knowledge introduces applicable management theories and focused on defining literacy and numeracy, analysis of stakeholders that have

significant impact on viability of the proposed remedial education service, exploring challenges in implementing remedial education, exploring options for remedial interventions and assessing the impact of digital technology in remedial education. Understanding different aspects of remedial education will assist in positioning the business and improve its attractiveness to potential customers.

2.1 Applied management theories

The proposed business will operate under a franchise model. This involves building and managing relationships between two types of entrepreneurs seeking to implement growth strategy or have access to tangible and intangible resources (Combs et al., 2011). Therefore, applicable management theory is resource-based view of competitive advantage. This theory is centred around resources a firm has access to, uniqueness and sustainability of value created (Barney, 1991). Further application of this theory is in managing sustainable competitive advantage section 5.4 of this report.

In business venturing, lean start-up approach was used where a suitable business model with a minimum viable product is tested and improved based on customer feedback and lessons learned. In this case, the minimum viable product is the Kumon method assessable through a franchise model. This provides access to broader market intelligence and customer feedback which will be used to develop an operating model meeting customer needs and is agile as depicted in Figure 1 (Gruber & Tal, 2017). A business model canvas in Appendix C – Business Plan depicts initial business model which is subject to continuous measuring and would inform whether to pivot or persevere.

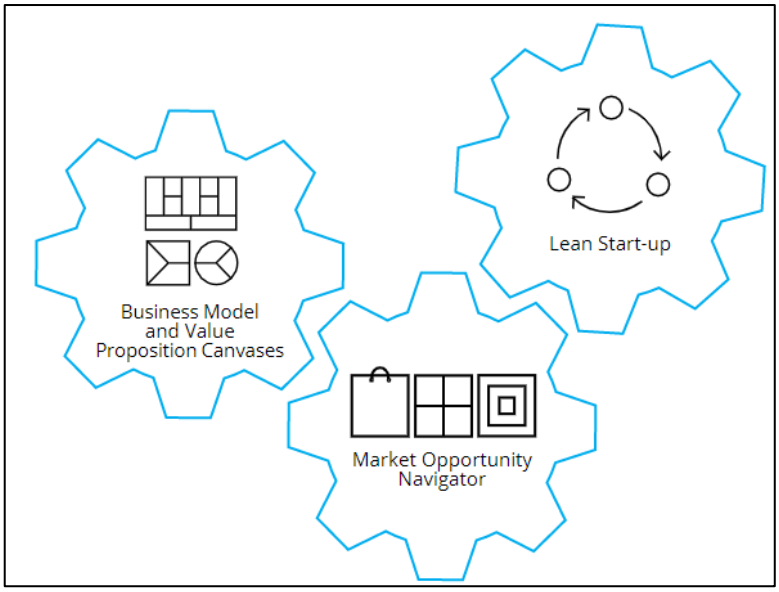


Figure 1: Tools for agile management strategies (Gruber & Tal, 2017)

2.2 Defining Literacy and numeracy

Literacy is defined as ".... the (cap)ability of putting knowledge, skills, attitudes and values effectively into action when dealing with (handwritten, printed or digital) text in the context of ever-changing demands." (UNESCO, 2017, p. 2). Therefore, literacy forms the core of any basic education system together with other core skill such as numeracy (UNESCO, 2017a). "Numeracy is defined as the capacity, confidence and disposition to use mathematics." (O'Keeffe & Paige, 2021, p. 286). Numeracy plays an important role in a modern world of constant data interpretation and advancing technology. It is a means to stay relevant and make meaningful contributions to society (Craig, 2018).

Literacy and numeracy play an important role as foundation of a child's development in foundation phase of primary school. Literacy and numeracy are critical for purposes of acquiring necessary communication skills and expanding vocabulary. This involves basic understanding of letters, that have a specific sound which form words with meaning. It also involves understanding of numbers that inform quantities and used to solve mathematical problems (Segers et al., 2014). The literature review analyses remedial education in terms of literacy and numeracy as foundation for learning.

Learner educational outcomes in South Africa are impacted by several important stakeholders namely: government, schools, teachers, parents and learners. The golden thread between these stakeholders is effective collaboration to positively influence educational outcomes (Maarman & Lamont-Mbawuli, 2017). Focus is drawn to the government policies, learners, teachers and parents as stakeholders who have a direct impact on the viability of the proposed remedial center. This is a needs and solutions analysis to assist in selecting the most effective method of intervention.

2.3 Stakeholders in remedial education

2.3.1 Government

Inclusive Education seeks to accommodate learners facing a wide range of challenges affecting their learning. In South Africa, this was introduced through the Education White Paper 6 to acknowledge and respect individual differences while responding to learners' unique learning needs. Ordinary learners, leaners with disabilities and learners with learning difficulties are accommodated through ordinary schools, special needs schools and full-service schools (DBE, 2001). Full-service school model serves learners with less intense barriers to learning, which can be managed through professional support services such as therapy and changing teaching methods. These include dyslexia and dyscalculia, which refer to difficulties in reading and performing basic numerical calculations (Landerl et al., 2009; Phala & Hugo, 2022). The proposed business venture is meant to supplement these school offerings.

The Department of Social Development (DSD) introduced Early Childhood Development Policy in 2015 to make early childhood development services available to majority of children in South Africa. This prepares children for learning to improve poor outcomes in foundation phase. Moreover, this allows early detection of learning difficulties or disability (DSD, 2015).

2.3.2 The Learner

The learner challenges stem from a wide range of factors, which can be classified as internal (learner specific challenges such as learning disabilities) and external such as socioeconomic, class size, learning resources, teachers' pedagogic skills and progression policy not allowing learners to repeat grades within foundation phase (Phala & Hugo, 2022). Learning disability can be seen through failure to achieve expected learning outcomes. However, it is not an indefinite condition as these learners can be remediated through specific teaching methods to improve outcomes. (Hammill, 1990, as cited in Karande et al., 2011).

The symptoms are evident through difficulties in reading, writing and conducting basic mathematical calculation. What make these symptoms a learning disability is when they are present on learners with normal intellectual abilities, neurological function, without any physical disabilities or disorders hindering ordinary learning. Due to lack of knowledge into the absolute cause of learning disabilities, these learners are not necessarily incapable of learning and could catch-up as they grow (WHO, 1992).

2.3.3 Teachers

Teachers are a vital component as stakeholders to the remedial centre proposed. The ability to respond to individual learner's needs facilitated by information shared between parents and the school is important (Haji Ibrahim et al., 2009). Teachers need to be able to assess learner's outcomes and respond through adjustments that meet individual needs for improved performance (Jarl et al., 2021). However, with increasing average class sizes in south Africa as per Howie et al. (2017), this significantly reduces the ability of teachers to give individualized attention where needed and would therefore result in poor quality and some learners being left behind (West & Meier, 2020). Effective and efficient communication between the teacher, parents and school management will ensure learner's best interest are keep at heart by all stakeholders to drive better performance (Chowdhury & Synthia, 2021).

2.3.4 Parental involvement

In a study conducted by Ozcinar and Ekizoglu (2013) parental involvement was identified as one of the critical factors for positive learning outcomes and ability to develop socially successful individuals. Awareness of their child's talents and difficulties is one benefit derived from parental involvement. However, it relies extensively on effective communication between parents and the school (Ozcinar and Ekizoglu, 2013).

The socioeconomic status of parents plays an important role. It was found that parents who partake in reading to their children have themselves attained a higher level of education (Huat See & Gorard, 2015). However, generally parents want to be involved but due to their own level of education, may feel teachers are more qualified to deal with the child's education or they simply do not have the knowledge to do so (Šukys et al., 2015). Quality of interaction between parents and children play an important role in the growth and development of cognitive abilities (Eisenberg, 2002).

Parents who send children to remedial education institutions come with high expectations looking for high teaching quality from qualified teachers (Sedibe & Fourie, 2018). This is an example of parents who take it a step further from being involved to being engaged which requires more commitment from parent who might act where necessary outside school premises in response to the child's educational needs (Goodall & Montgomery, 2014).

2.4 Challenges in implementing remedial education

In Malaysia, teachers' feedback on remedial education highlighted several challenges including being inadequately qualified for remedial education, ineffectiveness of remediation due to limited time and high number of learners in a class, overcrowded classes, lack of teaching aids such as ICT aids (Kasran et al., 2012). Similar challenges are experienced when implementing remedial education in South Africa. These include "…lack of parental participation, heavy workload, inadequate training for teachers, multi-grade challenges, and lack of resources." (Adewumi & Mosito, 2019, p. 1). In Pakistan, some of the challenges

highlighted during implementation of remedial education included slow progress. Contrary to earlier research, remedial education is not always a quick fix and can sometimes take long before noticing any improvements. Learners with dyslexia naturally have poor working memory and concepts need to be repeated over extended period before they are retained (Khalid & Anjum, 2019).

The delayed improvements are worse in children whose intervention was later in their school years than those who had it earlier. Inconsistencies in instruction between teachers and parents at home who are trying to assist their children can also lead to further confusion, highlighting an important element of communication and collaboration needed (Khalid & Anjum, 2019).

2.5 Remedial interventions

2.5.1 Government based intervention

A review of interventions between 2005 and 2020 to improve literacy in South African primary schools focused on learners who fell short of acquiring satisfactory foundation phase learnings and were struggling through intermediate phase. Transition from home language medium of instruction to English was identified as another reason why learners were struggling (Meiklejohn et al., 2021). Although interventions had a positive impact, it was not enough to translate into overall country improvements in literacy. This was because interventions were uncoordinated and mostly small scale. In the 15 years analysed, South African government seemed to have failed to show significant improvement in literacy (Meiklejohn et al., 2021).

Remedial interventions studied in India, Kenya and Ghana focused on providing extra teachers to classrooms thereby reducing teacher to learner ratio. Moreover, having different classes based on learning level allows adjustment of instruction intensity to match requirements of the specific group. This method proved to yield results with improvements in reading and mathematics (Duflo & Kiessel, 2014).

In the USA, implementation of inclusive education has occured through the Response to Intervention (RTI) method which promoted early identification of

learning disabilities. The method involves three tiers of intervention namely: identification, monitoring and intensified instruction. Assessments through different stages are critical to enable adjustment and meet the learner at the point of need (Fuchs & Fuchs, 2006).

Teachers engaged by Bester and Conway (2021) could associate some of the steps in RTI to what they practice within schools in South Africa. However also highlighted the method requires resources, teacher training, qualification of assistant teachers, time within an already busy daily schedule. All the above pose a challenge to effective application of RTI in South Africa. What teachers resort to then is referring learners not responsive to RTI to supplemental support interventions done outside school (Bester & Conway, 2021).

2.5.2 Private tutoring

Another remedial method is private tutoring which is defined as " ...tutoring academic subjects provided by tutors for financial gain and is additional to the provision by mainstream schooling." (Bray & Kwok, 2003, p. 612). Tutoring gained traction globally as a service offered afterschool. The main feature of private tutoring is it focuses on gaps the learner has from normal school curriculum (Bray & Kwok, 2003). Private tutoring can be provided in two ways: firstly, where the teacher is the tutor and secondly through another party not involved in the daily teaching and learning management of the specific learner. To guard against conflict of interest, unfair discrimination or exploitation of parents, certain countries do not allow teachers to offer private tutoring service to learners (Bray & Kwok, 2003).

Drivers for parents' demand for private tutoring service includes the need for child minding service with educational activities, affordability, times at which the service is available, a convenient location and quality of tutoring that achieves positive academic outcomes and builds learner confidence (Bray & Kwok, 2003). Moreover, linkages were found to socioeconomic status of families and likelihood of participation in out of school time mathematics. High socioeconomic status families have the necessary resources to seek best educational support for their

children from an early age and are more likely to use out of school time for services (Yin, 2020).

The impact of private tutoring on learner academic achievements were found to be moderate and still required further consideration into the type of tutoring to take (E. Zhang & Liu, 2022). Besides improved learning outcomes, a key private tutoring spinoff in Nepal has been improved self-confidence (Subedi, 2018).

2.5.3 Kumon

Another method identified to deal particularly with mathematics has been the Kumon method. This method originates in Japan and has since been adopted globally specifically to improve scoring in mathematics. The method promotes self-learning, development of study habit, trains concentration on a task for a given time, improves learner's self-confidence and motivation for continuous learning and growth (Orcos et al., 2019). Structured workbooks are utilised with learners advancing based on time spent on a workbook and amount of errors. Like the RTI, initial assessment is conducted to establish leaner’s current competence level which becomes the intervention starting point. This method is not meant to replace school and is offered as a supplementary programme (Orcos et al., 2019).

Learners exposed to the Kumon method showed significant improvements with over 40% of learners advancing 6 months ahead of their current school level and over 70% advancing three years ahead of their level in school if they started Kumon in their first year of school. The connecting link for this method to be fully effective is the teacher’s alertness to learners' need for intervention, support and involvement of parents (Orcos et al., 2019). This intervention method has proven impact on learner outcomes hence chosen as best model for the proposed business.

2.6 Technology and digital transformation in remedial education

Full online learning requires learner's self-discipline, parental involvement and availability of technological resources such as smart phones, laptops and the internet. Although online learning and digitization indicates agility to develop learners with relevant skills in the 4IR era, the study also highlighted this manner of learning was challenging for learners requiring special education. Higher effort is required for time management, getting organized for lessons and managing distractions present at home (Iivari et al., 2020).

However, in terms of impact, Computer-assisted instruction (CAI) applications have proven to be another useful intervention for learns at risk of failure when it comes to reading. These application assists in both reading and spelling particularly in the first year of school. This remedial intervention could be structured to address leaner specific needs for intense and focused intervention (Saine et al., 2011).

A study by Chen and Wu (2020) revealed there was more improvement in mathematics when remedial instruction was ICT integrated. This was further supported by a study in Finland revealing computer-assisted remedial reading intervention had the highest impact on leaners experiencing difficulties with pre-reading skills. Learners who received this remedial intervention in grade 1 were already performing at their peer level by the time exiting second grade (Saine et al., 2010). Another study comparing various remedial instruction revealed that e-learning model, which is the use of ICT was more effective in improving learner outcomes than hybrid and traditional models (Dai & Huang, 2015). ICT integrated interventions reinforce learning as it enables learners to use multiple senses thereby keeping them engaged and focused (Khalid & Anjum, 2019).

This further supports the use of Kumon which recently moved from physical to a hybrid offering (Kumon, n.d.-b). Although the online offering is new to Kumon, it provides an indication that the franchisee can adapt to changing environment through incorporation of technology.

2.7 Limitations

One major limitation of the study is limited amount of private tutoring or remedial afterschool services articles to draw South African perspective and experiences from. In other countries, this has also been termed the shadow education system (Bray & Lykins, 2012, as cited in Saengboon, 2019), as it tends to happen behind closed doors and has thus lacked necessary statistics to quantify it (Bray & Kwok, 2003).

2.8 Conclusion and research objectives

The literature review found that central to education is the need for better outcomes and for learners to progress in the same level as their peers. However, reality is due to several internal and external factors it is not possible to teach and learn at the same pace. This research highlighted various solutions to assist learners who fall behind to improve their outcomes. Based on the literature, high impact in learner outcomes on mathematics and English were achieved through interventions focused on learner's current level of competency and those utilizing ICT resources. Effectiveness of these solutions however relies on collaboration of teachers and parents, factors increasing the likelihood of sourcing external support and family socioeconomic status. With the Kumon method as the minimum viable product the resource-based approach, systems management theory and lean start-up provide an approach that will improve business success. Therefore, the objectives of the study are:

- To determine parents' interest in an afterschool remedial service and important factors when considering such a service
- To get views of teachers on the need for remedial education, interventions and impact of online/digitalized learning
- To determine relationships between factors contributing to the need for remedial education and the likelihood to enrol into remedial/ private tutoring services.

3 Data collection and analysis

3.1 Research design

The aim of the study was to determine viability of a physical and digitalised remedial after school service, to assist learners experiencing difficulties with mathematics and English to improve educational outcomes in Tshwane South District, South Africa. A cross-sectional research design was followed utilising a survey questionnaire. Cross-sectional surveys involve collecting data from a population sample at one specific point as opposed to collecting data over time (Creswell & Creswell, 2018; Schindler, 2019).

This quantitative approach is suitable to describe and gain understanding of potential customers, factors driving demand for after school learner support services and important factors when considering such a service. Recent studies on the demand for private tutoring also utilised quantitative approach but acknowledged its limitations that needed to be supplemented by qualitative study (Bray & Kwok, 2003). The approach followed by studies on private tutoring was used due to the close relatedness with remedial education as proposed (Liao & Huang, 2018).

3.2 Population and sampling

3.2.1 Population

The primary school from which respondents were drawn is a private school located in Centurion with a population of 356 parents and 26 head teachers. The parent population at this school is mainly middle class and better positioned to afford fees for a supplementary service. The location of the school is within the Tshwane South District – the focus area for this research. Teachers' views are also important to determine the need for remedial interventions and impact of online/digitalized learning on remediation from an education expert point of view.

3.2.2 Sampling

The sampling frame is defined as sources within the defined population, that a sample is drawn from (Schindler, 2019). A single stage, convenience sampling method allows researchers freedom to utilize any person they can find within and outside their circles. This method is particularly useful to test appetite for new ideas and level of interest for participation (Schindler, 2019). For this reason, a convenience sampling method was used. Sample size was estimated to be 195 determined using Raosoft online calculator at a 95% confidence level and 5% margin of error (Raosoft Inc., 2004).

3.3 Data collection

Data collection was through a self-administered questionnaire. This approach entails numeric information obtained on scales of instruments measuring attitudes using closed-ended questions. The three objectives of a survey design were to identify relationships between variables, to get answers to descriptive questions addressing the who, what, where, when, and how much, and lastly, to answer whether a variable would influence another while controlling for other variables (Creswell & Creswell, 2018; Schindler, 2019). Advantages of using survey questionnaire is that personal bias can be mitigated, while gaining an understanding of the order of factors. However, a major limitation is that these are closed-ended questions without any elaboration or depth (Savela, 2018).

Teachers and parents completed different questionnaires attached in Appendix A - Survey. The questionnaire for teachers focused on determining the need for remedial interventions in mathematics and English, and capability to offer remedial intervention. The questionnaire for parents focused on parent demographics, capability to assist children at home, child performance and the likelihood of enrolling in an afterschool remedial and mentorship service.

Qualtrics was used to design the questionnaire. The questionnaire link and cover letter were sent through email and posted on parents' Microsoft Teams platform. This method enabled a wider reach without geographic limitation in line with online service; allows for anonymity and enables data collection over a short

period of time (Schindler, 2019). To increase participation, a reminder was sent on Teams about a month from the initial post as per Dillman (2007, as cited in Creswell & Creswell, 2018).

3.4 Data analysis

Descriptive statistics were used to analyse who potential customers will be and what is more valuable to them when choosing to enroll in an afterschool service. Characteristics derived from this will be used to make inferences about the population.

Inferential statistics were used to analyse the data. This helped to understand the relationship between the variables. Independent variables core to the study include learner's current class size, individualized attention at school, satisfaction with school, performance in mathematics, performance in English, alertness of teachers or leaner needs and time spent helping leaners with mathematics and English. The dependent variable was the likelihood of enrolling in an afterschool remedial service. Correlations between different variables were determined through a multiple regression analysis. A similar analysis method was used by Liao and Huang (2018) in a study to investigate private tutoring and its effectiveness in China. Data analysis was conducted through IBM SPSS Statistics 27.

3.5 Reliability and validity

The research instrument limitation is that respondents are only limited to questions asked even when options are not a true reflection of themselves. This poses a validity risk to the study (Schindler, 2019).

To improve reliability of data clear categories were shown to guide participants towards intended meaning of questions. In addition, a clear explanation of scales with example was provided (Creswell & Creswell, 2018). It is noted that a larger sample can provide more accurate results, however the trade-off was the time it would take to collect data (Creswell & Creswell, 2018). Cronbach's alpha (α) was used to measure reliability to ensure consistency of the instrument in measuring

the same construct. Ideal levels of reliability are when α is over 0.7 (Creswell & Creswell, 2018).

3.6 Ethical considerations

The unintended consequence could be the stigma that tutoring centres or services are for children who are not gifted, which may discourage some of them to enrol. This will be eliminated through proper positioning statements and branding that has a positive connotation as done by Kany (2021). The researcher ensured respondent anonymity status remained and no question compromised that. The research purpose was briefly explained before the survey began, and the respondent had the option to decline to participate or stop at any time throughout the study. The Wits Business School Ethics Committee evaluated the study to ensure it met the required standards and caused no harm to anyone participating. Approval was granted and validated through a signed Ethics Clearance Certificate in Appendix A - Survey

4 Research results

4.1 Sample

A private Centurion elementary school's 122 anonymous respondents provided the data. The survey had 78 replies from parents and 12 responses from teachers after non-consenting respondents and blank responses were eliminated. The mean of the question response was used to replace missing values. Moreover, the two categories of respondents answered different questions, therefore data was separated accordingly.

Participants were parents of learners in this private school. They spend approximately R5000 per month per learner on school fees excluding aftercare and extramural activities. Based on *Figure 2* and the frequency table in Appendix B – Results , the parent respondents were majority female (78%) and the rest (16%) male. The mean age of respondents was approximately 40 with majority (89%) having attained an education level of National diploma and higher. By virtue of having higher level of education, these parents have been found to be involved in reading to their children and assisting with schoolwork (Huat See & Gorard, 2015). However, this does not always translate to better outcomes.

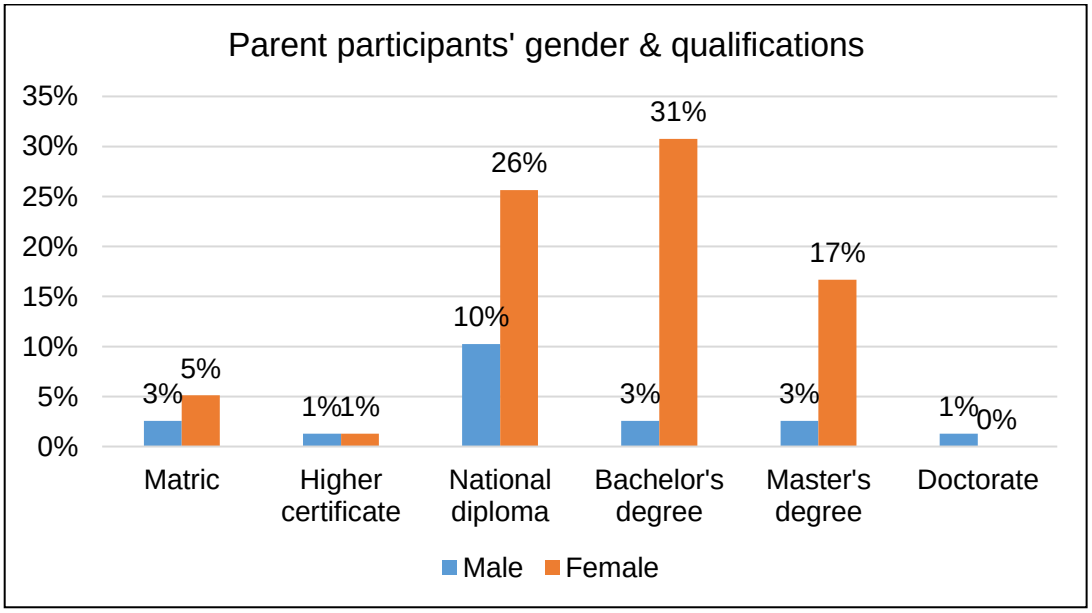


Figure 2: Parent participant demographics

4.2 Parents descriptive statistics

Looking at descriptive statistics in Table 1, learner average score for mathematics has a higher standard deviation with a broader range starting from 27% and going as high as 90%. The minimum score observed in this dataset indicates a challenge with mathematics as observed through the ANA score persists (DBE, 2014). However, as expected there are certain learners who are succeeding and scoring in the distinction levels pushing the mean score to approximately 63%. The minimum average score for English was higher than that of mathematics thus pushing the average slightly higher to approximately 68%. Consequently, the mean of parent satisfaction with learner performance in mathematics is lower than that of English.

Table 1: Descriptive statistics (all variables)

	Descriptive statistics Parents				
	N	Min	Max	Mean	SD
Age	78	28	70	40.0	6.1
Gender	78	1	2	1.8	.4
Qualification	78	1	6	3.6	1.1
Capability Maths_HW	78	1	5	3.8	1.2
Capability Eng_HW	78	2	5	4.5	.8
Time Spent	78	1	4	2.1	.9
Class Size	78	1	5	2.0	.7
SatProgMaths	78	1	5	3.4	1.2
AvgScoreMaths	78	27	90	63.5	13.9
SatProgEng	78	1	5	3.9	1.0
AvgScoreEng	78	40	95	68.4	12.7
Teachers_ highlight_need	78	1	5	3.3	1.3
Enrol	78	1	5	3.8	1.2
Enrol online	78	1	5	3.5	1.4

Note: SD = Standard deviation

The mean of activeness of teachers highlighting need, the likelihood of enrolling in an afterschool supplementary service (ASS) and enrolling online where all leaning towards the positive end of the scale. The other noticeable difference is the mean score of parents' capability to assist in Maths and English. Despite these two leaning towards the positive end of the scale, capability drops when dealing with Maths. Over 80% scored 4/5 and 5/5 in English indicating a strong capability while only 57% of the parents scored 4/5 and 5/5 in Maths indicating a gap that requires intervention.

The time spent by parents giving assistance with homework to their children daily is spread by a third between 30 minutes, 1 hour and 2 hours. This factor could be influenced by a number of other factors thus provides less value on its own. In addition, leaners current class size is already confined to a private school average class size which is a factor closely monitored and used in marketing the school, therefore provides less value on its own. This could be more useful when compared to other schools which is outside the scope of this study. Refer to Appendix B – Results for detailed table.

The survey results indicated that over 55% of respondents are likely to enrol their children into ASS. These are parents who scored 4/5 and 5/5 on the Likert scale. Moreover, about 59% of parent would prefer a service offered on an online platform as indicated in Table 2. This is an indication that the proposed business has a potential to fill an existing gap which entails assisting learners to perform at their highest potential in mathematics and English.

Table 2: The likelihood of enrolling in ASS

	Enrol	
	N	%
Unlikely	6	7.7
SW unlikely	6	7.7
Neutral	17	21.8
4	6	7.7
SW likely	14	17.9
Very likely	29	37.2
Total	78	100.0

	Enrol online	
	N	%
Unlikely	13	16.7
SW unlikely	7	9.0
Neutral	6	7.7
3	6	7.7
SW likely	25	32.1
Very likely	21	26.9
Total	78	100.0

Approximately 72% of parents are satisfied with their children's progress in English compared to about 28% who are not satisfied as per Table 3. Surprisingly, of the parents likely to enrol in ASS, 37% are satisfied and 12% dissatisfied with children's progress in English. This indicates that regardless of satisfaction levels in leaner progress there is always room to improve and exceed expectations. This implies that the proposed centre could cater for all learners and not just learners experiencing difficulties.

Table 3: Satisfaction with English progress & Enrol in ASS Crosstabulation

		Enrol (% of Total N)						
		Unlikely	SW unlikely	Neutral	4	SW likely	Very likely	Total
SatProgEng	Dissatisfied	0.0	0.0	0.0	0.0	0.0	2.8	2.8
	SW dissatisfied	0.0	0.0	2.8	0.0	2.8	7.0	12.7
	Neutral	0.0	0.0	1.4	0.0	2.8	8.5	12.7
	SW satisfied	1.4	4.2	9.9	1.4	7.0	15.5	39.4
	Satisfied	7.0	4.2	7.0	0.0	5.6	8.5	32.4
Total		8.5	8.5	21.1	1.4	18.3	42.3	100.0

Only about 54% of parents are satisfied with their children's progress in mathematics, leaving about 28% in the dissatisfied categories with the balance being neutral as per Table 4. Of the parents likely to enrol in ASS 25% are satisfied and 29% dissatisfied with children's progress in mathematics, the balance being neutral parents. The level of dissatisfaction doubled that of English indicating that the kind of intervention required involves remediation for improvement to meet satisfactory levels. Moreover, appreciating that even parents who are satisfied would still be interested in such a service.

Table 4: Satisfaction with Maths progress & Enrol in ASS Crosstabulation

		Enrol (% of Total N)						
		Unlikely	SW unlikely	Neutral	4	SW likely	Very likely	Total
SatProgMaths1	Dissatisfied	0.0	0.0	0.0	0.0	0.0	8.5	8.5
	SW dissatisfied	0.0	1.4	1.4	0.0	4.2	14.1	21.1
	Neutral	0.0	0.0	4.2	1.4	2.8	5.6	14.1
	SW satisfied	5.6	2.8	11.3	0.0	9.9	9.9	39.4
	Satisfied	2.8	4.2	4.2	0.0	1.4	4.2	16.9
Total		8.5	8.5	21.1	1.4	18.3	42.3	100.0

As per Table 5, approximately 39% and 35% of parents who are likely to enrol in ASS indicated that they have capability to assist their children with English and Maths respectively. Despite their capability these parents see value in outsourcing this function for other reasons outside the scope of this study.

Table 5: Cross tabulation with likelihood to Enrol in ASS

		Enrol in ASS (% of Total N)						
		Unlikely	SW unlikely	Neutral	4	SW likely	Very likely	Total
Capability_Eng_HW1	SW not capable	0.0	0.0	1.4	0.0	0.0	1.4	2.8
	Neutral	1.4	1.4	1.4	0.0	1.4	5.6	11.3
	SW capable	0.0	1.4	4.2	1.4	4.2	11.3	22.5
	4	0.0	1.4	0.0	0.0	0.0	1.4	2.8
	Capable	7.0	4.2	14.1	0.0	12.7	22.5	60.6
Total		8.5	8.5	21.1	1.4	18.3	42.3	100.0
Capability_Maths_HW1	Not capable	0.0	0.0	1.4	0.0	0.0	2.8	4.2
	SW not capable	0.0	0.0	0.0	1.4	0.0	5.6	7.0
	Neutral	1.4	2.8	7.0	0.0	4.2	12.7	28.2
	4	0.0	0.0	0.0	0.0	0.0	1.4	1.4
	SW capable	4.2	2.8	2.8	0.0	4.2	11.3	25.4
	Capable	2.8	2.8	9.9	0.0	9.9	8.5	33.8
Total		8.5	8.5	21.1	1.4	18.3	42.3	100.0

4.3 Factors to consider when deciding on ASS

To understand the most important factors for parents when considering enrolling children into ASS, parents were requested to rank in order of importance a score out of 100 for the five factors as per Figure 3. The mean score for each category resulted in quality and affordability being the most important factors similar to what parents consider when moving children to private schools and or seeking further intervention outside school (Bray & Kwok, 2003; Chowdhury & Synthia, 2021; Härmä, 2013).

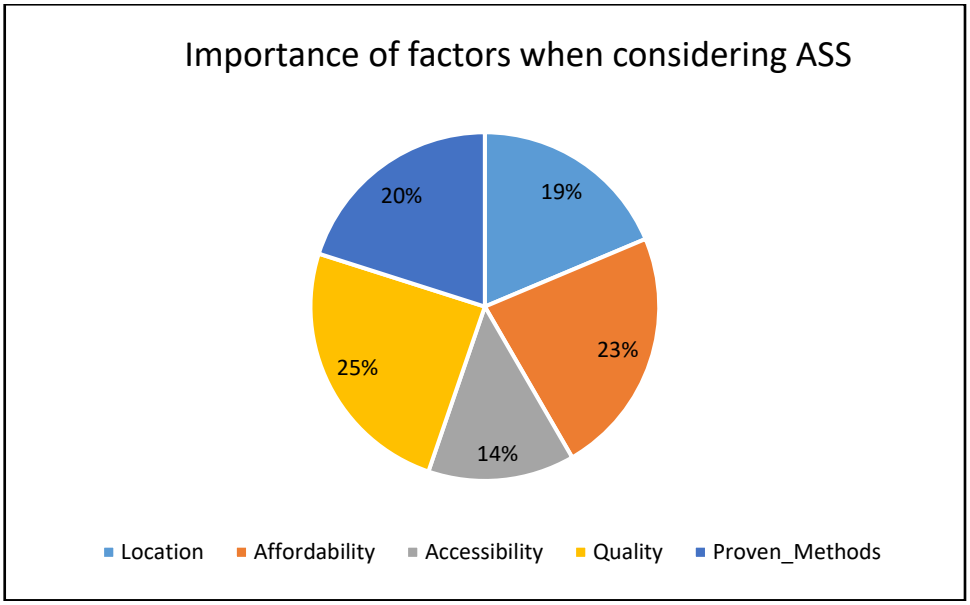


Figure 3: Important factors when deciding on ASS

4.4 Teachers views on the need for ASS

All teachers indicated with scores of 4/5 and 5/5 that in their experience as teachers they often have learners who require remedial intervention. This has been further substantiated by all teachers' responses which indicated with scores of 4/5 and 5/5 that most learners find it difficult to grasp mathematical concepts. When it came to ability of learners to read for meaning, about 42% scored in the unable category with over a third in the neutral category. These responses indicate that there is some work needed to assist learners in school in Maths and English to improve their literacy levels.

Parental involvement was assessed through gauging their capabilities to provide assistance at home as well as teachers view of how involved parents are. About 50% of teachers observed parents leaning towards the not involved categories. This means that they put reliance on teachers to assist their struggling children and fill the gap. Refer to Appendix B – Results for detailed table.

As experts in education, Table 6 indicates teachers' views on the type of solutions that could add value and improve leaner outcomes. About 83% agree and strongly agree that intervention method that focuses on individual competency would be a viable option to address gaps observed in mathematics and English amongst school learners.

Table 6: Viable intervention method

An intervention based on individual competency a viable option		
	N	%
Neither agree nor disagree	2	16.7
SW agree	2	16.7
Strongly agree	8	66.7
Total	12	100.0
Are you equipped to provide remedial intervention		
SW not equipped	3	25.0
SW equipped	6	50.0
Equipped	3	25.0
Total	12	100.0

The online learning and teaching piloted during COVID-19 lockdown served as a reference to analyse whether this improved learner outcomes or not. Two thirds of teacher indicated that performance based on 100% online learning and teaching was worse than conversational pre-Covid method. This experience was similar for most learners including those who already had learning difficulties and consistent with findings by Iivari et al. (2020). These outcomes could have also been influenced by other factors and disruptions that came with changing environments and stresses that came with going into full lockdown and COVID-19, however further elaboration was limited due to data collection method.

Only 16% of teacher experienced improved performance for learners including those with learning difficulties. These results indicate that a switch to full online intervention might not be a viable option but rather a hybrid model that allows leaners requiring physical intervention to be accommodated, while those who perform well online are also accommodated. Refer to Appendix B – Results for detailed table on online learning and teaching.

4.5 Regression

Linear regression was conducted to identify which variables amongst independent variables (IV) average score, availability of online option, affordability, quality, proven methods, teachers' highlighting need and parents' level of education has an impact on the dependent variable (DV) – the decision to enrol in ASS (Enrol) as per Figure 4. Average score comprises of the mean score between average score in mathematics and English with a Cronbach Alpha (α) of 0.709 as per Appendix B – Results , thus a reliable construct.

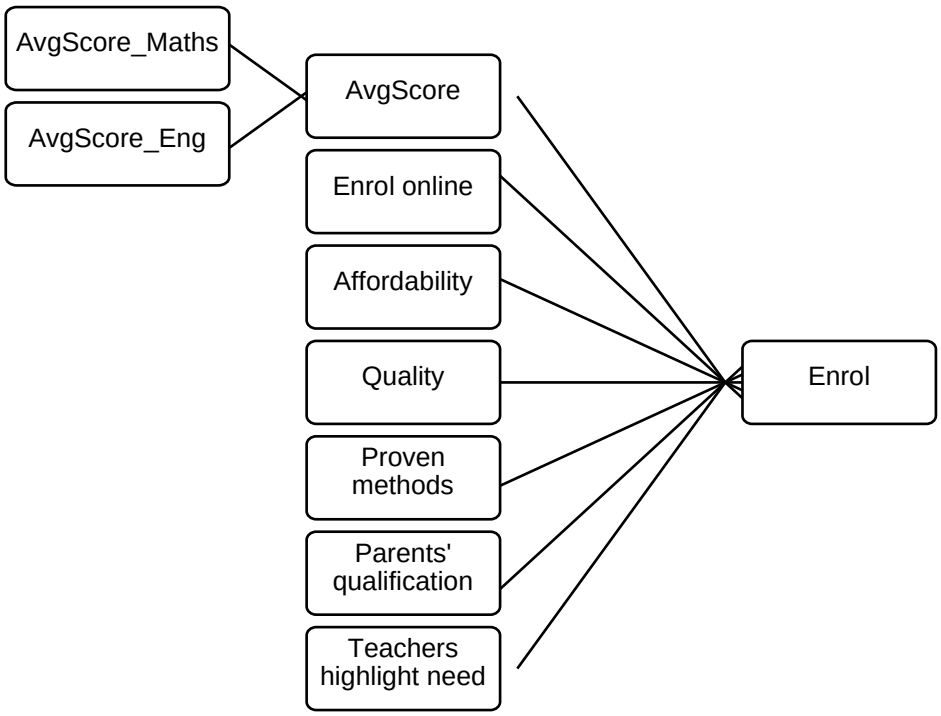


Figure 4: Assumed regression model

4.5.1 Regression model fit and checks

To assess model fit R squared of 0.42 adjusted to 0.362 was obtained indicating that 36.2% of the variance in Enrol is explained by the regression line. This result is acceptable and within the range obtained by a study investigating the effect of private tutoring through scores in Maths, English and other two languages (Ömeroğulları et al., 2020). The ANOVA table shows that the model fits the data with a significance level (p-value) of 0.001 and within required norms. A Durbin-Watson statistic of 2.013 was obtained meaning a passed autocorrelation test within the ranges of 2 and 4. Based on the variance inflation factor (VIF) in coefficients Table 7, correlations table and condition index in Appendix B – Results , no multicollinearity and endogeneity were observed.

Scatterplots in Appendix B – Results indicate a random spread of datapoints with data tracking along the central line therefore no heteroscedasticity was observed. This means all IVs are different and not predicting each other. Based on the histogram and P-Plot the data is normally distributed and homoscedasticity is not violated. A maximum Cook's distance of 0.364 as obtained in residual statistics. This statistic is less than 1 meaning that outliers have minimal influence on the regression line. Refer to Appendix B – Results for reliability statistics and regression output.

4.5.2 Correlation analysis

There is negative moderate association between decision to enrol in ASS and average score, secondly, proven methods and affordability at correlation coefficients of -0.48 and -0.44 respectively. This means parents are more likely to enrol children in ASS if their average score drops and the more proven methods are considered, the less affordable that service becomes to parents. The moderate positive liners association of 0.37 between enrolling and enrolling online means that chances of parents deciding to enrol increases if the option of online service is offered. Weaker associations between 0.2 and 0.29 are witnessed between affordability, quality, the role of teachers and the decision to enrol, parents' qualification and leaner average score, negative quality and

affordability. All the above-mentioned relationships were significant at the 0.01 and 0.05 level (1-tailed). Refer to Appendix B – Results correlations table.

4.5.3 Regression analysis

Based on the regression coefficients output in Table 7, only two variables are statistically significant with p-values less than 0.01 at a 95% confidence interval. Average score and the option to enrol online is not due to chance and therefore is a meaningful prediction. Based on standardised Beta Coefficient (β) the biggest driver of enrol is leaner's average score followed by enrol online with standardised Beta coefficients of -0.44 and 0.27 respectively. Average score has more impact than enrol online, albeit this level of association is considered moderate.

The decision to enrol and enrol online changes to unlikely, SW unlikely, neutral, SW likely and very likely at 0, 25, 50, 75 and 100 respectively. The practical meaning of the relationship using β is that for every percentage increase in average score the likelihood of enrolling in ASS decreases by approximately 5%. Changes between the different positions i.e. unlikely, SW unlikely, neutral, SW likely and very likely take place at 0, 25%, 50%, 75% and 100% respectively. Secondly, for every unit increase (a step change from unlikely to SW unlikely to neutral to SW likely to very likely) in enrol online, the likelihood of enrolling in an ASS increases by 23.6%, while keeping other variables constant. All other remaining variables did not have a significant causal relationship with the decision to enrol in ASS.

Table 7: Regression Coefficients

	Effect on performance			
	Unstandardized Coefficients	95% Confidence Interval	Beta	Collinearity Statistics
	B		β	VIF
Intercept	6.502	4.39 to 8.61		
AvgScore	-.047***	-.07 to -.03	-.44	1.097
Enrol online	.236***	.07 to .41	.27	1.108
Affordability	-.020	-.04 to .00	-.22	1.500
Quality	.011	-.01 to .04	.10	1.327
Proven Methods	-.014	-.04 to .01	-.14	1.525
Qualification	.092	-.13 to .31	.08	1.140
Teachers highlight need	-.115	-.31 to .08	-.44	1.156
R^2		0.42		
Adjusted R^2		0.36		
F		7.23		

Note: N = 78, B = Unstandardized Coefficients, β = Standardized Coefficients
*** = p <0.01, ** = p < 0.05

4.6 Results discussions

The objective of the study was to determine parents' interest in an afterschool remedial service. Moreover, important factors when considering such a service as well as factors that increases the likelihood for enrolment. An average score of 64% and 68% in Mathematics and English respectively out of 78 responses shows that there is room for improvement. According to teachers, remedial intervention is often required in Primary schools as corroborated by the low average scores and minimum scores as low as 27%. These responses indicate that there is some work needed to assist learners improve their learning outcomes. The levels of parents' satisfaction indicates that mathematics requires remediation to get to satisfactory levels whereas English requires assistance to reach the highest potential.

Irrespective of the level of satisfaction parents are willing to enrol their children to such a service. Over 55% of parents (43 of 78 respondents) are likely to enrol in ASS, meaning that out of a population of about 356 parents in the school, 55%

(196) are likely to enrol. However, mixed preferences between online and physical centre as well as teachers' responses on the experience and performance during forced online learning and teaching suggests that a hybrid model would be the best approach to cater for individual needs. Although teachers indicated that they are equipped to provide such interventions, learners are still falling behind and unable to achieve as expected. This means other factors such as delayed improvements requiring more time for remediation (Khalid & Anjum, 2019) and inadequate formal remedial qualifications (Kasran et al., 2012) may be the problem.

According to correlations, parents are more likely to enrol children in ASS if their children's average score drops. However, this does not imply that ASS will not have high performing learners as those parents also indicated a likelihood to enrol. The negative association between proven methods, quality and affordability of service means the business always needs to strike the value for money balance. Moreover, incorporating an online service, ensuring affordability and maintaining high quality improves chances of parents deciding to enrol in ASS, therefore critical in the service offering. More than just an association, the decision to enrol is predicted by leaners' average score and the online service offering. Amongst the two variables average score has the highest impact. This means that ASS requires a strong relationship with schools for recommendations to parents whose leaners need assistance.

For better positioning of ASS, it is also important to focus on what parents consider to be the most important factors that influences the decision to enrol. The five factors considered in this study have been found to have an impact when parents consider supplementary services (Bray & Kwok, 2003; Orcos et al., 2019). Moreover, from this study, quality of service and affordability were the most important factors. The business will have to strike a balance by creating "value for money" (Jackson, 2012). Based on this study, there is interest in an afterschool supplementary service in Centurion and parents want their children to do well. This requires high quality service at affordable price, with an online option and a method that is individualised for high impact. Notwithstanding, real progress may take time with sustainable improvement in leaner academic outcomes and confidence.

5 Business venture proposal

5.1 Company Description

Kumon Amberfield is a 100% black, youth and woman owned start-up company focused on afterschool service provided to learners. The centre focuses on remediating interventions as well as assisting learners to reach their full potential in mathematics and English. This business is responding to a challenge highlighted by the department of Basic Education and confirmed through the research conducted in this study. Kumon Amberfield's physical premises will be based in Centurion, under the Tshwane South District (TSD). However, the business will also provide its services online.

5.1.1 Vision, Mission and Goals

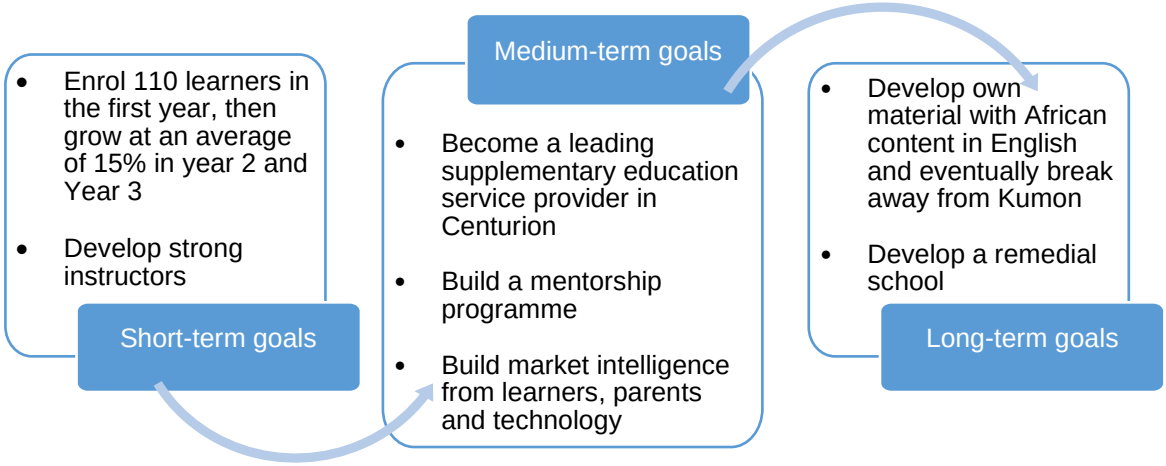
Vision statement

Establishing a solid foundation in math and English through high quality, individualised intervention to enable each child to realise their full potential and have limitless opportunities.

Mission statement

To build confidence and independence through numeracy, literacy and mentorship.

Business goals



5.1.2 Products and services.

The business offering is remedial intervention for learners experiencing difficulties as well as guided support for learners who what to maintain or improve their current grade levels as per survey results.

5.1.3 Legal status and ownership.

Kumon Amberfield is a franchise business from Kumon Education SA (PTY) Ltd. The franchise owner will be Noko Machipi a Chemical Engineer and investment finance professional who is passionate about education and inclusion of those experiencing difficulties. Refer to Appendix C for detailed profile.

5.1.4 Key partnerships

Kumon Amberfield is an afterschool service provided to learners. Therefore, the business will operate as a private for-profit company that does not require any registration with the Department of Basic education or industry bodies. It was noted from the regression analysis that learners' average score was the biggest driver of the likelihood to enrol to Kumon Amberfield. This means that the business requires a close cooperation with schools around Centurion to benefit from learner referrals in addition to parents' independent initiative.

A key partnership will be with Kumon, through a franchise agreement. As a start-up this will give the business the much-needed support.

5.2 Industry analysis

The supplementary education service that is also known as the "shadow education" is segmented based on providers, form of delivery and the timing as per Figure 5.

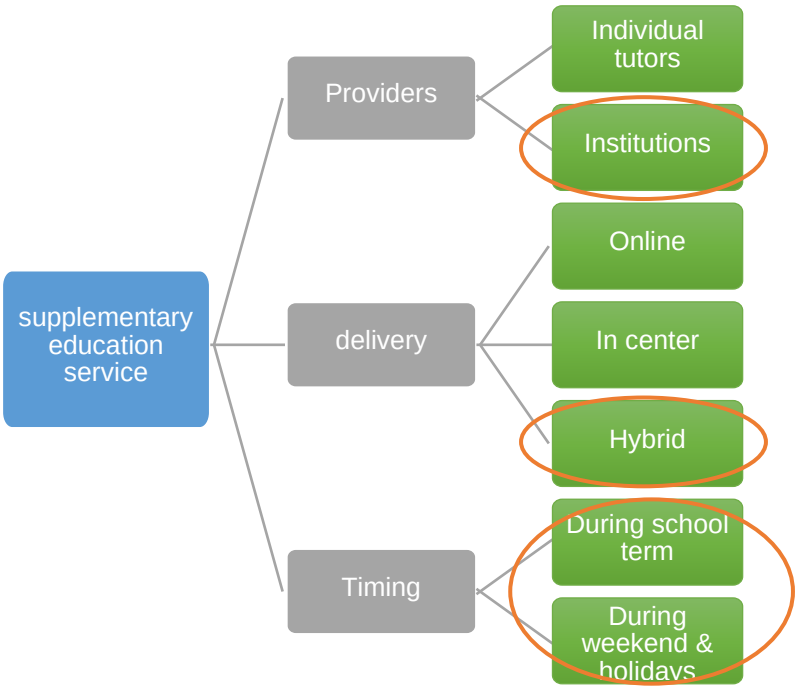


Figure 5: Segmentation of supplementary education service (Zhang & Bray, 2020)

According to Chetty et al. (2017), an average of 29% of grade 6 South African learners received supplementary education. Gauteng was however above average at 37.8% (Chetty et al., 2017). A demand for supplementary education services is created due to dissatisfaction with the quality of public education, childminding requirements and academic performance to secure the future (Bray, 2021).

The private tutoring market potential in South Africa is approximately US$1.14 billion in 2023 with Tshwane (Pretoria) accounting for approximately US$147 million (12.8%). The overall South African market is estimated to grow at an average annual rate of 8% from 2018 to 2028 (Parker, 2022). This growth rate is in-line with the expected global growth rate of 8.3% from 2021 to 2028 (Fortune Business Insights, 2021).

5.3 Market Analysis

5.3.1 Market segmentation and target market selection.

According to Palmatier and Sridhar (2017, p.47) the best segment to target should be driven by a need, should be unique, the business must have competencies and resources to serve the unique segment, a segment where the business would be able to retain customers, where customers are identifiable and can be targeted, able to provide the financial value that makes the business viable.

As per literature review, Centurion which falls under the Tshwane South District (TSD) caters for a total of 260 573 learners and absorbs 10% to 13% of new learners migrating into Gauteng yearly (GDE, 2021). The study results indicate that the target market comprises of (1) learners that needs to catch up due to learning difficulties or other reasons and (2) learners who perform beyond grade levels and want to stay ahead as depicted in

Figure 6.

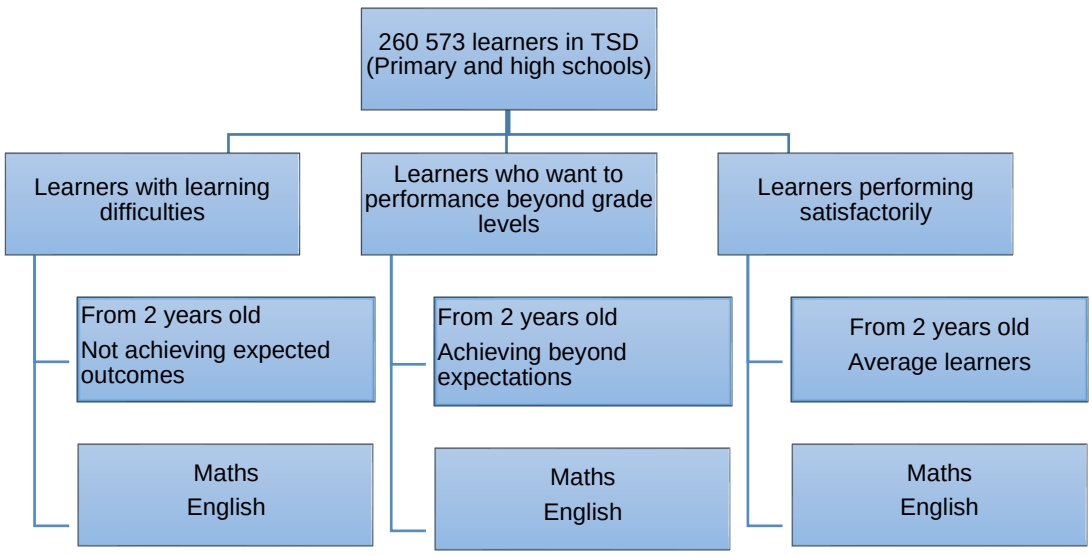


Figure 6: The target market

Based on the one school where the survey was conducted, 196 (55%) of the population are likely to enrol. However, the area has other public and private schools from which potential customers could come from. Main schools within a 7km radium to Amberfield Centurion are as per Table 8. Some of these schools have both primary and high school with undisclosed number of learners.

Table 8: Schools with 7km radius from Amberfield

School	**Grades**
Amberfield college	R-12
Springvale Primary School	R-7
Spark Centurion	R-7
Pinnacle Raslouw	R-8
Jacaranda International	R-12
Uitsig Primary	R-7
Uitsig High school	8-2
Curro Thatchfiels	R-12

To ensure a good distribution of Kumon centers, Kumon has already identified one area that is an opportunity for a new Kumon Center in Amberfield Centurion as per Figure 7.

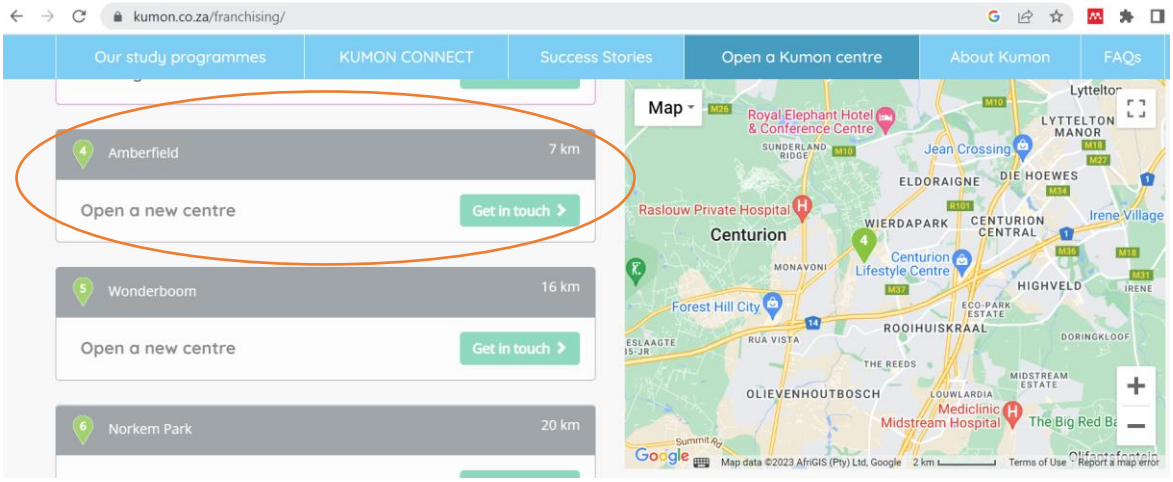


Figure 7: New Kumon centre opportunity

5.3.2 Positioning

Kumon Amberfield is an afterschool supplementary education service that focuses on remediating learners experiencing difficulties, help maintain performance or help learners perform beyond expectations. This business focuses on building a solid foundation through identification of individual learners' competency level regardless of curriculum or school grade. This will be accomplished by providing high-quality services and pedagogical resources that go beyond academics to mentor a learner as a whole and build confidence required in the modern world to work with data and communicate effectively. Kumon Amberfield's approach provides sustainable long term results.

5.3.3 Buyer behaviour.

In the survey, when asked to rank the five most important factors to consider when deciding to enrol into a service such as Kumon Amberfield, parents ranked quality and affordability as most important followed by proven methods/ curriculum then accessibility as least important as per Figure 3 of Research results section. This means that the potential customers are looking for "value for money" which according to Jackson (2012) requires the business to find a balance between economic factors, efficiency and effectiveness.

5.3.4 Competitor analysis.

Kumon has four main direct competitors offering supplementary education services and operating on a franchise model. These include Seriously Addictive Mathematics & English (SAM and SAM), Master Maths, Kip McGrath and Mathnasium. Indirect competitors include numerous private tutoring services available physically and online. Private tutoring is different to the Kumon type of service as they mostly use school curriculum and learner grade material. Tutoring platforms mainly match the tutors with learners leaving the full responsibility with the tutor (Kumon, 2023). Direct competitor profile and analysis is as follows and depicted in Table 9.

Table 9: Direct competitor comparison

Criteria \ Competitors	KUMON	S.A.M	master maths	KipMcGrath	MATHNASIUM
Own Curriculum	✓	✓	✗	✗	✓
In centre & online	✓	✗	✗	✓	✓
Established global brand	✓	✓	✗	✓	✓
All ages	✓	✗	✗	✓	✓
Offers Maths and English	✓	✓	✗	✓	✗
Extra lessons offered	✗	✗	✓	✓	✗
Strictly qualified franchisor/tutors/instructors	✗	✗	✓	✓	✗
Study habit - daily homework	✓	✓	✗	✓	✗
School homework assistance	✗	✗	✗	✗	✓
Presence in SA	✓	✓	✓	✓	✗

Seriously Addictive Mathematics & English (SAM and SAM): A top ranking, award winning, global supplementary service based on Singapore Maths, which is deemed the most effective to support the curriculums offered in South Africa. This ranking is based on the TIMSS and PISA survey. Though ranked highly, this business is comparatively new in South Africa having commenced with operations in 2016 (SAM, 2023).

Master Maths: With 140 centres in South Africa, this supplementary education service has been in existence globally for over 45 years. Master Maths' competitive advantage is requirement for franchisor's and tutors to have a higher education qualification that involves extensive mathematics or a qualification in teaching to ensure quality delivery. However, the diverse offering including extra lessons, short courses and exam revision may be removing attention from building foundation. (Master Maths, 2023).

Kip McGrath: Kip McGrath is a global brand with 560 centres in total but only 60 in South Africa. Their method of instruction includes a combination of online and

hard copy tasks which follows a progressive approach from a low level. The business uses only qualified teachers and have one contact session per week (Kip McGrath Education Centres, 2023).

Mathnasium: Mathnasium has been in operation for about 21 years and over 1100 centres mainly in the USA, presenting numerous opportunities to grow globally through their franchise model. This brand has a proprietary method and material that focuses on Maths only. Their competitive advantage is a curriculum that assists in solidifying foundational understanding of the subject. This franchise got recognition 15 times since inception by Entrepreneur Magazine as one of the top 500 low-cost and fast-growing franchises (Mathnasium Franchise, 2022) .

Kumon: Kumon is a global brand with over 60 years of experience in the supplementary education service. The substantive enrolment numbers of over 4 million learners enrolled globally is a testament to its success. In South Africa the business has been in operation for 32 years offering both Maths and English through more than 200 centres (Kumon, n.d.-a)

Based on the analysis above, the strongest competitors to Kumon are Mathnesium and Kip McGrath. However, Mathnesium is not currently in South Africa and will take long to establish its brand locally compared to the well establish Kumon brand. Kip McGrath ticks most of the boxes however does not have its own proven curriculum which sets it on the back foot compared to Kumon which has methods and curriculum proven to yield results.

5.3.5 SWOT Analysis

The following is a SWOT analysis for Kumon Amberfield:

Strengths	**Weaknesses**
• Unique and proprietary curriculum and material • Proven method and track record • Trusted international brand • Method independent of school curriculum • Daily workbooks building good study habits • Focus on two subjects for high impact • Online offer provides flexibility • Access to resources through Kumon • Kumon training for high quality delivery • Mentorship programme to build whole learner • Strong willingness of parents to enroll children	• Require external funding • Obtaining location approval from Kumon • First time business owner • No long-term contract with customers to secure revenue • Limited innovativeness and agility due to franchise conditions
Opportunities	**Threats**
• Franchise model allows time to study the industry, build relationships and gather market intelligence. • Online service extends reach and provides good growth prospect • Centurion still has areas without a Kumon centre • Leaner influx in the TSD indicates a growing market • Only two remedial schools in the area offering future growth into a remedial school • Private education has become more acceptable in Africa and supported by government policy (Bray, 2021). • Growing middle class in South Africa seek high quality education thus driving demand for private and supplementary education (Bray, 2021).	• Low barriers to entry • Start-up cost not as high as other franchises • Parents' affordability impacted by the economic status • Perception of profiting out of a social problem • Learners do not get to have a break – daily worksheets • No industry bodies to put structure and controls (regulate) • Not enough data available for supplementary education service to benchmark and monitor (Bray, 2021).

5.4 Marketing Plan

5.4.1 Marketing strategy.

Marketing strategy is analysed based on the first marketing principles which involves managing customer heterogeneity, customer dynamics, sustainable competitive advantage and resource trade-offs (Palmatier & Sridhar, 2017). This strategy will be responding to the business goals as highlighted in section 5.1.1.

Managing customer heterogeneity

The two major segments identified were derived from the survey that indicated that both struggling learners and talented learners would be customers in this business. The business will focus on tracking and aligning preferences and needs in these segments as follows:

- Assessment to identify the intervention starting point
- Regular meetings with parents to train them how to support learners with worksheets done at home and get feedback
- Allow flexibility for those that prefer full online service and in-centre service, however, consider how the learner copes with parents' preference
- Regular data analysis to anticipate and pick-up shifting preferences early

Managing customer dynamics

Managing customer dynamics involves making sure that the business offering caters to the client's needs at different stages (Palmatier & Sridhar, 2017). This is analysed through the Acquisition, Expansion, Retention (AER) model in Table 10 below.

Table 10: The AER Strategy

AER stage	Characteristics	Strategy
Acquisition	Remedial Learning difficulties, poor outcomes, require catch-up. All ages Maintain and stay ahead Satisfactory performance, need to go beyond grade levels. All ages.	• Free initial assessment and first month • Build relationships with local schools for referrals • Presentation to parents • Existing, trusted brand to enter market • Material based on assessment outcome • Ensure effective online service
Expansion	Satisfied with service Satisfied with leaner progress	• Continuous assessments to track progress and adjust where required • Quarterly meetings with parents
Retention	Loyal customers Noticing improvements in school performance Bored customers May want to migrate to a school setup – remedial school Migrate to a supplementary service with more product offering	• Maintain quality standards • Celebrate leaner achievements • Maintain relationships with parents through continuous engagements and feedback seeking • Flexibility to incorporate new digital technologies for better offering • Regular data analysis to anticipate and pick-up shifting preferences early • Diversify offer outside Kumon

Managing sustainable competitive advantage

Figure 8 depicts the customer value proposition which is based on sustainable competitive advantage (SCA). SCA for this business is centred around a combination of the following factors:

- Globally recognised and trusted brand
- Quality methods and materials offered through in centre and online service with proven track record of effectiveness
- Relationships built with the learner, parents and schools to build trust and commitment

As per Palmatier and Sridhar (2017) these factors cover the sources of SCA inclusive of brand, offering and relationship and can be measured as follows:

Importance of SCA to potential customer: As proven through survey, parents want their children to succeed and do better. Starting learners at their level of competence builds the confidence and improves outcomes. Moreover, the option of online service plays an important role acquiring customers.

Offer better than competition: Based on **Error! Reference source not found.**, one of the strongest competitors Mathnesium does not currently have franchises in South Africa, offers only Maths and does not have homework to build good study habits, consistency and sustainable outcomes. The other stronger competitor Kip McGrath does not have own curriculum.

Difficulty to duplicate: Brand reputation built over 60 years and material refined over these years are not easily duplicable. The Kumon website also shows proof of trust and quality delivery through success stories of learner achievement.

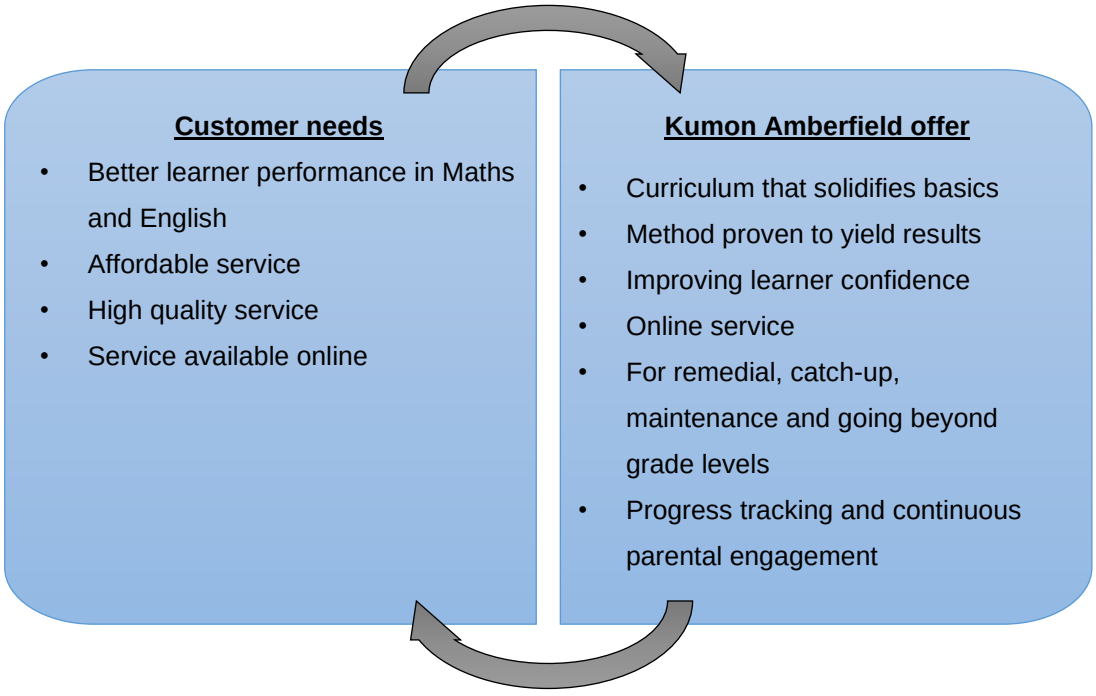


Figure 8: Customer needs vs Kumon Amberfield offer

5.4.2 Seven Ps of Marketing.

The seven Ps of marketing are as illustrated in Figure 9.

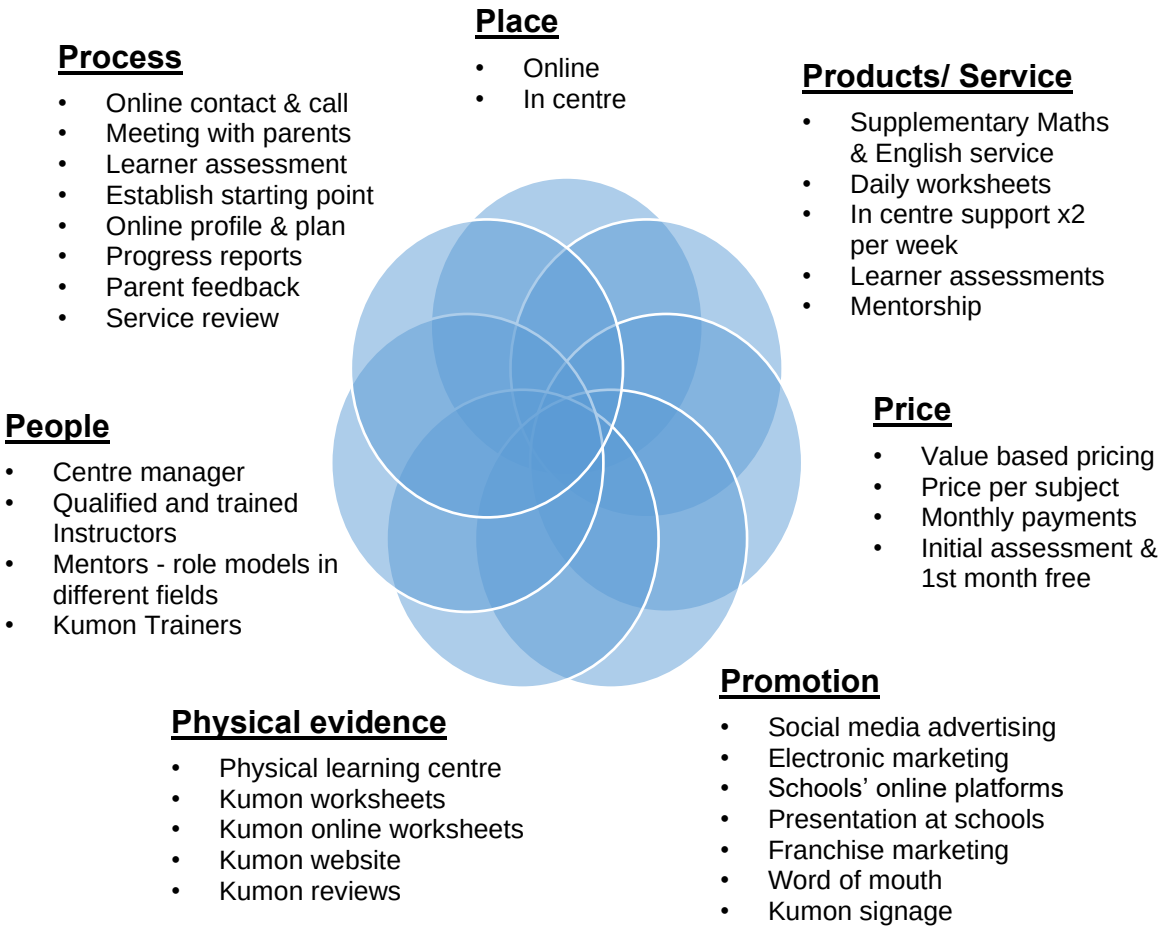


Figure 9: The 7 Ps of marketing for Kumon Amberfield

5.5 Operations Plan

5.5.1 Location and timeslots

The business location for Kumon needs to be an area that does not have a centre yet and has a potential looking at the residents and schools within that area. The centre will be in Amberfield (Centurion) which is the only opportunity available for a new centre in this area and will be the main business address. However, the online platform introduced in 2022 is a developing product that will open more possibilities in the near future.

At the beginning, the centre will open on Tuesdays and Thursdays from 1pm to 5pm. Centre days can be varied based on the number of learners enrolled which may require more centre days to give each learner the prescribed two days.

5.5.2 Facilities

The centre will have two classrooms with two instructors in each room. The premises will also have a waiting room for learners dropped off early or picked up late. A facility rental model will be utilised to keep the start-up costs low and offer competitive pricing. The centre requires classroom furniture, computers for new learner assessments as well as admin and a printer. A telephone will be a digital version that can be accessed through Microsoft Teams.

5.5.3 Instructors

Instructors will be employed by the centre for three days in a week, which comprise of two centre days and one day for admin and planning. Instructors will be paid based on their qualifications, Kumon guidelines and in line with applicable labour laws. These instructors will assist learners where necessary, mark worksheets, ensure learners do corrections and track time lapsed as learners should not be on a worksheet for more than 30 minutes. Instructors are also responsible for monitoring the online worksheets completed, online corrections and uploading the worksheets for the next days.

The managing director will be responsible for proactive centre marketing. This involves relationship building with schools in the surrounding areas, through presentations to SGBs, parents at school gatherings and school digital platform advertising.

5.6 Management Team and Company Structure

The management team comprise of Noko Machipi, the managing director (MD) of the business as per organogram in **Error! Reference source not found.**. At the beginning the MD will take on the role of marketing, operations manager and finance manager with the assistance of an admin assistant. As the business

grows these positions will be filled. The founder has strong academic background from Engineering, Finance and an MBA making her a well-rounded entrepreneur with high level of business acumen, refer to profile in Appendix C. Her passion for education stemming from a personal experience with a child with learning difficulties provides balance required to succeed in this venture.

The Kumon Area Manager will be there to provide the necessary support from the Franchisor to ensure maximum quality and efficiency of delivery. This support will be given during the business launching phase and includes marketing and operations support. Moreover, all instructors in the centre will be trained by Kumon Education SA (PTY) Ltd and budgeted accordingly.

5.7 Project Schedule

Table 11 shows the major milestones to get the business to open in the first week of January 2024.

Table 11: Milestones and activities towards centre opening

Milestone/ activity	Estimated duration (days)	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24
Start	10									
Apply for finance	95									
Apply for franchise	95									
Franchise Agreement signed	0									
Lease signed	0									
Leasehold improvements	60									
Start marketing activities	0									
Instructor training	16									
Initial material ordering	45									
Final preparations	22									
Center opens	0									

5.8 Financial Projections

5.8.1 Start-up costs

The main start-up costs are made of capex and working capital. Large contributors to this requirement include leasehold improvements, office equipment, fixtures and fittings. The total start-up cost amounted to approximately R1,361,200 as per Table 12. These figures are a combination of estimates and guided by Kumon's FDD for 2022 (Franchise Direct, 2023).

Table 12: Start-up costs

Start-up Costs	**R**
Capex	
Franchise Cost	80,000
Office equipment	200,000
Fixtures and fittings	300,000
Initial material	13,800
Operating expenses	
Training	21,000
Material shipping Cost	10,000
Lease deposit & 4 months rent	80,000
Leasehold improvements - LHI	334,600
Administration expenses	
Professional Fees	50,190
Business License, Name Registration	3,346
Liability Insurance	8,030
Kumon Lead Management Telephone System	10,038
Selling expenses	
Marketing costs	33,460
License fee	20,000
Salaries - 4 months	32,320
Total	**1,196,784**

Loans will be sourced from the local banks. The source and application of funds are as per Table 13 below.

Table 13: Source and application of funds

SOURCE OF FUNDS	**Capex Loan**	**Working Capital Loan**	**Shareholder contribution**	**Total**
Amount	160,040	701,079	500,000	**1,361,119**
Annual interest rate	15%	15%		
Term of loan (months)	60	60		
Monthly rate	1,1%	1,1%		
Monthly payment	3,692	14 522		**19,866**
Total Amount Payable	221,530	871 328		**1,191,973**
Moratorium		4 months		
APPLICATION OF FUNDS				
Fixed assets purchased	580,000			
Working capital		781,119		

5.8.2 Main assumptions

Revenue for the business is made up of monthly Kumon fees per subject. The Kumon model does not have creditors as this is a cash business with fees paid upfront for the next month. Moreover, once off enrolment fee to register a new learner is also applicable. About 55% of respondents equivalent to 196 of the population in the study were likely to enrol in this service. However, only 56% (110 learners) were budgeted in the first year as the centre is getting established. Revenue assumptions are as follows:

- 20% growth of learner numbers in Y2 then 10% in Y3 onwards as per Figure 10. Based on the 10% to 13% influx of learners into Gauteng (GDE, 2021). This results in revenue growth of approximately 14% year on year as per Figure 11.

- 30 learners per class (no communal lessons)
- All learners do Maths & English
- 30min time slots per subject from 1pm to 5pm
- Two centre days per learner per week
- R650 per subject per month,
- R300 p/m mentorship fee
- R1 000 Once off enrolment fee
- Annual increase at CPI of about 5%

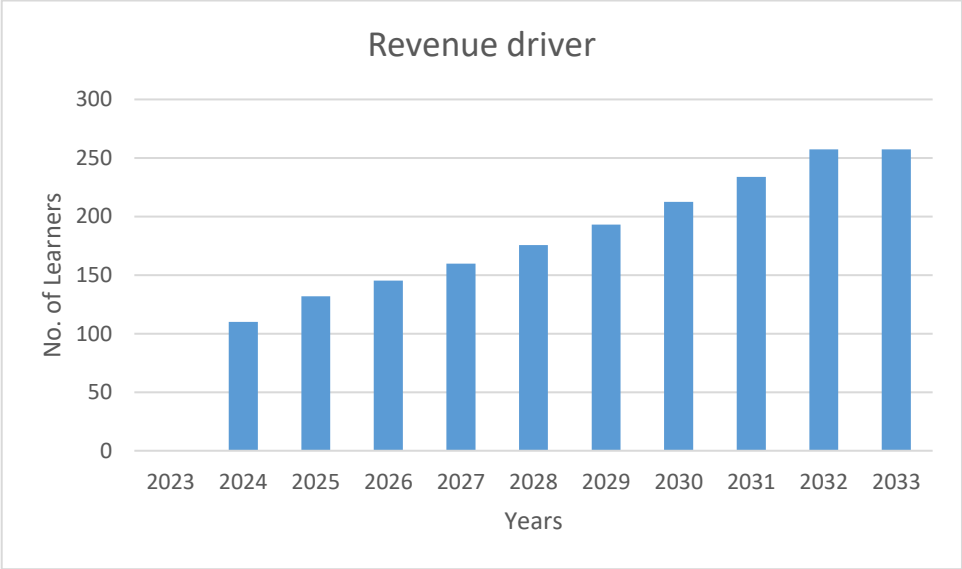


Figure 10: Learner growth

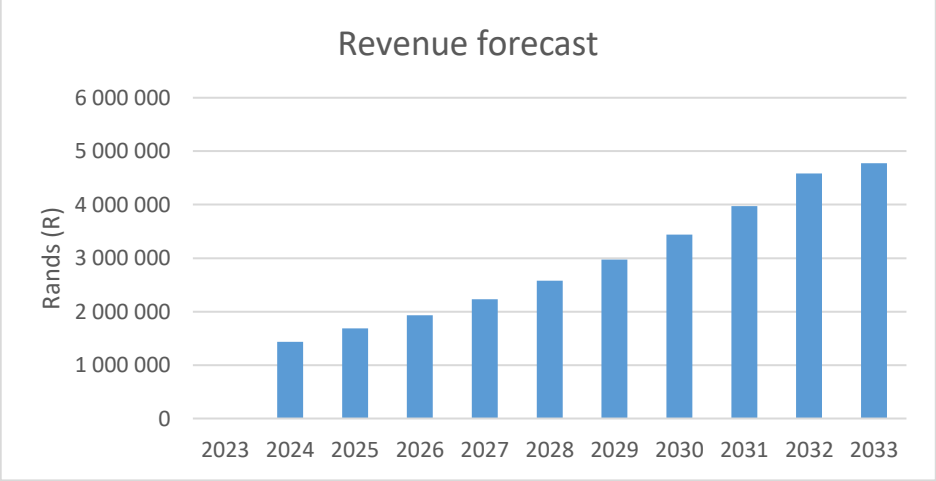


Figure 11: Revenue growth

Centre rental costs will be incurred from September 2023 to allow enough time to do leasehold improvements and the necessary setup before the centre opens. The biggest cost driver is the salaries at 34% of sales and royalty fee calculated per learner at 30% of sales. Salaries bill is based on number of learners per instructor ratio of 15:1. As the leaner numbers increase, class space and the number of instructors will be adjusted accordingly. However, this will only be necessary when all days of the week are fully booked by leaners attending twice a week.

5.8.3 Pro forma statements

Detailed pro forma income statement, balance sheet and cash flow statement are included in Appendix C – Business Plan. The break-even point for this business is at approximately 70 learners. As depicted in Figure 12, positive retained earnings will only be realised approximately 2 years after start of operation. Ratios are within norms and indicate a business that is sustainable and able to pay for its obligations.

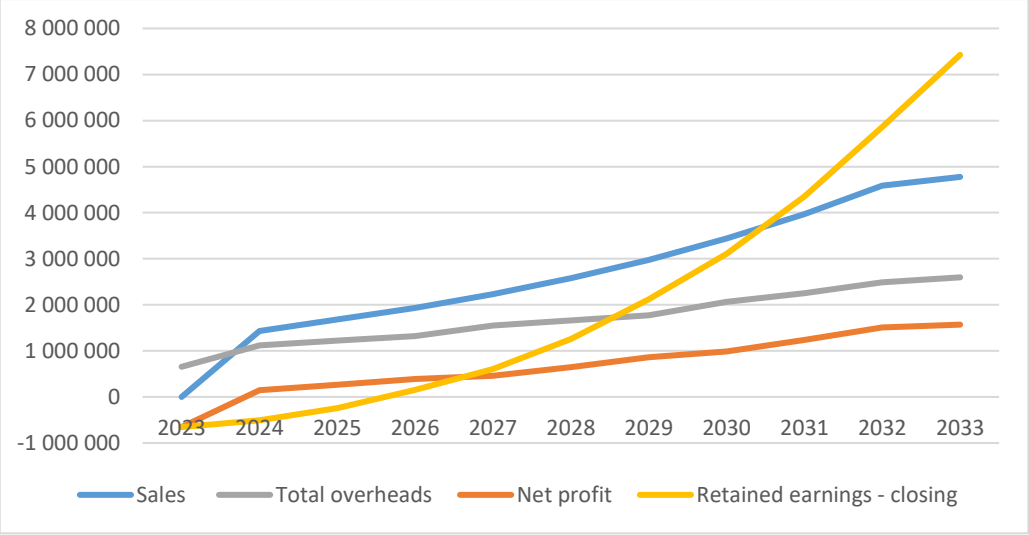


Figure 12: Break-even point & growth

5.9 Conclusion

Based on the analysis above the proposed business is viable with:

- Proven interest from parents and potential to grow based on the number of learners in the area,
- Ability to meet the customer needs by building learner confidence and independence through improved numeracy and literacy, enhanced with mentorship,
- Utilising a method proven to work and regarded by teachers as an effective method of starting at the learner's current competency level regardless of grade,
- Having business support from the franchisor through training, helping with launch and marketing.

This business directly addresses a fundamental problem observed in the country however aims to make an impact on learners in the Tshwane South District. The inflow of learners annually makes this business even more lucrative while the franchise model offers a structured approach to solving a national problem. The online service allows flexibility and enable wider market reach than a physical centre on its own. Moreover, this business can be scaled from being a centre to a school that seeks to ensure no learner is left behind and barriers are removed for those who perform beyond grade levels.

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7 Appendix A - Survey

7.1 Cover letter



Good day,

My name is Noko Machipi and I am a Masters student in Business Administration at the University of the Witwatersrand, Johannesburg. As part of my studies, I have to undertake a research project, and I am investigating an afterschool remedial education service under the supervision of Dr Robert Venter. The aim of this research project is to determine the viability of a physical and digitalized remedial after school service, to assist learners experiencing difficulties with mathematics and English.

For the purpose of this study, you are invited to participate in answering a survey questionnaire which will take you about 15 minutes to complete. You will not incur any cost or accrue benefits by participating. You have the right to accept or decline this invitation. Accepting and taking part in the survey will not result in you incurring costs or gaining any benefits. While filling the questionnaire you have the right to withdraw or not answer questions you do not feel comfortable answering. Declining or withdrawal will not result in any disadvantages or penalties. I will not request you to provide any identification information to ensure anonymity. Your responses will be kept securely in a password protected laptop and not shared.

You are welcome to contact me for any questions and clarity regarding the study.

Yours sincerely,
Noko Machipi

Researcher:
Noko Machipi, 0500680j@students.wits.ac.za

Supervisor:
Dr Robert Venter, robert.venter@wits.ca.za

7.2 Survey questionnaires

Start of Block: Welcome

Q1 **Welcome to the afterschool remedial intervention service survey.**

The aim of this study is to determine the viability of an afterschool remedial service that utilizes digitalized platforms to assist learners experiencing difficulties with mathematics and English. This will take you 10 to 15 minutes to complete.

Please proceed to the next page when you are ready.

End of Block: Welcome

Start of Block: Informed consent

Q2 **Below is a participant information sheet, kindly read through and select "I consent" to proceed.**

Q5 Participant information sheet as per Appendix A - Survey 7.1

Q6 I consent

- ○ Yes (1)
- ○ No (2)

End of Block: Informed consent

Start of Block: If no consent

Q7 You have selected not to participate in the study and I would like to thank you for your time.

You may now close your browser.

End of Block: If no consent

Start of Block: Participant category

Q8 You are participating as a

- ○ Teacher (1)
- ○ Parent/ legal guardian (2)

End of Block: Participant category

Start of Block: Parents/ legal guardians survey

Q19 What is your age?

18 24 30 37 43 49 55 61 68 74 80

Move slider ()	

Q20 What is your gender?

- ○ Male (1)
- ○ Female (2)
- ○ other (3)
- ○ Prefer not to say (4)

Q21 What is your highest level of qualification?

- Matric (1)
- Higher certificate (2)
- National diploma (3)
- Bachelor's degree (4)
- Master's degree (5)
- Doctorate (6)

Q22 How much time do you spend helping your child with school work everyday?

- 0 - 30 min (1)
- 31 - 1 hr (2)
- 1 - 2 hrs (3)
- 2 -3 hrs (4)

Q23 Are you fully capable of assisting your child with mathematics homework?

- Not capable (1)
- Somewhat not capable (2)
- Neutral (3)
- Somewhat capable (4)
- Capable (5)

Q24 Are you fully capable of assisting your child with English homework?

- ○ Not capable (1)
- ○ Somewhat not capable (2)
- ○ Neutral (3)
- ○ Somewhat capable (4)
- ○ Capable (5)

Q25 What is your child's current class size?

- ○ 10 - 20 (1)
- ○ 21 - 30 (2)
- ○ 31 - 40 (3)
- ○ 40 - 50 (4)
- ○ Over 50 (5)

Q26 How satisfied are you with your child's progress in mathematics?

- ○ Dissatisfied (1)
- ○ Somewhat dissatisfied (2)
- ○ Neutral (3)
- ○ Somewhat satisfied (4)
- ○ Satisfied (5)

Q27 What is your child's average score in mathematics (%)?

	0 10 20 30 40 50 60 70 80 90 100
Move slider ()	

Q28 How satisfied are you with your child’s progress in English?

- ○ Dissatisfied (1)
- ○ Somewhat dissatisfied (2)
- ○ Neutral (3)
- ○ Somewhat satisfied (4)
- ○ Satisfied (5)

Q29 What is your child's average score in English (%)?

	0 10 20 30 40 50 60 70 80 90 100
Move slider ()	

Q30 How active are teachers in highlighting your child’s learning areas requiring further attention?

- ○ Not active (1)
- ○ Rarely active (2)
- ○ Neutral (3)
- ○ sometimes active (4)
- ○ Always active (5)

Q32 What is the likelihood of enrolling your child into an afterschool supplementary/tutoring and mentorship service?

- ○ Unlikely (1)
- ○ Somewhat unlikely (2)
- ○ Neutral (3)
- ○ Somewhat likely (4)
- ○ Very likely (5)

Q33 Would you consider an online afterschool supplementary/tutoring and mentorship service?

- ○ Unlikely (1)
- ○ Somewhat unlikely (2)
- ○ Neutral (3)
- ○ Somewhat likely (4)
- ○ Very likely (5)

Q31 If you were to consider an afterschool supplementary/tutoring service which factors would be most important to you?
(For each factor, allocate a weighting between 0 and 100; Higher weighting = higher importance; The weightings should add to a 100)

Location : _____ (1)
Affordability : _____ (2)
Accessibility : _____ (3)
Tutoring quality : _____ (4)
Proven method/ curriculum : _____ (5)

Total : _____

End of Block: Parents/ legal guardians survey

Start of Block: Teachers' survey

Q9 Which subjects do you teach?

- ○ Mathematics (1)
- ○ English (2)
- ○ Others (3)

Q10 Which grades do you teach?

(Multiple answers are allowed)

- ☐ R (1)
- ☐ 1 (2)
- ☐ 2 (3)
- ☐ 3 (4)
- ☐ 4 (5)
- ☐ 5 (6)
- ☐ 6 (7)
- ☐ 7 (8)

Q11 How often do you come across learners who need remedial intervention?

- ○ Not often (1)
- ○ somewhat not often (2)
- ○ Neutral (3)
- ○ Somewhat often (4)
- ○ often (5)

Q12 Is grasping mathematical concepts a challenge for most learners?

- ○ Definitely not (1)
- ○ Somewhat not (2)
- ○ Neutral (3)
- ○ Somewhat yes (4)
- ○ Definitely yes (5)

Q13 Are learners you have taught over the years able to read for meaning (understanding what they read) in primary schools?

- ○ Unable (1)
- ○ Somewhat unable (2)
- ○ Neutral (3)
- ○ Somewhat able (4)
- ○ Able (5)

Q14 An intervention method that is based on individual learner's competency level is a viable option for helping learners with learning difficulties.

- ○ Strongly disagree (1)
- ○ Somewhat disagree (2)
- ○ Neither agree nor disagree (3)
- ○ Somewhat agree (4)
- ○ Strongly agree (5)

Q15 Do you feel that you are better equipped to give remedial intervention or need specialized training?

- ○ Not equipped (1)
- ○ Somewhat not equipped (2)
- ○ Neutral (3)
- ○ Somewhat equipped (4)
- ○ Equipped (5)

Q16 Do you think parents are involved in assisting children who are struggling or rely solely on you?

- Not involved (1)
- Somewhat not involved (2)
- Neutral (3)
- Somewhat involved (4)
- Involved (5)

Q17 How did your learners perform with online learning during COVID 19 lockdown (Compared to pre-Covid 19 lockdown performance)

- Bad (1)
- Somewhat bad (2)
- No difference (3)
- Somewhat better (4)
- Better (5)

Q18 How was this experience for learners who generally experience difficulties in learning (Compared to pre-Covid 19 lockdown performance)

- Bad (1)
- Somewhat bad (2)
- No difference (3)
- Somewhat better (4)
- Better (5)

End of Block: Teachers' survey

7.3 Ethics Clearance

Graduate School of Business Administration
University of the Witwatersrand, Johannesburg

Wits Business School Ethics Committee
Constituted under the University Human Research Ethics Committee (Non-Medical)

Ethics Clearance Certificate

Ethics protocol number: WBS/BA0500680J/179
This certificate is only valid with a legitimate ethics protocol number and signed by the Researcher (below)

This certificate is only valid if accompanied by formal permission from the relevant stakeholder(s).

Project title	Afterschool remedial education service to address low literacy and numeracy levels in the Tshwane South District
Investigator / Researcher	Ms Noko Machipi
Nature of Project	MBA (Business Venture Proposal)
Decision of the Committee	Approved, provided stakeholders and participants are guaranteed anonymity and confidentiality.
Issue Date of Certificate	04 10 2022
Expiry date	Date of submission of the project / research report
Chairperson	Prof Anthony Stacey ☎ +27 11 717 3587 +27 82 880 4531 anthony.stacey@wits.ac.za

Declaration by Researcher

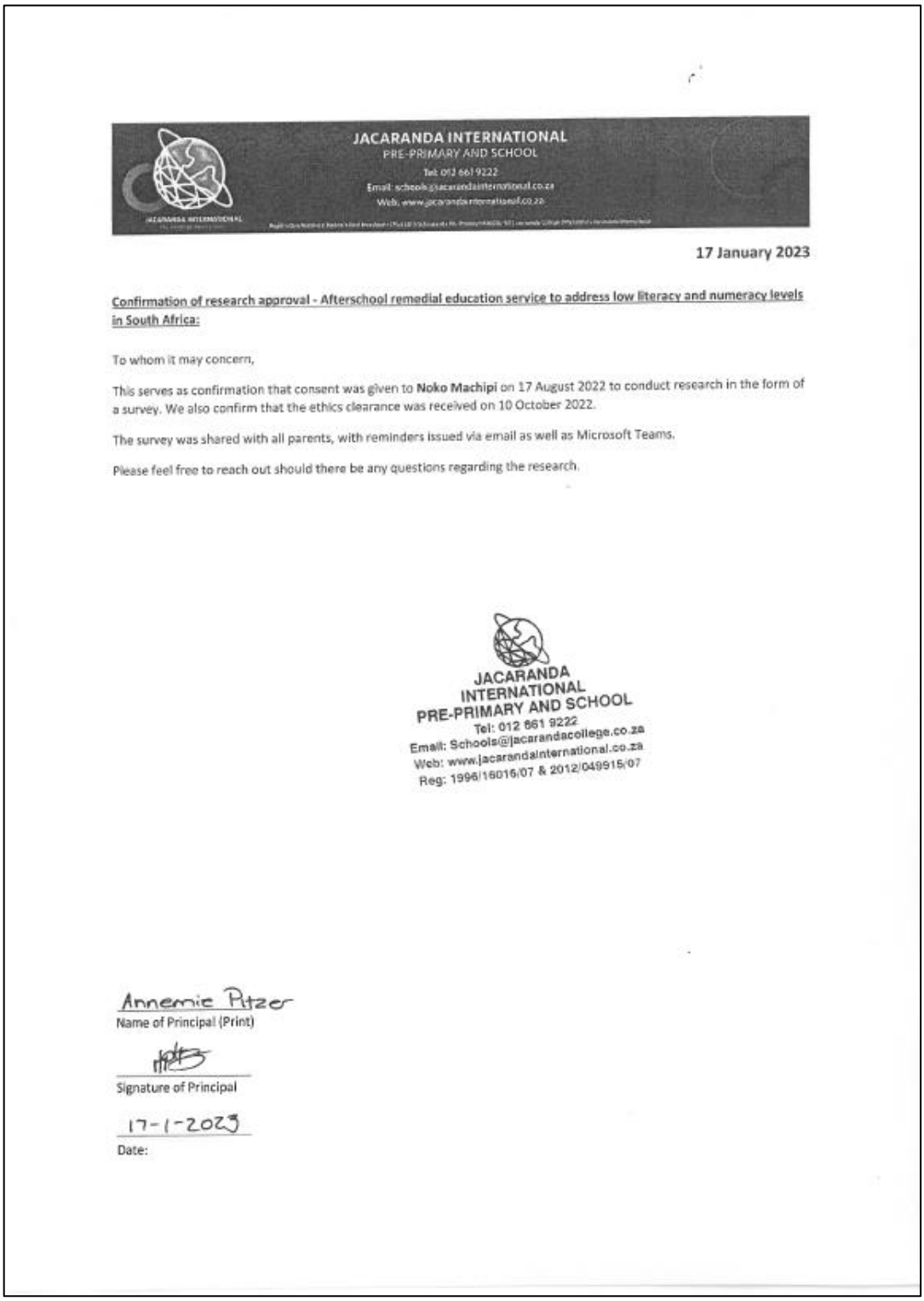
One copy must be signed by the Researcher and returned to the Chairperson of the Wits Business School Ethics Committee.

I fully understand the conditions under which I am authorized to carry out the abovementioned research and I guarantee to ensure compliance with these conditions. Should any departure to be contemplated from the research procedure as approved I undertake to resubmit the protocol to the Committee.

Signature

04/10/2022
Date:

7.4 School permission to conduct survey – Signed by the Principal



JACARANDA INTERNATIONAL
PRE-PRIMARY AND SCHOOL
Tel: 012 661 9222
Email: schools@jacarandainternational.co.za
Web: www.jacarandainternationalf.co.za

17 January 2023

Confirmation of research approval - Afterschool remedial education service to address low literacy and numeracy levels in South Africa:

To whom it may concern,

This serves as confirmation that consent was given to **Noko Machipi** on 17 August 2022 to conduct research in the form of a survey. We also confirm that the ethics clearance was received on 10 October 2022.

The survey was shared with all parents, with reminders issued via email as well as Microsoft Teams.

Please feel free to reach out should there be any questions regarding the research.

JACARANDA
INTERNATIONAL
PRE-PRIMARY AND SCHOOL
Tel: 012 661 9222
Email: Schools@jacarandacollege.co.za
Web: www.jacarandainternational.co.za
Reg: 1996/16016/07 & 2012/049915/07

Annemie Pitzer
Name of Principal (Print)

Signature of Principal

17-1-2023
Date:

8 Appendix B – Results

8.1 Parent respondent gender and qualification

	Parents & legal guardians	
	N	%
Gender		
Male	16	20.5
Female	62	79.5
Qualification		
Matric	6	7.7
Higher certificate	2	2.6
National diploma	28	35.9
Bachelor's degree	26	33.3
Master's degree	15	19.2
Doctorate	1	1.3
Total	**78**	**100.0**

8.2 Frequencies of time spent on homework and leaner's class size

	Time Spent	
	N	%
0 - 30 min	23	29.5
31 - 1 hr	26	33.3
1 - 2 hrs	25	32.1
2 -3 hrs	4	5.1
Total	78	100.0
	Class_Size	
	N	%
10 - 20	13	16.7
21 - 30	56	71.8
31 - 40	6	7.7
40 - 50	2	2.6
Over 50	1	1.3
Total	78	100.0

8.3 Descriptive statistics and teachers' views on ASS

Descriptive Statistics

	N	Min	Max	Mean	Std. Deviation
How often do you come across learners who need remedial intervention?	12	4	5	4.33	.492
Is grasping mathematical concepts a challenge for most learners?	12	4	5	4.17	.389
Are learners you have taught over the years able to read for meaning (understanding what they read) in primary schools?	12	1	5	2.75	1.215
An intervention method that is based on individual learner's competency level is a viable option for helping learners with learning difficulties.	12	3	5	4.50	.798
Do you feel that you are better equipped to give remedial intervention or need specialized training?	12	2	5	3.75	1.138
Do you think parents are involved in assisting children who are struggling or rely solely on you?	12	1	5	2.75	1.288
How did your learners perform with online learning during COVID 19 lockdown (Compared to pre-Covid 19 lockdown performance)	12	1	4	2.36	.881
How was this experience for learners who generally experience difficulties in learning (Compared to pre-Covid 19 lockdown performance)	12	1	4	2.09	1.083
umber_of_Classes	11	1	4	1.91	1.221
Valid N (listwise)	11				

How often do learners require remedial intervention?

	N	%
SW often	8	66.7
often	4	33.3
Total	12	100.0
Is maths challenge for most learners?		
SW yes	10	83.3
Definitely yes	2	16.7
Total	12	100.0
Are learners able to read for meaning?		
Unable	2	16.7
SW unable	3	25.0
Neutral	4	33.3
SW able	2	16.7

Able	1	8.3
Total	12	100.0
Are parents are involved or rely solely on you?		
Not involved	2	16.7
SW not involved	4	33.3
Neutral	2	16.7
SW involved	3	25.0
Involved	1	8.3
Total	12	100.0

8.4 Learner performance during online learning

	Performance with online learning during COVID 19 lockdown	
	N	%
Bad	1	8.3
SW bad	7	58.3
No difference	1	8.3
SW better	2	16.7
Total	11	91.7
Missing	1	8.3
Total	12	100.0
Performance with online learning for learners experiencing difficulties		
Bad	4	33.3
SW bad	4	33.3
No difference	1	8.3
SW better	2	16.7
Total	11	91.7
Missing	1	8.3
Total	12	100.0

8.5 Reliability statistics

	Item Statistics		
	Mean	**Std. Deviation**	**N**
AvgScoreMaths	63.49	13.941	78
AvgScoreEng	68.35	12.714	78
	Reliability Statistics		
Cronbach's Alpha	.728		
N of Items	2		

8.6 Regression Output

Model Summary & ANOVA

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.648[a]	.420	.362	.995	2.013

a. Predictors: (Constant), Teachers_ highlight_need, Affordability, Enroll online, AvgScore, Qualification, Quality, Proven Methods
b. Dependent Variable: Enroll

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	50.147	7	7.164	7.231	<,001[b]
	Residual	69.353	70	.991		
	Total	119.500	77			

a. Dependent Variable: Enroll
b. Predictors: (Constant), Teachers_ highlight_need, Affordability, Enroll online, AvgScore, Qualification, Quality, Proven Methods

Correlations between variables in the regression

Correlations

		1.	2.	3.	4.	5.	6.	7.	8.
1.	Enroll	1.00							
2.	AvgScore	-.48***	1.00						
3.	Enroll online	.37***	-.13	1.00					
4.	Affordability	-.25**	.11	-.04	1.00				
5.	Quality	.26**	.01	.26	-.25**	1.00			
6.	Proven Methods	-.03	-.07	-.03	-.44***	-.18	1.00		
7.	Qualification	.01	.21**	-.09	-.05	.03	-.09	1.00	
8.	Teachers_ highlight_need	-.20**	.09	-.12	.05	-.12	-.19	-.18	1.00

*** = p < .01, ** = p < .05, Sig. (1-tailed)

Collinearity Diagnostics

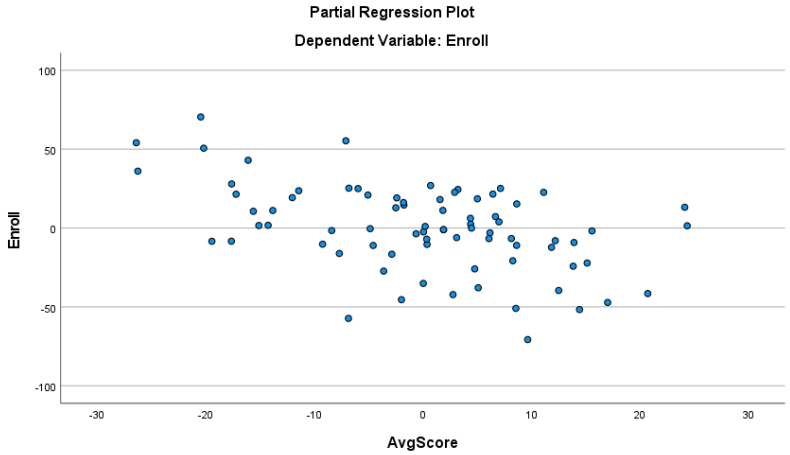
			Variance Proportions							
		Condition			Enroll			Proven		Teachers_
Dimension	Eigenvalue	Index	(Constant)	AvgScore	online	Affordability	Quality	Methods	Qualification	highlight_need
1	6.96	1.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.40	4.16	.00	.00	.00	.18	.00	.27	.00	.00
3	.24	5.38	.00	.00	.04	.15	.26	.16	.00	.00
4	.15	6.87	.00	.00	.20	.15	.00	.04	.00	.43
5	.12	7.6	.00	.01	.35	.00	.03	.00	.26	.18
6	.09	8.92	.00	.00	.30	.19	.48	.13	.26	.00
7	.03	15.38	.01	.68	.00	.17	.11	.14	.35	.20
8	.01	27.12	.99	.31	.10	.15	.12	.25	.13	.19

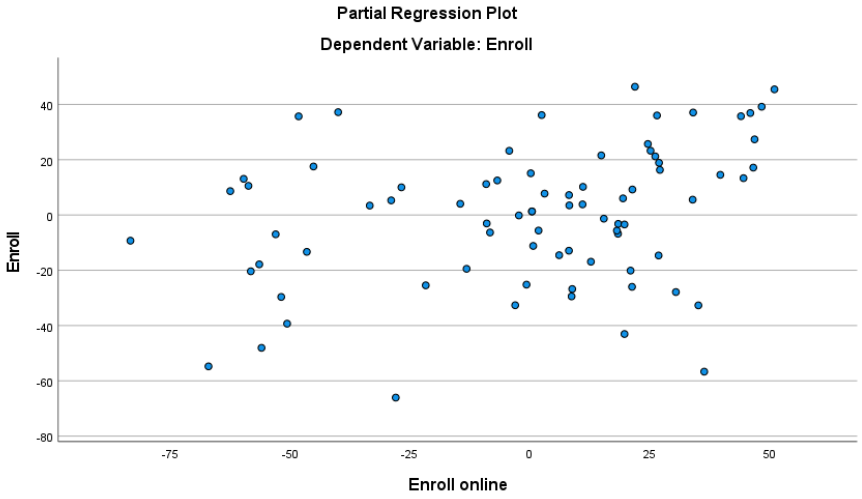
Residual Statistics

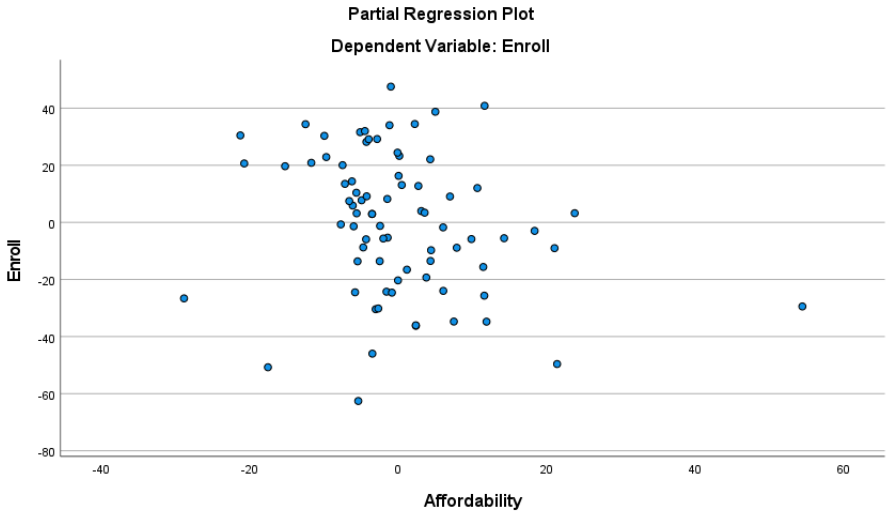
Residuals Statistics[a]

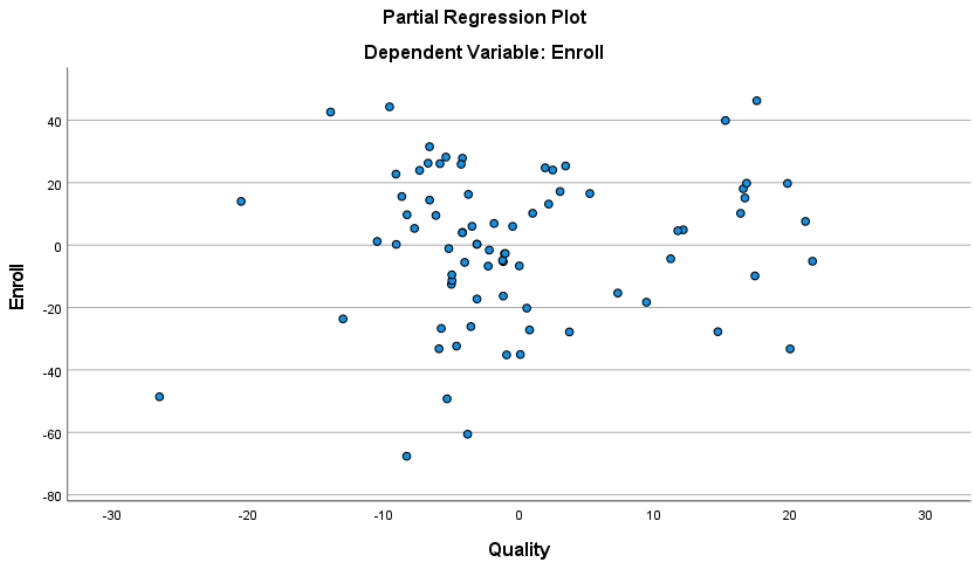
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	2.37	114.83	68.75	20.175	78
Std. Predicted Value	-3.290	2.284	.000	1.000	78
Standard Error of Predicted Value	3.370	17.048	7.598	2.420	78
Adjusted Predicted Value	4.46	116.83	68.30	20.735	78
Residual	-65.242	47.057	.000	23.726	78
Std. Residual	-2.622	1.891	.000	.953	78
Cook's Distance	.000	.364	.019	.047	78
Centered Leverage Value	.006	.457	.090	.071	78

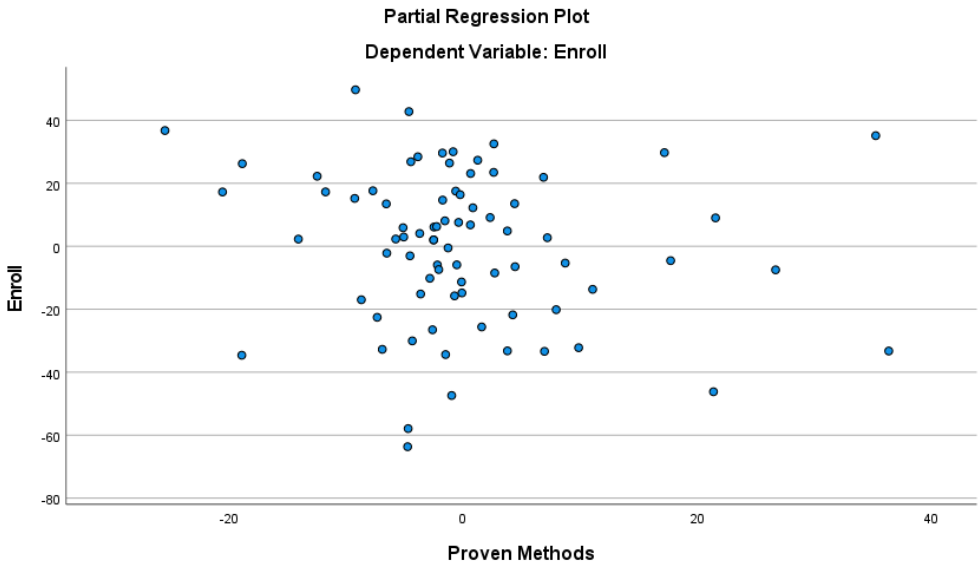
a. Dependent Variable: Enroll

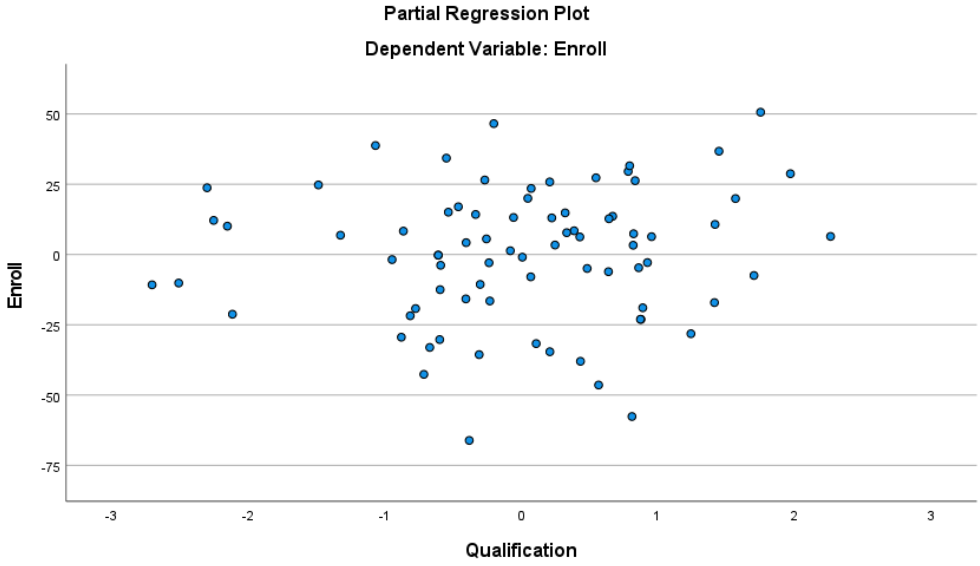


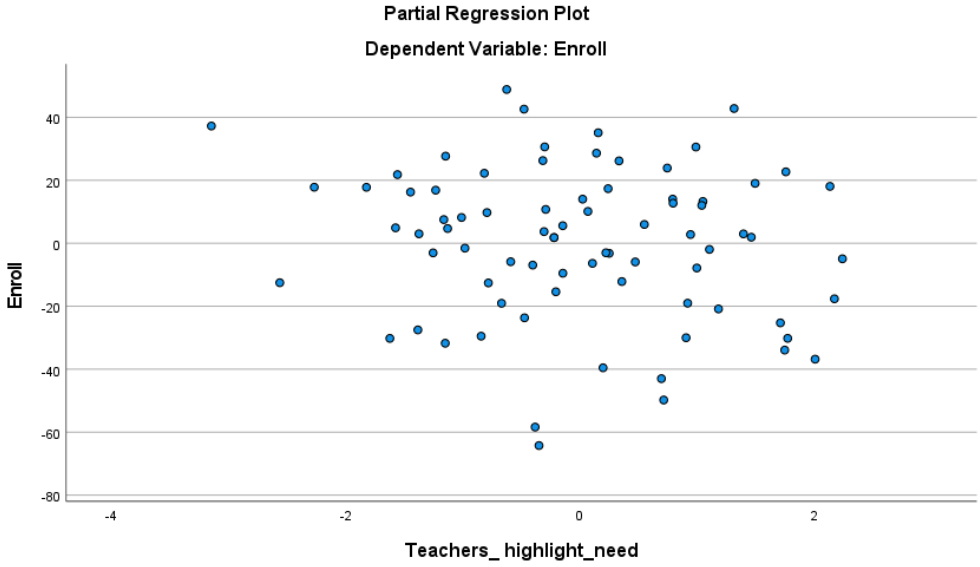

Partial Regression Plot
Dependent Variable: Enroll
Enroll
40
20
0
-20
-40
-60
-80
-75
-50
-25
0
25
50
Enroll online

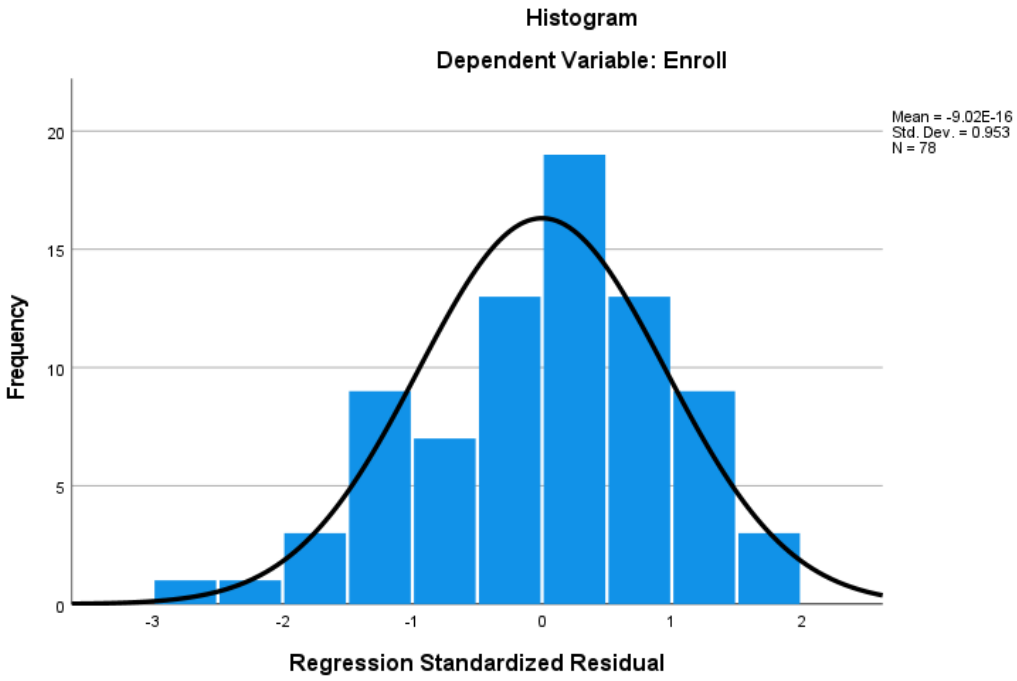

Partial Regression Plot
Dependent Variable: Enroll
Enroll
40
20
0
-20
-40
-60
-80
-40
-20
0
20
40
60
Affordability

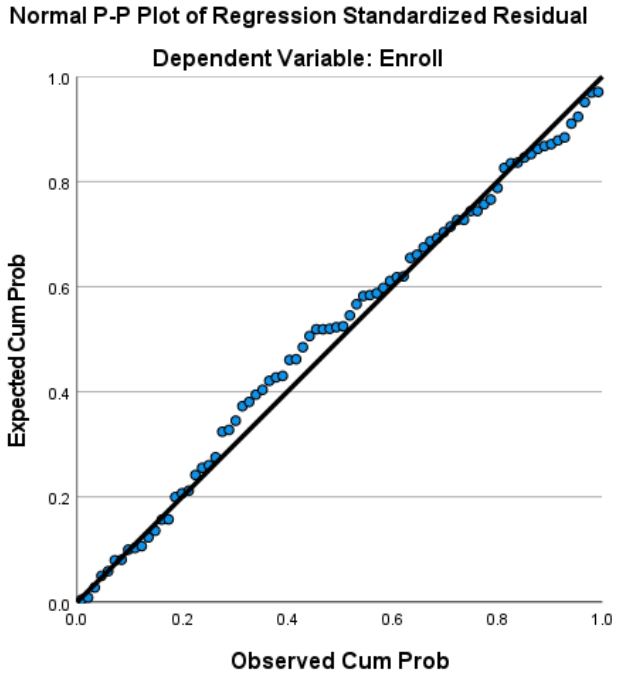

Partial Regression Plot
Dependent Variable: Enroll
Enroll
40
20
0
-20
-40
-60
-80
-30
-20
-10
0
10
20
30
Quality


Partial Regression Plot
Dependent Variable: Enroll
Enroll
40
20
0
-20
-40
-60
-80
-20
0
20
40
Proven Methods


Partial Regression Plot
Dependent Variable: Enroll
Enroll
50
25
0
-25
-50
-75
-3
-2
-1
0
1
2
3
Qualification


Partial Regression Plot
Dependent Variable: Enroll
Enroll
40
20
0
-20
-40
-60
-80
-4
-2
0
2
Teachers_ highlight_need


Histogram
Dependent Variable: Enroll
Mean = -9.02E-16
Std. Dev. = 0.953
N = 78
Frequency
20
15
10
5
0
-3
-2
-1
0
1
2
Regression Standardized Residual


Normal P-P Plot of Regression Standardized Residual
Dependent Variable: Enroll
Expected Cum Prob
1.0
0.8
0.6
0.4
0.2
0.0
0.0
0.2
0.4
0.6
0.8
1.0
Observed Cum Prob

9 Appendix C – Business Plan

9.1 Business Model Canvas

Business Model Canvas: Kumon Amberfield

Date: Feb-2023

Key Partners	Key Activities	Value Propositions	Customer Relationships	Customer Segments
• Kumon Education SA (PTY) Ltd • Schools with a 7km radius • Local banks	• Learner assessments • Assistance with daily worksheets • Marking of worksheets and ensuring corrections are done • Mentorship • Data capturing • Marketing **Key Resources** • Landlord • Local banks • Kumon Franchise support • Kumon area manager • Instructors	• Curriculum that solidifies basics • Kumon method proven to yield results • Improving confidence through mentorship • Convenient online service • For remedial, catch-up, maintainance and going beyond grade levels • Progress tracking and continuous parental engagement	Quarterly progress report review with parents Tracking school progress Adjusting levels based on individual learner progress Quarterly service review and feedback from parents **Channels** • In-center & online service • Social media advertising • Electronic marketing • Schools online platforms • Presentation at schools • Franchise marketing • Word of mouth	<u>Remedial</u> • Learners with learning difficulties, poor outcomes, require catch-up. All ages <u>Maintain and stay ahead</u> • Learners performing well but want to go beyond grade levels. All ages.

Cost Structure	Revenue Streams

• Royalty fees
• Premises rental
• Salaries
• Training
• Utilities
• Insurance & security
• Marketing
• Material shipping costs
• Other admin expenses at 1% of sales
  ○ Phone
  ○ Internet
  ○ ICT
  ○ Office equipment service
	• Once-off enrolment fee
	• Monthly fees per subject
	• Mentorship fee

9.2 Pro forma income statement

KUMON AMBERFIELD											
PRO FORMA INCOME STATEMENT											
	Y0	**Y1**	**Y2**	**Y3**	**Y4**	**Y5**	**Y6**	**Y7**	**Y8**	**Y9**	**Y10**
Years	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**
Months	**4**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**
Sales	**0**	**1,432,200**	**1,683,297**	**1,931,474**	**2,230,853**	**2,576,635**	**2,976,013**	**3,437,295**	**3,970,076**	**4,585,438**	**4,776,619**
Enrolment fees	**0**	115,500	24,255	15,281	17,649	20,385	23,544	27,194	31,409	36,277	0
Monthly fees	**0**	1,316,700	1,659,042	1,916,194	2,213,204	2,556,250	2,952,469	3,410,101	3,938,667	4,549,161	4,776,619
Total overheads	**583,141**	**1,176,491**	**1,223,733**	**1,318,273**	**1,551,713**	**1,657,692**	**1,774,163**	**2,066,278**	**2,250,073**	**2,488,211**	**2,596,385**
Salaries and wages	32,320	424,200	436,926	450,543	576,469	599,854	624,876	788,066	826,262	867,132	910,864
Operating costs	463,695	116,566	129,094	131,237	144,121	136,281	139,254	153,083	146,319	150,520	152,862
Administrative costs		71,604	16,590	19,162	22,132	25,563	29,525	34,101	39,387	45,492	47,766
Selling costs	53,460	463,120	540,122	616,332	707,990	813,661	935,508	1,076,028	1,238,104	1,425,067	1,484,893
Depreciation	33,667	101,000	101,000	101,000	101,000	82,333	45,000	15,000			
Profit before interest and tax	**-583,141**	**255,709**	**459,564**	**613,201**	**679,140**	**918,942**	**1,201,850**	**1,371,017**	**1,720,003**	**2,097,227**	**2,180,233**
Interest		100,309	83,161	63,526	41,044	15,303					
Tax @ 27%		43,512	105,393	153,909	178,667	253,019	336,518	383,885	481,601	587,224	610,465
Net profit	**-583,141**	**111,888**	**271,011**	**395,766**	**459,429**	**650,620**	**865,332**	**987,132**	**1,238,402**	**1,510,003**	**1,569,768**
Retained earnings - opening	0	-583,141	-471,253	-200,242	195,524	654,953	1,305,573	2,170,905	3,158,038	4,396,440	5,906,443
Retained earnings - closing	**-583,141**	**-471,253**	**-200,242**	**195,524**	**654,953**	**1,305,573**	**2,170,905**	**3,158,038**	**4,396,440**	**5,906,443**	**7,476,212**

Pro forma statement of financial position

KUMON AMBERFIELD **PRO FORMA STATEMENT OF FINANCIAL POSITION**											
	Y0	**Y1**	**Y2**	**Y3**	**Y4**	**Y5**	**Y6**	**Y7**	**Y8**	**Y9**	**Y10**
Years	**Dec-23**	**Dec-24**	**Dec-25**	**Dec-26**	**Dec-27**	**Dec-28**	**Dec-29**	**Dec-30**	**Dec-31**	**Dec-32**	**Dec-33**
Months	**4**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**
Franchise Cost	80,000	80,000	80,000	80,000	80,000	80,000	80,000	80,000	80,000	80,000	80,000
Office equipment	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000
Fixtures and fittings	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000
	580,000	580,000	580,000	580,000	580,000	580,000	580,000	580,000	580,000	580,000	580,000
Accumulated depreciation	33,667	134,667	235,667	336,667	437,667	520,000	565,000	580,000	580,000	580,000	580,000
FIXED ASSETS	546,333	445,333	344,333	243,333	142,333	60,000	15,000				
Stock											
Debtors		117,715	138,353	158,751	183,358	211,778	244,604	282,517	326,308	376,885	392,599
Bank and cash		136,951	352,912	674,235	1,032,530	1,533,795	2,411,301	3,375,520	4,570,132	6,029,558	7,583,613
CURRENT ASSETS		254,666	491,265	832,986	1,215,888	1,745,573	2,655,905	3,658,038	4,896,440	6,406,443	7,976,212
TOTAL ASSETS	**546,333**	**699,999**	**835,599**	**1,076,319**	**1,358,221**	**1,805,573**	**2,670,905**	**3,658,038**	**4,896,440**	**6,406,443**	**7,976,212**
Creditors											
Bank overdraft											
Short term portion of long term loans	118,263	135,411	155,045	177,527	203,268						
CURRENT LIABILITIES	118,263	135,411	155,045	177,527	203,268						
Working Capital Loan	629,475	535,184	427,222	303,606	162,065						
Other long term loans		136,067	108,619	77,190	41,204						
Short term portion of long term loans	-118,263	-135,411	-155,045	-177,527	-203,268						
LONG TERM LIABILITIES	511,212	535,841	380,795	203,268							
OUTSIDE FUNDS	629,475	671,252	535,841	380,795	203,268						

Share capital											
Shareholders' funds	500,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000
Retained income	-583,141	-471,253	-200,242	195,524	654,953	1,305,573	2,170,905	3,158,038	4,396,440	5,906,443	7,476,212
SHAREHOLDERS' FUNDS	-83,141	28,747	299,758	,695,524	1,154,953	1,805,573	2,670,905	3,658,038	4,896,440	6,406,443	7,976,212
TOTAL FUNDS	**546,333**	**699,999**	**835,599**	**1,076,319**	**1,358,221**	**1,805,573**	**2,670,905**	**3,658,038**	**4,896,440**	**6,406,443**	**7,976,212**

KUMON AMBERFIELD											
Years	**Dec-23**	**Dec-24**	**Dec-25**	**Dec-26**	**Dec-27**	**Dec-28**	**Dec-29**	**Dec-30**	**Dec-31**	**Dec-32**	**Dec-33**
Months	**4**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**
Ratios											
Turnover/Total assets	0%	230%	219%	202%	183%	163%	133%	109%	93%	81%	66%
Return on assets	-213%	46%	88%	139%	187%	308%	452%	506%	565%	596%	567%
Shareholders' return	1403%	-411%	165%	80%	50%	44%	39%	31%	29%	27%	22%
Debt Service Cover Ratio	-	0,9	2,0	2,5	2,6	3,3					
Shareholders' funds to total assets	-15%	4%	36%	65%	85%	100%	100%	100%	100%	100%	100%
Current ratio	0%	188%	317%	469%	598%						

Pro forma cash flow statement

KUMON AMBERFIELD											
PRO FORMA CASH FLOW STATEMENT											
	Y0	**Y1**	**Y2**	**Y3**	**Y4**	**Y5**	**Y6**	**Y7**	**Y8**	**Y9**	**Y10**
Years	**Dec-23**	**Dec-24**	**Dec-25**	**Dec-26**	**Dec-27**	**Dec-28**	**Dec-29**	**Dec-30**	**Dec-31**	**Dec-32**	**Dec-33**
Months	**4**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**
Net profit before interest and tax incl sundry income	**-583,141**	**255,709**	**459,564**	**613,201**	**679,140**	**918,942**	**1,201,850**	**1,371,017**	**1,720,003**	**2,097,227**	**2,180,233**
+ Depreciation / Amortisation	33,667	101,000	101,000	101,000	101,000	82,333	45,000	15,000	0	0	0
EBITDA incl Sundry Income	-549,475	356,709	560,564	714,201	780,140	1,001,276	1,246,850	1,386,017	1,720,003	2,097,227	2,180,233
Working capital changes		**-117,715**	**-20,638**	**-20,398**	**-24,606**	**-28,420**	**-32,826**	**-37,914**	**-43,790**	**-50,578**	**-15,713**

Increase/ Decrease in inventory											
Increase/ Decrease in trade and other receivables		-117,715	-20,638	-20,398	-24,606	-,28,420	-32,826	-37,914	-43,790	-50,578	-15,713
Increase/ Decrease in trade and other payables											
Cash generated from operations	**(549,475)**	**238,994**	**539,926**	**693,803**	**755,534**	**972,855**	**1,214,025**	**1,348,104**	**1,676,213**	**2,046,649**	**2,164,520**
- Normal tax paid	-	-43,512	-105,393	-153,909	-178,667	-253,019	-336,518	-383,885	-481,601	-587,224	-610,465
- Additions to fixed assets (incl Reinvestment of depreciation)	-580,000										
Cash Flow available for debt service	**-1,129,475**	**195,482**	**434,533**	**539,894**	**576,867**	**719,836**	**877,507**	**964,219**	**1,194,612**	**1,459,426**	**1,554,055**
+/- Proceeds of Working Capital Loan	629,475	-94,290	-107,962	-123,617	-141,541	-162,065					
+/- Proceeds of other Long Term loans		136,067	-27,449	-31,429	-35,986	-41,204					
- Interest paid on long term loans		-100,309	-83,161	-63,526	-41,044	-15,303					
Cash Flow available after debt before Equity	**-500,000**	**136,951**	**215,962**	**321,322**	**358,295**	**501,265**	**877,507**	**964,219**	**1,194,612**	**1,459,426**	**1,554,055**
Other Activities											
Cash Flow Available for Equity	**-500,000**	**136,951**	**215,962**	**321,322**	**358,295**	**501,265**	**877,507**	**964,219**	**1,194,612**	**1,459,426**	**1,554,055**
Equity											
+/- Proceeds from shareholders loans	500,000										
+/- Dividends received(Paid)											
Net increase in cash and cash equivalents	**0**	**136,951**	**215,962**	**321,322**	**358,295**	**501,265**	**877,507**	**964,219**	**1,194,612**	**1,459,426**	**1,554,055**
Cash and cash equivalents at beginning of period	0	0	136,951	352,912	674,235	1,032,530	1,533,795	2,411,301	3,375,520	4,570,132	6,029,558
Cash and cash equivalents at end of period	0	136,951	352,912	674,235	1,032,530	1,533,795	2,411,301	3,375,520	4,570,132	6,029,558	7,583,613

9.3 Managing Director Profile



Contact

Phone
082 718 6037

Email
nokochips@gmail.com

Address
Centurion, Gauteng, South Africa, 0157

Education

2004
Matric
Motse Maria High School

2010
BEng Chemical Engineering
University of Pretoria

2017
Post Graduate Diploma in Business Administration
Wits Business School

2021 - current
MBA
Wits Business School

Expertise

Analytical and critical thinking
●●●● o Very good

Interpersonal communication
●●●● o Very good

Written communication
●●●● o Very good

Planning and coordination
●●●● o Very good

Multitasking abilities
●●●● o Very good

Noko Machipi

Dealmaker

I am a proficient and professional dealmaker with four years of experience at the IDC and six years experience in minerals processing. My career journey from engineering to finance has equipped me with analytical, critical thinking and creative problem-solving skills to ensure informed decision making. In addition, my excellent interpersonal and communications skills enables me to leverage collaboration and achieve long-lasting results for the organisation. I challenge myself to excel at what I do and never stop learning.

Experience

Dec 2019 – Current
Industrial Development Corporation of SA
Dealmaker

- Similar responsibilities as Senior Business Analyst

Dec 2018 – Nov 2019
Industrial Development Corporation of SA
Snr. Business Analyst

- Evaluate applications for finance through due diligence investigations
- Design and negotiate the financial, EHS, legal and other relationships between the client and IDC for the specific deal
- Prepare and submit basic assessments and comprehensive credit proposals that meets the IDC funding requirements
- Maintain meaningful relationships with enquirers, applicants and portfolio clients in conjunction with different support functions in the IDC
- Effectively interact with different SBU's and departments in order to fulfill the process requirements related to any specific business transaction
- Manage and enhance the levels of service and communication to ensure the provision of client service excellence

Feb 2018 – Nov 2018
Industrial Development Corporation of SA
Business Analyst

- Participate in due diligence teams, on specific discipline under training
- Risk identification and mitigation in the context of training on a specific discipline during a due diligence event
- Effectively interact with different SBU's and departments to fulfill the process requirements related to any specific transaction, under the guidance of senior members of the team
- Manage and enhance the levels of service and communication to ensure the provision of client service excellence

Jul 2014 – Jan 2018
Outotec RSA
Proposals Engineer, Proposals Manager

- Lead dewatering proposals preparation for Sub Saharan Africa
- Collaborate with technical departments and product managers
- Ensure that commercial requirements and deviations clearly defined
- Follow up on submitted proposals
- Review and analyse profitability of service projects

Aug 2011 – Jun 2014
Outotec RSA
Sales Engineer, Process Engineer, Service Sales Metallurgist

10 Appendix D – Abbreviations

PIRLS - Progress in International Reading Literacy Study

ANA - Annual National Assessment

CDE – Center for Development and Enterprise

DBE - Department of Basic Education

GDE – Gauteng Department of Education

IEB - Independent Examination Board

TSD - Tshwane South District

DSD - The Department of Social Development

4IR – Fourth Industrial Revolution

ICT – Information Communication Technology

RTI - Response to Intervention

CAI - Computer-assisted instruction

ASS - afterschool supplementary service

SW - Somewhat