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The relationship between small business owners' practice of effectuation and business growth in Gauteng townships

Authors:
Michael Nyoni[1]
Menisha Moos[1]

Affiliations:
[1]Department of Business Management, Faculty of Economic and Management Sciences, University of Pretoria, Pretoria, South Africa

Corresponding author:
Michael Nyoni,
michaeln@twasa.co.za

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Background: With the high unemployment and increasing levels of poverty in South Africa (SA), especially in the townships, the start-up and growth of township-owned small businesses have been proposed as the solution to address this phenomenon. The extant causation approach has had its challenges to develop township-owned small businesses because of resource constraints. Consequently, the emergent effectuation approach is worth investigating.

Aim: This study aimed to determine if the practice of effectuation and the effectuation constructs (experimentation, affordable loss, flexibility and pre-commitments) by a non-expert township small business owner (NTSBO) would result in business growth (assets, sales and employment growth) and if the industries the businesses are operating in are a moderating variable.

Setting: Primary research was conducted in the three Gauteng townships of Alexandra, Honeydew and Soweto in SA because townships contribute more than 38% towards South Africa's gross domestic product (GDP).

Methods: A quantitative study of 728 NTSBOs was conducted using an interview-administered structured questionnaire. Non-probability sampling methods were used, and the data were analysed using structural equation modelling (SEM).

Results: The study found that effectuation and its components of experimentation and flexibility had statistically significant relationships with financial business growth (FBG). Industry did not moderate these relationships that were found. Experimentation and flexibility probably empowered the NTSBO to adapt to the ever-changing and unpredictable township business environment they operate in. Neither effectuation nor its components demonstrated statistically significant relationships with nonfinancial business growth.

Conclusion: The findings of this study may inform policymakers, government and financial institutions that the effectuation approach can be an option incorporated for the training, funding and/or support of township small business owners.

Keywords: effectuation; business growth; township; experimentation; affordable loss; flexibility; pre-commitments.

Introduction

Emerging economies, such as that of South Africa (SA), have high resource or means constraints with respect to attributes, knowledge, networks and financial resources (Ślusarczyk & Grondys 2019:2) leveraged by entrepreneurs to start and grow their businesses. These resource constraints faced by entrepreneurs are even higher amongst black people as compared with other races such as white people, Indians and mixed race in SA because of increased poverty amongst black people (Burger et al. 2017:13). These poverty-stricken black people predominantly populate the townships (Boachie & Ross 2020:2), including the non-expert township small business owner (NTSBOs).

The extant or traditional approach for entrepreneurial development and support is based on the causation approach (Roach, Ryman & Makani 2016:215) of drawing up a business plan and then seeking funding (means) to implement the business plan. This approach is plagued, amongst others, by access to finance amongst small business owners (Lloyd 2018:276). An inclination towards the alternative approach of effectuation may prove a worthy remedy, given Sarasvathy's (2001:245) position that it starts with the means at hand to determine the business that can be created. This emergent decision logic of effectuation was originally found amongst 27 United States of America (USA) based expert entrepreneurs with resource constraints. Subsequently, the

effectuation theory has been tested on nascent entrepreneurs (non-expert), although they were entrepreneurship university students pursuing undergraduate and post-graduate studies in a simulated business environment (Agogué, Lundqvist & Middleton 2015:7). In the specific South African context, an effectuation qualitative study found that township-based small business owners in the Gauteng and Vaal areas who were funded by a sponsor and practised effectual decision-making were more successful than their counterparts who did not practise effectuation (Le Roux & Pretorius 2015:101). The knowledge gap this study addressed was whether effectuation practised by non-experts based in the townships, particularly with low education levels, could result in business growth. Another gap was whether the industries they operated in (retail, services and manufacturing) moderated the relationships between effectuation or its component constructs and business growth.

Therefore, to guide the study, the following research objectives were investigated to determine:

- The nature of the relationship, if any, between the practice of effectuation by NTSBOs and business growth.
- The relationships, if any, between each of the four effectuation constructs (experimentation, affordable loss, flexibility and pre-commitments) and business growth.
- If industry moderates the relationships that effectuation or individual effectuation constructs may have with business growth.

Literature review

Entrepreneur and entrepreneurship

Entrepreneurs have been classified as those individuals who innovate (Planko et al. 2017:615) and also those who do not innovate in starting their business ventures (Welter et al. 2017:7). Schumpeter in the 1930s also defined the entrepreneur as being innovative as opposed to 'following the crowd', and this concept has coined the term 'Schumpeterian entrepreneur' (Cantner, Goethner & Silbereisen 2017:9). The Schumpeterian and similar definitions of an entrepreneur would probably disqualify an NTSBO who imitates another business as an entrepreneur. For purposes of the study, the investigation was based on the NTSBOs to prevent excluding other business owners in the township who may not be innovative.

Entrepreneurship is the creation of a new business, and business is defined as an activity that generates a profit, hence entrepreneurship is about having a profitable business venture (Utomo et al. 2019:235). Township entrepreneurship activity is limited in the township economy compared with the formal economy (Van Rensburg, Telukdarie & Dhamija 2019:4), but higher activities of entrepreneurship are therefore one of the tools that can be used to create jobs (Zwane & Nyide 2017:347). There has been a declined total early-stage entrepreneurial activity (TEA) rate in SA whilst using the extant approaches, including causation (Herrington, Kew & Mwanga 2017:6). For purposes of this article, the focus was on the emergent effectuation approach.

Township environment

The average South African township is described as being affected by severe poverty, crime, overcrowding, unemployment, backyard shacks, illegal electrical connections and poor sanitation (Booyens & Rogerson 2019:258; Preisendoerfer, Bitz & Bezuidenhout 2014:167). Lack of good infrastructure, presence of informal settlements, high school dropout rates and high levels of substance abuse (Manyaka-Boshielo 2017:3) are challenges that face the NTSBO. Despite existing government support initiatives for entrepreneurs (financial and non-financial), most township entrepreneurs are not aware of and cannot access these initiatives (Gwija, Eresia-Eke & Iwu 2014:66). Another challenge is that of township businesses stocking the same products with other stores to sell to the same customers, resulting in lack of differentiation to gain a competitive advantage (Anderson, Chandy & Zia 2016:10).

Non-expert township small business owner

The NTSBOs have limited or no experience in entrepreneurship (St-Jean, Radu-Lefebvre & Mathieu 2018:13). These NTSBOs tend to be necessity-based as they start their business purely out of the need to survive or generate an income to sustain a living (Block et al. 2015:38). Non-expert entrepreneurs also include nascent entrepreneurs and established business owners with less than 15 years' experience (Dew et al. 2009:288). Most NTSBOs have low levels of education (Urban & Ndou 2019:6) and cannot draw up a business plan (Makhitha 2016:259) in line with the extant causation approach to start and grow businesses. They face challenges of accessing resources they need to start and grow their businesses such as finance (Mogashoa & Selebi 2021:9), business licences or permits and an adequately educated workforce, amongst others (Madi 2017:41).

In comparison, the urban small business owners (USBOs) on the other hand are at an advantage, overall. Their customers include white middle class, with higher skills and easier access to internet to read up on the small business owner's offering online via their website or other online technologies (Hikido 2018:2592). The USBOs are more highly skilled, have a better education level and access to finance and other resources required to run a business (Lloyd 2018). In addition, they also have access to qualified workers, good transport network and good communication infrastructure (Njoroge & Bett 2018:125). The USBOs nevertheless also have their own challenges, such as protests because of forced evictions of people in vacant city buildings and removal of street traders from the designated business districts (Tengeh 2016:208–209).

Effectuation

The effectuation theory by Sarasvathy (2001) explicates how resource-poor expert entrepreneurs behave to create a market using their limited means (Arend, Sarooghi & Burkemper 2015:2). Welter, Mauer and Wuebker (2016:6) contend that the emergence of the effectuation theory is linked to the realisation that the behaviours of some entrepreneurs in the real world

could not be explained by causation. The four principles or constructs of effectuation are experimentation, affordable loss, flexibility and pre-commitments (Urban & Heydenrych 2015:127). Experimentation is when a business continuously tries out different business models until a viable business model is found (Reymen et al. 2016:597) to cope with changes in the market and competition (Guo, Suo & Ahlstrom 2016:534). Affordable loss relates to what the business can afford to lose as opposed to trying to calculate the expected return (causation) in an uncertain environment (Futterer, Schmidt & Heidenreich 2018:67). Flexibility is where the business accepts surprises and leverages contingencies in their business venture (Eyana, Masurel & Paas 2017) as opposed to seeing contingencies negatively or trying to prevent contingencies (Stroe, Parida & Wincent 2018:266). Pre-commitments are when self-selected stakeholders such as customers, suppliers and other organisations commit and contribute towards the success of the business venture (Smolka et al. 2016:7), thereby increasing the means available to make the business venture worth pursuing (Mansoori & Lackéus 2020:805). Research on the use of effectuation in SA by nascent or NTSBOs has been carried out (De Villiers Scheepers, Boshoff & Oostenbrink 2018:26; Urban 2018), but the sample was mostly made up of respondents with a post-secondary qualification such as a diploma or a degree.

Effectuation starts with the means at hand to determine the business that can be created, such as when a chef prepares a meal based on the available ingredients (Sarasvathy 2001:245). Causation, nonetheless, is predictive, linear, prescriptive and planned by following the linear process of identifying the opportunity, concept development, evaluation and refinement of the opportunity, acquisition of resources and then commencement of the business (Qureshi, Sheikh & Israr 2016:622). The business is determined first (the meal) and then the means (the ingredients) are sourced in causation. The differences between causation and effectuation are shown in detail in Table 1.

Business growth

Organic business growth is internal growth, which can happen through the development of new or existing markets or development of new or existing products resulting in increased sales (Achtenhagen, Brunninge & Melin 2017:459), assets and employee numbers. Use of financial indicators to measure business growth is more objective and eliminates respondent bias as compared with the use of non-financial indicators (Gerschewski & Xiao 2015:11). The two strongest determinants of business growth or performance are increases in sales and employees (Yeboah 2015:6). Eshima and Anderson (2017:771) used sales (revenue) growth and assets growth as financial indicators of measuring business growth. In essence, the business growth can be topologised as financial business growth (FBG) or non-financial business growth (NFBG). For purposes of the study, FBG was measured on the basis assets and sales whilst an NFBG was measured by employment growth.

Hypotheses development

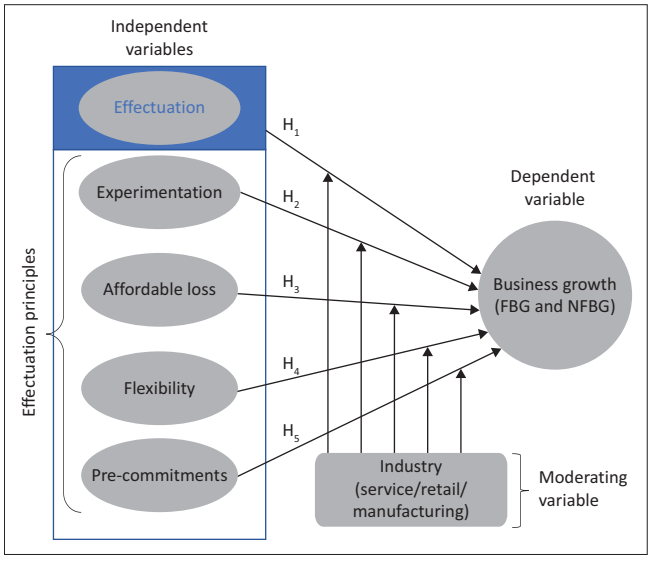
From the literature, the study formulated hypotheses and depicted these in Figure 1. Literature has proposed that effectuation allows the business to manage the uncertainty of predicting the future into an opportunity by exploiting contingencies (Deligianni, Voudouris & Lioukas 2017:3). This advantage of exploiting contingencies when effectuation is practised should give the NTSBO the opportunity to grow their business. Having discussed the challenges of resources that the township small business owner has in starting and growing their business, effectuation could be the solution to this because they work with the means at hand. The study hence posited that:

- H_{1a}: Effectuation positively affects FBG of the NTSBO's business venture.
- H_{1b}: Effectuation positively affects NFBG of the NTSBO's business venture.

Experimentation by NTSBOs may result in their businesses growing, especially if it is difficult to predict the future (Welter & Kim 2018:24). A number of township street traders tend to sell the same or similar products as their competitors. Experimentation by the township small business owner may create new products and services, which will lead to business growth (Altinay et al. 2016:9). Experimentation allows the township business to cope with changes in the market and competition, thereby improving business growth (Guo et al. 2016:534). The study hypothesised that:

- H_{2a}: Experimentation positively affects FBG of the NTSBO's business venture.
- H_{2b}: Experimentation positively affects the NFBG of the NTSBO's business venture.

Entrepreneurs who focus on survival (NTSBOs) are risk-averse and focus on affordable loss as opposed to business growth or gains (Wennberg, Delmar & McKelvie 2016:9). According to Roach et al. (2016:229), affordable loss



FBG, financial business growth; NFBG, non-financial business growth.

FIGURE 1: Conceptual model of the relationship between effectuation and business growth.

TABLE 1: Characteristics that define effectuation vs causation approach.

Principle	Effectuation	Causation
Experimentation	Control of an unpredictable future as the belief is that the future is unpredictable.	There is prediction of the future as the belief is that the future is predictable.
Affordable loss	How much of a loss the entrepreneur is prepared to make in the business venture.	Expected return that the entrepreneur will make from the business venture.
Flexibility	Exploit contingencies as they present themselves, 'lemonade principle' that 'when life gives you lemons, make lemonade'.	Exploitation of pre-existing knowledge of the business environment and do not embrace surprises as they occur.
Pre-commitments	Strategic alliances or partnering to also further reduce the affordable loss.	Competitor analysis is the strong focus.

Source: Adapted from Jiang, Y. & Rüling, C., 2017, 'Opening the black box of effectuation processes: Characteristics and dominant types', *Entrepreneurship Theory and Practice* 43(1), 1–32. https://doi.org/10.1177/1042258717744204

contributes positively towards the performance (business growth) of the small business. Nevertheless, in a resource-constrained country such as SA, affordable loss may lead to survival and growth of the business (Eyana et al. 2017) and so it is hypothesised that:

- H_{3a}: Affordable loss negatively affects the business growth (assets and sales) of the NTSBO's business venture.
- H_{3b}: Affordable loss negatively affects the business growth (employment growth) of the NTSBO's business venture.

Flexibility creates competitiveness because of the ability to assess and adapt to these changes through the flexible use of resources (Vedanthachari & Baldock 2015:2) by the NTSBO. A business ventures' success in the ever-changing business environment will be facilitated by its ability to adapt to the changes as they occur (Ivanov 2017:6). Kodak's demise was partly because of its failure to adapt to the changing needs of its customers and the disruptive innovation that was happening around it, as opposed to Fujifilm (Ho & Chen 2018:14). The study hypothesised that:

- H_{4a}: Flexibility contributes positively towards FBG of the NTSBO's business venture.
- H_{4b}: Flexibility contributes positively towards NFBG of the NTSBO's business venture.

Palmié et al. (2019:99) stated that the pre-commitments could be a disadvantage by limiting the resources that the NTSBO commits, because there will be other partners also contributing, therefore resulting in a less bold approach. Pre-commitments were found to have a strong positive relationship with the financial performance of an organisation (Rizvi, Querishi & Saeed 2018:16). Hence the study posited that:

- H_{5a}: There is a positive relationship between the adoption of the pre-commitments and FBG of the NTSBO's business venture.
- H_{5b}: There is a positive relationship between the adoption of the pre-commitments and NFBG of the NTSBO's business venture.

Methodology

The primary research objective was to determine the nature of the relationship, if any, between effectuation and business growth. The secondary research objective was to investigate the relationships between the four effectuation constructs, which are experimentation, affordable loss, flexibility and pre-commitments with business growth. The study also investigated if the service, retail and manufacturing industries were moderating variables to the relationships between effectuation and effectuation constructs with business growth, if any.

Research design

The research philosophy selected was positivism, as the research was quantitative and empirical. Research strategy used was the survey, because a structured questionnaire that was interviewer-administered was used to collect data from 800 small business owners in a standardised manner in the township. Mono method of a quantitative study was the chosen research choice as only the quantitative method was sufficient to investigate the set research objectives. The time horizon of the data collection was cross-sectional as data were collected once at a specific point in time.

The questionnaire by Chandler et al. (2011:382) that tested effectuation practice was adapted by adding two screening questions to exclude expert respondents from participating. The two questions asked (1) if the respondents had 15 years' experience or more of running a business and (2) if they had run two or more businesses. If both questions had been answered with a 'yes', these respondents would be excluded from the study as they would be deemed to be experts. The study also added business growth indicators (Adams et al. 2014:4; Yeboah 2015:6) and industry type. After the design of the research was completed, the implementation of the study commenced with non-probability sampling (purposive and snowball sampling). The choice for non-probability sampling was because there was no reliable database of township small business owners to apply simple random sampling to infer findings to the population.

Research method

After completing the pilot study with 30 respondents, data were collected in the field using interviewer-administered questionnaires from NTSBO. The following characterised the data collected:

- A total of 728 questionnaires were accurately and completely collected from the 800 respondents who were planned for the interview.
- Completion rate was 91%.

The questionnaire used a five-point Likert scale that ranged from 'strongly disagree' (1) to 'strongly agree' (5) to measure the four effectuation constructs and the business growth indicators of assets and sales growth. Business growth indicator of employment was based on an interval scale and the responds

stated the number of employees at start-up and currently. This was used to determine if NFBG had occurred in that period.

Research questionnaire

Effectuation practice by NTSBO was measured by splitting effectuation into its four effectuation constructs, and business growth was also measured as per Table 2.

Data analysis

The questionnaire was first tested in the field through a pilot study with only 30 respondents to verify if it would reliably be appropriate for the objectives of the study. Data validity and reliability relates to trustworthiness and accuracy of the findings, instrument and data (Bernard 2017:53). This study verified that the instrument used ensured validity by using an existing questionnaire that had passed tests for validity in previous studies. The measurement model (questionnaire) was further evaluated for validity and reliability using factor analysis (confirmatory factor analysis, or CFA).

The CFA verifies the number of underlying latent variables (Lewis 2017:239) and observed variables in an instrument. Standardised factor loadings are statistically significant for loadings > 0.3 for sample sizes > 350 (Sonita, Jomnonkwao, Champahom, Beeharry & Ratanavaraha 2020:53). This was the case in the study where standardised factor loadings between the construct and their indicators (variables) were all loading above 0.3 except for one loading at 0.3. The CFA was used in the study to confirm the pre-defined factor structure (Çokluk & Koçak 2016:539), and it confirmed that the predicted or hypothesised structure was a good fit to the data collected only after excluding flexibility statement 11 (flexibility construct) and pre-commitments statement 16 (pre-commitments construct).

The Pearson correlation coefficient is a commonly used coefficient that measures the direction (positive or negative) and strength (-1 to 1) of a correlation between two variables that are measured on the same scale (Akoglu 2018:91–92). According to Schober, Boer and Schwarte (2018:1765), the correlation coefficient from 0.00 to 0.10 indicates a negligible correlation, 0.10 to 0.39 reflects a weak correlation, 0.40 to 0.69 signals a moderate correlation, 0.70 to 0.89 implies a strong correlation and 0.90 to 1.00 is a very strong correlation. The study investigated the strengths between the independent variables (effectuation and effectuation constructs) and the dependent variable of business growth.

Structural equation modelling (SEM) (including first and second order) was used in this study to evaluate the conceptual model proposed and tested causal hypotheses between effectuation as a second order construct and effectuation constructs (first order) with business growth. An advantage of SEM is that the individual items can be grouped under a construct and the relationships with other constructs (also grouped items) can be investigated, making SEM time-effective. Incorrect inferences by measurement errors are fully accounted for by SEM compared with regression and path analysis (Savalei 2019:352).

Ethical considerations

Approval to conduct the study was granted by the Research Ethics Committee of the University of Pretoria, reference number: EMS107/19.

Research findings

Descriptive and inferential statistics of data collected from the 728 respondents are presented in this section.

TABLE 2: Statements and questions used with respondents.

Construct	Question number	Item statements and questions
Experimentation	Q3	We experimented with different products and business models.
	Q4	The product or service we now provide is essentially the same as originally conceptualised.
	Q5	The product or service that we now provide is substantially different than we first imagined.
	Q6	We tried a number of different approaches until we found a business model that worked.
Affordable loss	Q7	We were careful not to commit more resources than we could afford to lose.
	Q8	We were careful not to commit more money than we were willing to lose with our initial idea.
	Q9	We were careful not to risk so much money that the company would be in real trouble financially if things didn't work out.
Flexibility	Q10	We allowed the business to evolve as opportunities emerged.
	Q11	We adapted what we were doing to the resources we had.
	Q12	We were flexible and took advantage of opportunities as they arose.
	Q13	We avoided courses of action that restricted our flexibility and adaptability.
Pre-commitments	Q14	We used a substantial number of agreements with customers, suppliers and other organisations and people to reduce the amount of uncertainty.
	Q15	We used pre-commitments from customers as often as possible.
	Q16	We used pre-commitments from suppliers as often as possible.
Business growth indicators	Q17	There are now more assets in the business since we started.
	Q18	There has been growth in sales since we started
	Q19	How many workers were employed by the business including the owner when it started?
	Q20	How many workers were employed by the business including the owner at 3.5 years old?
	Q21	How many workers are employed by the business including the owner currently?

Source: Adapted from Chandler, G.N., De Tienne, D.R., McKelvie, A. & Mumford, T.V., 2011, 'Causation and effectuation processes: A validation study', *Journal of Business Venturing* 26(3), 375–390. https://doi.org/10.1016/j.jbusvent.2009.10.006; Adams, M., Andersson, L.F., Hardwick, P. & Lindmark, M., 2014, 'Firm size and growth in Sweden's life insurance market between 1855 and 1947: A test of Gibrat's law', *Business History* 56(6), 1–23. https://doi.org/10.1080/00076791.2013.848341; Yeboah, M.A., 2015, 'Determinants of SME growth: An empirical perspective of SMEs in the Cape Coast Metropolis, Ghana', *The Journal of Business in Developing Nations* 14, 1–31.

Descriptive statistics of non-expert township small business owners

Demographics of the NTSBO are presented by gender, age, level of education and the industry in Table 3.

The expectation was that there would have been more women in the sample because according to Statistics South Africa (SSA), (2019:8) 30.1 million (51%) of the population in SA is made up of women. Although there are only 316 (43.4%) female respondents, the plausible reason for the lower representation may be that women do not have the same access to start business ventures, as owning businesses is perceived to be for men (Aneke, Derera & Bomani 2017:38), hence there are more men in the sample. The highest numbers within the sample of NTSBOs are the youth with 262 (36%), and this may be because of high unemployment amongst the youth (Osabohien et al. 2018:52). This high unemployment may probably leave the youth with no option but to become necessity-based township small business owners in order to survive (Kontolaimou, Giotopoulos & Tsakanikas 2016:11).

Literature pointed to the low educational levels of township small business owners (Mashau & Houghton 2015:599). The study confirmed these low educational levels in literature as 555 (76.2%) respondents in the sample did not complete or pass their high school (Matric) whilst 99 (13.6%) respondents had only a high school qualification. Only 74 (9.2%) respondents had a qualification higher than a high school education. The majority of businesses in the sample fall under the retail sector with 605 (83.1%) respondents buying and selling goods to customers in the township.

TABLE 3: Demographics of research sample.

Variable	Frequency (N)	Percentage (%)
Gender		
Male	412	56.6
Female	316	43.4
Age (in years)		
18–34 (Youth)	262	36.0
35–44 (Adult)	239	32.8
45–54 (Adult)	138	19.0
55–64 (Adult)	78	10.7
65+ (Adult)	11	1.5
Level of education		
Non-Matric	555	76.2
Matric	99	13.6
Certificate	48	6.6
Diploma	10	1.4
Degree	8	1.1
Honours	0	0
Master's	1	0.1
PhD	0	0
Other	7	1.0
NTSBO by industry		
Retail	605	83.1
Service	115	15.8
Manufacturing	8	1.1

NTSBO, non-expert township small business owner.

Descriptive statistics for the study's constructs

Experimentation had a mean score of 2.71, meaning overall for the four questionnaire statements, most respondents were leaning towards a neutral response of neither agree nor disagree. This strong leaning towards a neutral response of three is probably because with the first two questionnaire statements (Q3 & Q4 in Table 3), most respondents showed an experimentation decision logic whilst, with the last two questionnaire statements (Q5 & Q6 in Table 3), they did not. Affordable loss had a mean score of 2.38, implying that most respondents disagreed with using this decision logic. Flexibility had a mean score of 3.14, the implication being that most respondents were slightly leaning towards agreeing that flexibility is practised in making decisions in the business by the NTSBO. This was because most respondents had a flexibility decision logic in the two questionnaire statements (Q10 & Q12 in Table 3) and in the other two questionnaire statements (Q11 & Q13 in Table 3), no flexibility decision logic existed. Pre-commitments had a mean score of 1.3, meaning most respondents strongly disagreed with the practice of pre-commitments in their decision-making logic. Financial business growth measured by sales and assets in the business had a mean score of 4.14, implying an agreement that there is business growth with most respondents in this regard. The NFBG measured by increase in employees (current – start) had a mean score of 0.25. This implied that most respondents did not agree that there was business growth when increase in employees' numbers was used as a business growth indicator.

Ten hypotheses that were proposed in the study were tested using both Pearson's correlation coefficient and SEM (inferential statistics). It was justifiable to combine the business growth indicators of assets and sales into a single variable because the Cronbach's alpha for the two questionnaire items linked to assets and sales were highly correlated with a score of 0.9. Experimentation had a statistically significant positive weak correlation ($r = 0.23$, $p < 0.0001$) with FBG and a statistically insignificant correlation ($r = 0.03$, $p = 0.48$) with NFBG, which was measured by employment growth. Flexibility had a statistically significant positive weak correlation ($r = 0.23$, $p < 0.001$) with FBG and a negligible correlation ($r = 0.04$, $p = 0.29$) with NFBG. Pre-commitments had a negligible correlation ($r = 0.03$, $p = 0.45$) with FBG and weak correlation ($r = 0.05$, $p = 0.2$) with NFBG. Affordable loss, however, had a moderate inverse correlation ($r = -0.05$, $p = 0.15$) with FBG and a negligible correlation ($r = 0.07$, $p = 0.07$) with NFBG. No relationship between any of the four effectuation constructs and NFBG was statistically significant. Only experimentation (H_{2a}) and flexibility (H_{4a}) had a weak statistically significant relationship with FBG.

Effects of variables on each other are measured via SEM (Warrington et al. 2018:1229) and the study investigated the effect of effectuation, experimentation, affordable loss, flexibility and pre-commitments variables (first order representation of effectuation) on the financial and non-financial aspects of business growth. In Figure 2,

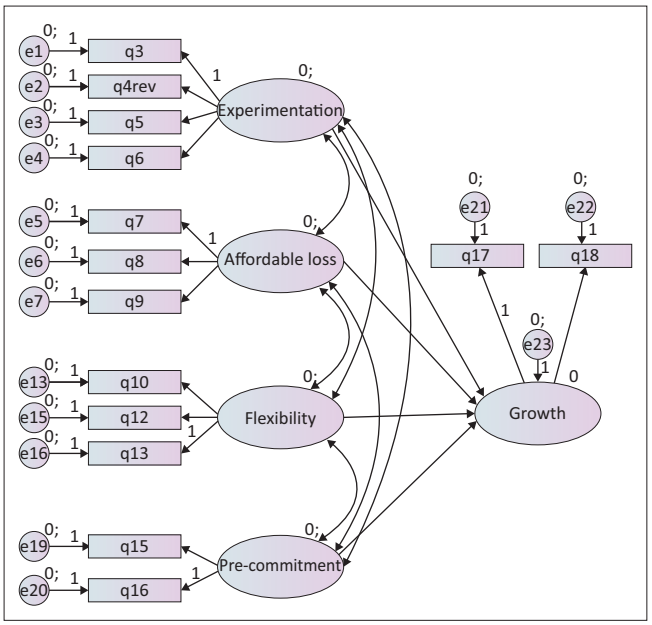


FIGURE 2: Structural equation modelling – relationship between effectuation constructs and financial business growth.

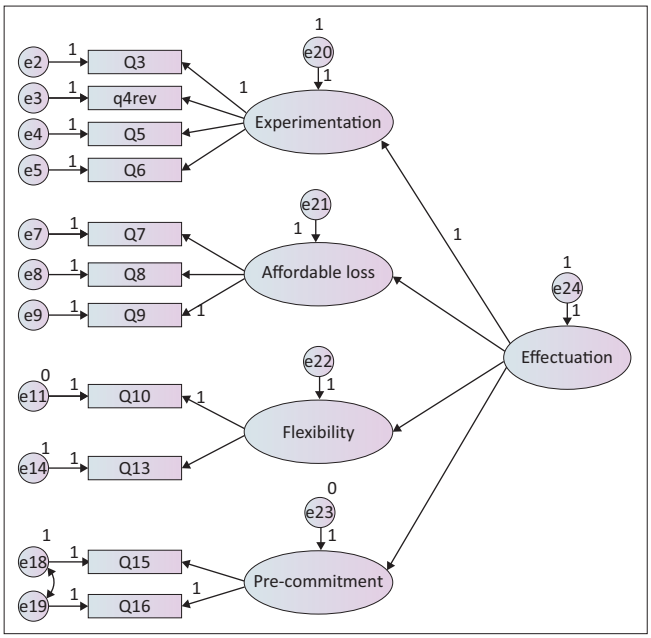


FIGURE 3: Effectuation second-order measurement model.

experimentation, affordable loss, flexibility and pre-commitments have a standardised effect of 0.125, -0.052, 0.198 and 0.012, respectively, with FBG in the NTSBO's business. The SEM model fit summary indicates that the indices of CMIN/DF (3.67), DF (45), CFI (0.978) and TLI (0.97), to mention a few, meet the goodness-of-fit and as such the data fits the model in Figure 3 adequately. When considering for statistical significance where the $p < 0.05$, the only two hypothesised relationships (H_{2a} and H_{4a}) that linked is experimentation and flexibility with FBG were statistically supported.

Testing the same model as given for NFBG (based on employment growth), the structural paths of experimentation, affordable loss, flexibility and pre-commitments have standardised regression coefficients of 0.042, 0.071, 0.008 and 0.044, respectively, with NFBG in the township small business investigated in the study. The SEM model fit indices of CMIN/DF (4.08), DF (56), CFI (0.98) and TLI (0.97), to mention a few, met the goodness-of-fit and as such the data fits the model adequately. Nevertheless, when considering for statistical significance where the $p < 0.05$, none of the hypothesised relationships between the effectuation variables and NFBG were statistically supported. This was probably because small business owners are necessity driven and focus on their survival (Block et al. 2015:38) rather than on creating employment for others. The relationships between the four effectuation constructs as first-order constructs with financial and non-financial aspects of business growth has been established by this study amongst the businesses studied, but the study now needed to investigate the relationship between effectuation as a second order construct with business growth (H_{1a} and H_{1b}).

Second-order construct test was explored to determine if the direct relationship between effectuation and FBG can be investigated. For the effectuation second-order measuring model to be statistically acceptable over the first-order model that postulates effectuation as a first-order model (multidimensional constructs) versus effectuation as represented by the four constructs, the target coefficient was calculated. Target coefficient was calculated by effectuation first-order measurement model divided by effectuation second-order measurement model, and the value should have been above 0.9 (Hong & Thong 2013:287). In this study, the target coefficient was 0.91 (215/237), which means the second order was an appropriate (statistically) representation of effectuation. In order to test the primary objective, namely if there was a statistically significant relationship between effectuation and business growth, a SEM as depicted in Figure 3 was tested. Effectuation was represented by the second-order model rather than perceived as a multidimensional construct with co-variants between them (first order). Indices that met the goodness-of-fit test for the SEM relating to the relationship between effectuation and business growth (assets and sales) in Figure 3 included CMIN/DF (4.217), DF (66), CFI (0.971), TLI (0.966) and RMSEA (0.077), to mention a few. Most of these indices were all within the acceptable values and hence the model was accepted. The standardised regression coefficient of 0.3 indicated a weak level of statistical significance ($p < 0.001$). The relationship between effectuation and NFBG was a positive negligible one (standardised regression of 0.031), even with a p-value of 0.492, it was not statistically significant.

In order to test the primary objective, namely if there was a statistically significant relationship between effectuation and business growth, a SEM as depicted in Figure 4 was tested. Effectuation was represented by the second-order model rather than perceived as a multidimensional construct with covariants between them (first order).

In line with the stated primary research objective, there was a weak relationship between effectuation and FBG. The

relationship with FBG is weak, probably because of the low levels of education (Urban & Ndou 2019:6) of the NTSBO that further limits their ability to incorporate political, economic, social, technological, environmental and legal (PESTEL) factors and strengths, weaknesses, opportunities and strengths (SWOT) analysis of their business. (Nnamseh & Akpan 2015:100) as some of the strategic business tools. The study also investigated the moderating effect of the industry variable on the statistically significant relationships of experimentation and flexibility with business growth (assets and sales). Table 4 presents all the indices for effectuation first-order and second-order models.

As experimentation and flexibility have a statistically significant relationship with FBG, this study investigated the moderating effect of the industries. Distribution of respondents by industry are 605 (83.1%) in retail, 115 (15.8%) in service and 8 (1.1%) in manufacturing. Only the retail and service industries were investigated as a moderator, but the manufacturing industry was not investigated as the number of eight respondents was too low for a valid test. There was an interaction (Int_1) *p*-value for experimentation (0.3594) and flexibility (0.8404) that was > 0.05, meaning it was not statistically significant. In addition to this, the confidence interval (LLCI to ULCI) for the retail and service industries should not include zero in the range to have a moderating effect. Experimentation (-0.1991–0.0723) and flexibility (-0.1638–0.2012) interval both have a zero. Therefore, the retail and service industries did not have a moderating effect on the respective relationships between experimentation and flexibility with FBG. The study further tested to determine if industry was a moderator in the relationship between effectuation and business growth. As stated earlier on, the confidence interval (LLCI to ULCI) for the retail and service industries should not include zero in the range to have a moderating effect. Effectuation (-0.2613–0.2640) interval had a zero in the range. Therefore, the retail and service industries did not have a moderating effect on the relationship between effectuation and FBG.

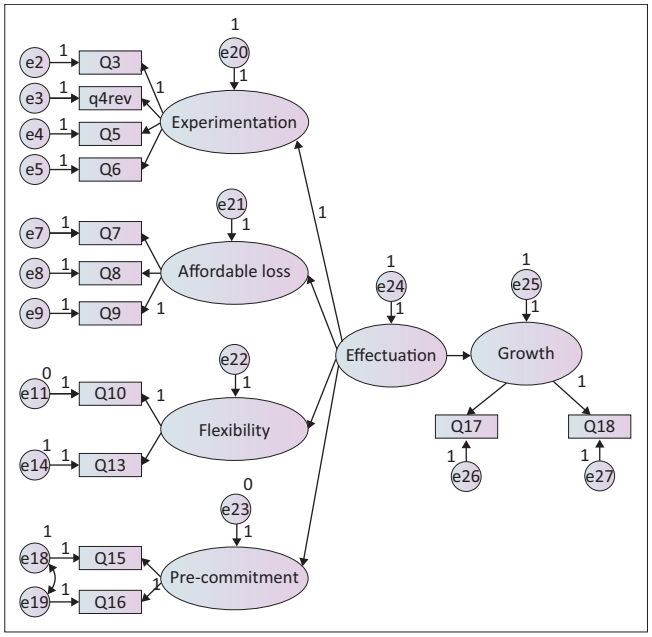


FIGURE 4: Structural equation model.

Contrary to the study's projections, the industry in which the small business was operating in did not moderate the hypothesised relationships that effectuation or its components have with business growth. The reason may probably be that NTSBOs' decision making was not to be affected as they did not differentiate their approach based on the industry, because no industry knowledge was gathered because of lack of strategic planning.

Conclusion

The hypotheses that effectuation (H_{1a}), experimentation (H_{2a}) and flexibility (H_{4a}) by NTSBO has a relationship with FBG was supported as it was statistically significant ($p < 0.05$). Theoretical contribution of the study was that township small business owners with low educational levels in the sample who practised effectuation had a weak positive relationship with FBG. Past studies have indicated that the practice of experimentation will result in business growth (Shirokova et al. 2020:478; Welter & Kim 2018:24). In this study, where the experimentation decision logic was practised by the NTSBO, it had a statistically significant and positive relationship with FBG ($p < 0.05$). Flexibility in previous studies contributed towards business growth (Prommarat, Pratoom & Muenthaisong 2017:74;

TABLE 4: Effectuation first-order and second-order model indices.

Goodness-of-fit index	Recommended values for acceptable model fit	Relevant literature	First-order SEM model	Second-order SEM model
Degree of freedom (DF)	Dependent on type of model and number of variables	Cortina et al. (2017:366)	48.00	66.00
Adjusted goodness-of-fit index (AGFI)	> 0.90	Chang, Lo and Hung (2019:4)	0.92	0.92
Comparative fit index (CFI)	> 0.95	Fonseca-Pedrero et al. (2018:6)	0.98	0.97
Root mean square error of approximation (RMSEA)	< 0.08	Fonseca-Pedrero et al. (2018:6)	0.07	0.07
RMSEA LL	< 0.05	Rose, Markman and Sawilowsky (2017:73)	0.06	0.06
RMSEA UL	≤ 0.08	Rose et al. (2017:76)	0.08	0.08
Probability for test of close fit	RMSEA ≤ 0.05	Shi, Maydeu-Olivares and Di Stefano (2018:2)	0.00	0.00
Tucker–Lewis index (TLI)	> 0.95	Bouwstra et al. (2019:422)	0.97	0.97
CMIN/DF	1–5	Elrehail (2018:130)	4.48	4.22

SEM, Structural equation modelling; CMIN/DF, chi-square value/degree of freedom; LL, lower limit; UL, upper limit.

Vedanthachari & Baldock 2015:2). When flexibility was used as a decision logic by the township small business owner in this study, it had a statistically significant and positive relationship with business growth ($p < 0.05$). Affordable loss and pre-commitments relationship with business growth was not statistically significant as the p-values were > 0.05. Furthermore, experimentation and flexibility have a weak positive relationship with FBG when these decision logics are separately practised by township small business owners.

The relationship between affordable loss and pre-commitments was of interest to this study and the relationship each has with FBG or NFBG was also of significance. The lack of a statistically significant relationship between affordable loss and pre-commitments may be the reason why this relationship was negligible as opposed to the weak relationships with experimentation and flexibility with FBG. Another theoretical contribution made was that the retail and services do not moderate the relationships that effectuation, experimentation and flexibility have with FBG.

The study makes practical contribution by canvassing the idea that the effectual approach could be beneficial as an entrepreneurial approach for NTSBOs in emerging economies such as SA with scarce resources. With the use of effectuation, township small business owners would stop focusing on the challenge of not having resources they need for the chosen business venture but would rather pay attention to what business venture to start and grow based on the resources (means) at hand.

Limitations of the study

It is instructive to highlight some of the limitations of the study as these may engender a better understanding and interpretation of its findings. As purposive and snowball sampling (non-probability sampling) was used in the study, this does not allow the findings to be inferred to the population of all township small business owners (Yang & Banamah 2014:57). The study was based in townships in Gauteng province and justifiably so, as this was the province with the highest concentration of small businesses within SA (Kalitanyi 2019:54). This may nonetheless limit the study in understanding how township small business owners in other provinces may have responded as the challenges and opportunities may differ in the different provinces. The time horizon used in the study was cross-sectional thereby the study could not track the changes in decision logic, if any, across a time range by the township small business owner.

Recommendations for future study

This study utilised a sample of township small business owners. Future research could also be conducted for rural small business owners' practice of effectuation and its effect on business growth, if any. The study found no relationship between the practice of effectuation or any of the effectuation constructs by and NFBG, which was measured by employment growth. It would be worthwhile to investigate in future why this was the case. Industry did not moderate the relationships that the independent variables of effectuation, experimentation and flexibility had with FBG. Future research could investigate why this was the case and if there are other moderating variables such as education and gender that might interfere with the relationships.

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Authors' contributions

M.N. is the first author who conceptualised the research article, conducted literature review, handled data collection and analysis and wrote the article and completed it under the guidance of M.N.M.

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Data availability

Data sharing is not applicable to this article as no new data were created or analysed in this study.

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