



The nexus between effectual actions and small business performance



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Purpose: This study interrogates the interrelatedness of effectual actions and small business performance. It provides fresh insights about effectual heuristics and small business performance, as evinced in a study with data drawn from a variety of sectors.

Design/methodology/approach: Based on primary data from 685 small businesses, the study examines hypothesised relationships using the partial least squares structural equation modelling technique.

Findings/results: The findings reveal the varied effects of composite effectuation and its dimensions on small business performance. Composite effectuation, affordable loss and flexibility are positively related to small business performance, whilst experimentation and precommitment have negative relationships with small business performance. The study concludes that the application of effectual actions has diverse implications for small business performance.

Research implications: The generalisation of findings can be limited, given that this is a single country study. Limitations notwithstanding, this article provides new empirical data, knowledge and insight about the relationship between effectual actions and small business performance. This provides a strong base for future multicountry research into effectual actions and small business performance.

Practical implications: The findings of this article have implications for small businesses navigating uncertainties occasioned by resource constraints. Essentially, the findings of this study can enhance the development of a learning curriculum to improve the ability of small businesses to apply effectual heuristics in managing resource challenges.

Originality/value: This article addresses the research gap in the field of entrepreneurship arising from the limited empirical studies on the relationships between effectual actions and small business performance.

Keywords: effectuation; small business performance; experimentation; affordable loss; flexibility; precommitment; heuristics; effectual actions.

Introduction

The aspiration to improve small business performance is of cardinal importance as countries continue to appreciate the role of small businesses in the acceleration of economic growth, poverty alleviation and job creation (Ayyagari, Demirgüç-Kunt, & Maksimovic, 2011; Engelen, Kube, Schmidt, & Flatten, 2014). The importance of small businesses is amplified in a developing economy like South Africa, where they account for about 55% of formal employment (Ndlovu & Makgetla, 2017) and are considered critical vessels of job creation and, in essence, key contributors to economic empowerment (National Planning Commission, 2011). Despite this acclaim, small businesses remain in a continuous tussle with prevalent uncertainties in their business environment (Global Entrepreneurship Development Institute, 2017) that are characterised by socio-economic challenges unique to developing economies (Sriram & Mersha, 2006). Herrington and Kew (2017) report that the developing economic context of sub-Saharan Africa, typified by finance inaccessibility, complex market challenges and oppressive market entry procedures, presents the most adverse conditions for small businesses. The pervasiveness of these challenges leads to perceived and observed uncertainty for the small businesses as they seek to explore and exploit opportunities within this context.

Reymen et al. (2015) contend that small business actions are characterised by uncertainty and that uncertainty is at the core of small business decision-making. McKelvie, Haynie and

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Gustavsson (2011) recognise that most small businesses are in uncertain settings and that the ability of these businesses to leverage the emergent surprises of their context is crucial to whether they perform or fail in the process. Interestingly, Sarasvathy (2008) introduces effectuation as the predominant theory of decision-making in uncertain contexts. More so, crucial to the effectuation theory is the proposition that opportunities are emergent from uncertain environments and these contingencies must be leveraged (Sarasvathy, 2001a). Instructively, it is notable that effectuation not only enables small businesses to navigate their uncertain settings, but it also empowers them to exploit the contingencies emergent from this uncertain context.

Considerably, the interactions between effectuation and uncertainty suggest that small businesses operating within uncertain contexts may apply effectual logic to negotiate and leverage emergent opportunities for value creation and capture. The uncertainties prevalent in the South African small business environment make it an appealing context to test the effectuation theory. This is more so because the focus of extant literature has largely pivoted on the antecedents and outcomes of effectuation in more mature markets (Cai, Guo, Fei, & Liu, 2017). Eijdenberg, Paas and Masurel (2017) concur that despite the growth of effectuation research, there has been a limited amount of effectuation studies in developing economies. More so, the dearth of empirical research into effectuation and other constructs (Arend, Sarooghi, & Burkemper, 2015) further impairs the development of the effectuation literature.

The present study contributes to closing the gap in effectuation literature by interrogating the relationship between the application of effectual heuristics by South African small businesses and the performance of these small businesses. Specifically, the purpose of this study is to investigate the nexus between small business performance and the composite effectuation, experimentation, affordable loss, flexibility and precommitment capabilities of these small businesses.

Theoretical framework and hypotheses development

The theory of effectuation has been described as a vibrant and developing theoretical landscape that provides an entirely new prism through which entrepreneurial activities can be appreciated (Arend et al., 2015). Specifically, Fisher (2012) accentuates effectuation as one of the most important nascent theoretical perspectives explaining entrepreneurial actions, logics and rationality. According to Djuricic and Bootz (2019), the development of the effectuation theory embodies a notable revolution in the appraisal of the decision-making, learning sequence and reasoning abilities of entrepreneurs.

Reymen et al. (2015) aver that the theory of effectuation emerged from the need for a different reasoning and decision

process that engender logics of actions suitable for unpredictable business settings. This is what Sarasvathy (2001b) describes as an environment where decision-makers inform and shape the setting, in contrast to the more traditional rational and decision logic settings defined by set goals, predictive rationality and environmental selection. This may explain why the theory of effectuation was developed as a converse to the causal process, which had been the leading rational logic in entrepreneurship. Instructively, Sarasvathy (2001a) was categorical that both the causal and effectual processes are essential features of human rationality that concurrently transpire and intersect over different actions and decision situations. However, differences between both logics arise with regard to the choices, which for causation is a selection between means used towards the pursuit of a defined effect and which for effectuation is a choice between numerous imaginable effects that are generated using a particular means set.

The focus of the effectuation theory development at inception was on the creation of the firm; however, Sarasvathy (2001a) opined that the theory could grow into addressing different realities. This assertion has proven right as the concept of effectuation has witnessed noteworthy nuances in approach and has been studied according to differing realities (McKelvie, Chandler, Detienne, & Johansson, 2019). As demonstrated in the extant literature, some of these differences include shifts from the focus on expert entrepreneurs to a variety of settings (Daniel, Domenico, & Sharma, 2015; Roach, Ryman, & Makani, 2016), as well as shifts in emphasis from distinct decisions to an investigation of a series of decisions (Cai et al., 2017; Werhahn, Mauer, Flatten, & Brettel, 2015).

Nonetheless, fundamental to the process of effectuation is that it commences with a set of means available to the effectuator and driven by unpredictable human desires, as well as the imagination of the effectuator, and leads to a selection of multiple possible effects. Conspicuously, the effectuator is essentially imaginative, continuously making the most out of the available means set as well as leveraging contingencies emergent from contextual economic decision processes rather than focusing on set goals (Sarasvathy, 2001a).

According to Fisher (2012), the decision processes of effectuators are based on the resources within their control, characterised by the questions 'who am I?' (personal characteristics, qualities and ability), 'what do I know?' (competence, understanding and *a priori* knowledge) and 'whom do I know?' (social network, alliances and relationships). The effectuator uses these available resources to create multiple new effects together with individuals who share similar aspirations and are willing to partner with the effectuator. As such, the effectuator believes that the future cannot be predicted and prefers to rather exert control over the future using a set of heuristics by visualising different multiple effects developed through a mixture of available resources and the resources of committed partners (Djuricic & Bootz, 2019).

The referenced heuristics are elucidated in the theory of effectuation through a set of core principles. These principles explain how the effectuator commences entrepreneurial actions with the available means set, appraises emergent opportunities based on affordable loss rather than on the expectations of returns, exhibits a level of flexibility to leverage contingencies that arise out of uncertain contexts rather than a dependence on set goals and enters partnerships with concordant individuals to construct the future (Read, Sarasvathy, Dew, & Wiltbank, 2017). Sarasvathy (2008) proposed five principles of effectuation, which include means, affordable loss, strategic alliances, exploitation of contingencies and control of an unpredictable future. In a study by Chandler, Detienne, McKelvie and Mumford (2011), however, effectuation is operationalised as a multidimensional construct with four dimensions that include experimentation, affordable loss, flexibility and precommitment. Notably, several effectuation studies (Deligianni, Voudouris, & Lioukas, 2017; Guo, 2019; Laskovaia, Shirokova, & Morris, 2017) have adopted this operationalisation of effectuation and have provided impetus for the current study to do the same.

Effectuation and small business performance

Roach et al. (2016) aver that the theory of effectuation provides a stimulating viewpoint for the understanding of small business performance. This perspective provides motivation for the interrogation of small business performance using an effectual prism. Associated with this view is the clarion call by Perry Chandler and Markova (2012) for more empirical research into the nexus between effectuation and business performance. Although some scholars (Bhowmick, 2015; Nelson, 2012; Ye, 2016) have responded to this call by examining the theory of effectuation with a focus on identifying the suitable outcome variables in the study of effectuation, McKelvie, Detienne and Chandler (2013) observe that there remains a dearth of empirical studies in effectuation and what it represents in broader entrepreneurship research.

Extant literature presents discordant opinions as it pertains to effectuation and business performance. For instance, whilst Sarasvathy (2001a) declares that business performance may not be predicted by effectuation, Read, Song and Smit (2009) contrarily argue that effectuation might be a predictor of small business performance. Indeed, a study by Read and Sarasvathy (2005) suggests a possible connection between effectuation and new business growth as a strand of business performance. The disharmony is reflected in the metastudies of McKelvie et al. (2019) and Perry et al. (2012) that concluded with a call for more survey-based empirical studies investigating the relationship between effectuation and business performance.

This position is echoed by Read, Sarasvathy, Dew and Wiltbank (2016), who assert that literature addressing the relationship between effectual capabilities and small business performance is scant. The existing empirical studies on the relationship between effectuation and business performance

have mostly dealt with Western cases, whilst effectuation research into the less mature markets has received less attention (Cai et al., 2017). Markedly, some studies have reported negative or nonsignificant effects of effectuation on business performance indicators. For instance, Eijdenberg et al. (2017) found that effectuation has a significant negative effect on small business growth. Similarly, the findings of a research by Muhd Yusuf, Hj Din and Jusoh (2018) revealed that effectuation does not bear a statistically significant association with sustainable performance.

Contrary to this, Peng, Liu, Jiao, Feng and Zheng (2020) revealed that effectuation has a significant and positive impact on the performance indicators of sales growth, employees' growth, profit growth, new business growth and market share growth in businesses. Congruently, Yu Tao, Tao, Xia and Li (2018) reported that effectuation has a positive effect on business performance, whilst Laskovaia et al. (2017) found that effectuation has a positive relationship with sales growth, market share growth and profit growth. Cai et al. (2017) showed that effectuation is positively associated with growth and profitability performance indicators. Correspondingly, Guo, Cai and Zhang (2016) established that effectuation is positively associated with business growth as an indicator of performance. It is against the background of these findings that it is hypothesised that in the uncertain context of a developing country like South Africa:

H₁: Effectuation has a positive relationship with small business performance.

Dimensions of effectuation and small business performance

Experimentation and small business performance

Experimentation explains strings of trial-and-error adaptations applied over a short period in different strategic actions, in pursuit of a suitable base for competing (Nicholls-Nixon, Cooper, & Woo, 2000) and is used by small businesses to cope with the uncertainties of their environment (Larrañeta, Zahra, & González, 2012). Given that effectuation is a heuristic for navigating unpredictable futures, effectuators attempt several iterations of trial-and-error processes before settling for a particular outcome (Chandler et al., 2011).

Laskovaia et al. (2017), cognisant that effectuators utilise this heuristic to reduce risk as well as possible exposure to failure, aver that the trial-and-error exercise enables small businesses to navigate resource constraints by co-creating with others to produce new offerings. Consequently, existing literature reports that experimentation may lead to positive effects, given that it affords businesses the opportunity to select between multiple effects for the most viable option for success by ensuring that courses of action that are prone to failure are quickly eliminated (Read et al., 2016; Sarasvathy, 2014).

Further, empirical studies report both negative and positive relationships between experimentation and different performance strands. For instance, Eyana, Masurel and Paas (2018) found that experimentation has no relationship with

employment size, sales, profit and assets, whilst Smolka, Verheul, Burmeister-Lamp and Heugens (2016) reported that experimentation has no significant relationships with market share, sales and profitability. Conversely, Nicholls-Nixon et al. (2000) showed a connection between the use of experimentation and growth in the number of employees, whilst Nelson (2012) similarly revealed that experimentation has a positive relationship with the perception of business performance. Duly cognisant of the asymmetrical observations in extant literature yet convinced that experimentation may be beneficial to small businesses in South Africa, the study elects to hypothesise that:

H₂: Experimentation has a positive relationship with small business performance.

Affordable loss and small business performance

The affordable loss heuristic explains the effectuator's penchant to consider the downsides of opportunities rather than the upsides, to ensure that possible failures are within a predetermined acceptance ratio (Read et al., 2009). According to Dew, Sarasathy, Read and Wiltbank (2009), the affordable loss heuristic is employed by decision-makers to estimate what they are willing to risk or lose in pursuit of an effect. The heuristic is referred to as the acceptable risk logic, given that effectuators must have imagined multiple possible paths in the identification of action with the most acceptable risk profile (Arend et al., 2015). Small businesses apply the affordable loss heuristic to balance the assessment of emergent opportunities with the available scarce resources, thereby increasing the likelihood of their survival (Cai et al., 2017).

Against this background, affordable loss may be considered as a heuristic that ensures the generation of feasible effects as well as a condition for selecting between effects in effectuation. Consequently, it is conceivable that the affordable loss heuristic provides effectuators the opportunity to apply resource-driven decisions that shield the business from adverse effects when such decisions fail (Harms & Schiele, 2012). According to Dew et al. (2009), expert entrepreneurs have a proclivity for control-based approaches that include the affordable loss heuristic, which may relate to positive performance effects.

Nonetheless, empirical studies report different findings on the relationships between affordable loss and performance indicators. For instance, Urban and Heydenrych (2015) revealed that affordable loss has no relationship with business performance. Similarly, Smolka et al. (2016) reported that affordable loss is negatively related to market share, sales and profitability. However, Roach et al. (2016) found that affordable loss has a positive significant relationship with the performance indicators of sales growth, profit growth and employment growth.

On the contrary, McKelvie et al. (2013) revealed that affordable loss is a predictor of achieving first sales and profitability, as well as a positive predictor of cash flow, whilst Brettel, Mauer,

Engelen and Küpper (2012) provided evidence that the preference for affordable loss is significantly positively related to research and development efficiency. Correspondingly, Eyana et al. (2018) reported that the use of affordable loss is related to a higher change in profit, and Nelson (2012) found that affordable loss has a positive relationship with the entrepreneur's perception of the performance of the business. Consequent to these findings in previous literature, this study hypothesises that:

H₃: Affordable loss has a positive relationship with small business performance.

Flexibility and small business performance

The concept of flexibility is presented in existing literature (see Bamel & Bamel, 2018; Khan, Majid, Yasir, Javed, & Shah, 2021) as a crucial advantage held by small businesses over large orthodox businesses. Peng, Lin and Liu (2015) argue that the necessity of flexibility for small businesses is heightened by their resource-constrained and uncertain environments, requiring that small businesses manage scarce resources whilst navigating constantly evolving settings. The flexibility heuristic allows businesses to recombine resources as they navigate the uncertainty of their environments, whilst adapting their strategies and incessantly modifying the same to the fluidity of their context (Dopfer, Von Humboldt, Chalmers, & Gassmann, 2017). Flexibility is posited as a heuristic used by small businesses to maximise scarce resources and achieve multiple outcomes, to provide innovative responses to uncertainty, to alleviate the cost associated with series of experiments, as well as to exploit alternative models in pursuit of successful outcomes (Deligianni et al., 2017).

Studies investigating the relationship between flexibility and different performance indicators report varying results. For example, Eyana et al. (2018) showed that flexibility has no significant relationship with employment size, sales, profit and assets, whilst McKelvie et al. (2013) found that flexibility does not lead to quicker time to achieving profitability. Similarly, Feifei (2012) revealed that flexibility has no significant connection with sales growth, return on investments, profitability and market share.

Inversely, Guo and Cao (2014) and Cingöz and Akdoğan (2013) reported that flexibility is positively related to sales growth, market share growth, profit growth, productivity, return of assets and return of sales, as well as with explorative and exploitative innovation performance. Urban and Heydenrych (2015) established that flexibility is positively and significantly related to the performance of the business. Similarly, Nelson (2012) provided evidence that flexibility has a positive relationship with the entrepreneur's perception of the performance of the business. Congruently, Smolka et al. (2016) found that flexibility has positive relationships with market share, sales and profitability. These findings on the relationship between flexibility and performance indicators from extant literature demonstrate the possible positive interaction between flexibility and small business performance, and so it is hypothesised that:

H₄: Flexibility has a positive relationship with small business performance.

Precommitment and small business performance

Small businesses embrace precommitment to decrease the challenges brought about by resource constraints through partnerships with associates who choose to be in business with them and in the process provide access to resources previously lacking (Roach et al., 2016). Sarasvathy and Venkataraman (2011) aver that effectuators can exploit opportunities by leveraging their effectual networks to overcome the lack of resources. Notably, the scarcity of resources is considered a persistent issue for small businesses as they navigate the uncertainty of their business contexts, and to succeed, these businesses must secure additional resources (Cai et al., 2017). Correspondingly, Mu (2013) argues that small businesses tend to achieve performance by accessing new resources available through their networks.

Previous studies interrogating the relationship between precommitment and different performance indicators report contrasting outcomes. For instance, Shin, Park and Park (2019) and Roach et al. (2016) reported that precommitment has no significant relationship with growth in sales, growth in return on sales, growth in profit, growth in market share, return on investment and employment growth. Nelson (2012) also revealed that precommitment has no significant influence on the entrepreneur's perception of the performance of the business. Contrarily, Urban and Heydenrych (2015) found that precommitment significantly impacts business performance. Smolka et al. (2016) established that precommitment has positive relationships with market share, sales and profitability. Likewise, Eyana et al. (2018) reported that precommitment is significantly related to higher changes in employment size, sales, profit and assets. Further, Blauth, Mauer and Brettel (2014) revealed that there is a positive significant association between precommitment and practised creativity. Spurred by the findings and propositions from existing literature, the present study hypothesises that:

H₅: Precommitment has a positive relationship with small business performance.

Methodology

Data

Data for the current study were obtained using self-administered questionnaires directed to small businesses in South Africa. Given the spread of the target population across South Africa, the size of the sample required for analysis and the technological tools currently available to researchers, an online survey was selected for the collection of data. A database of South African small businesses drawn from various small business hubs was used for the study. Approximately 2180 questionnaires were emailed to small businesses from the various industrial sectors in South Africa for data collection from February to April 2020. A total of 1027 small business owners and owner-managers in South Africa responded to the survey, which represented a 47%

response rate. However, mostly because of noncompletion of the questionnaires, 685 returned questionnaires were retained and finally used for the analysis. The demographic analysis revealed that most of the responding small businesses operate in the trade and accommodation (27%) industrial sector as well as the finance and business services (24%) sector. The responding small businesses consisted mostly of small and micro enterprises employing less than 50 employees.

Measures

Dependent variable

Small business performance was the dependent variable in the study. Although Richard, Devinney, Yip and Johnson (2009) observe that there is no agreement on what defines small business performance amongst scholars, Barreira (2005) argues that this may be because performance is a multidimensional phenomenon. Consequently, the dependent variable in the current study was considered as a reflective measure according to a multidimensional and subjective scale developed by Zahra, Neubaum and El-Hagrassey (2002). The scale consists of seven items, 'return on investment', 'return on equity', 'net profit margin', 'return on assets', 'growth in sales', 'market share growth' and 'growth in the number of employees', which broadly measured the satisfaction of respondents with the performance aspects of profitability and growth. To measure the dependent variable, respondents were requested to indicate the extent to which they were satisfied with the performance of their business, with respect to the seven indicators above. All the items were accompanied by five-point Likert-type answer options anchored on 1 (not satisfied) to 5 (very satisfied).

Independent variables

The independent variable in the study was effectuation, which was measured with a 13-item scale developed and validated by Chandler et al. (2011). Effectuation is operationalised as a formative, multidimensional construct with the independent dimensions of experimentation, affordable loss, flexibility and precommitment that aggregate to form the effectuation construct. Presently, this measure appears to be the most appropriate scale at capturing the actions of small businesses relating to the performance of their businesses (McKelvie et al., 2019). Several studies (see Cai et al., 2017; Eijdenberg et al., 2017; Eyana et al., 2018; Mthanti & Urban, 2014) have studied effectuation using a formative multidimensional measure. This scale is multidimensional because it measures 'experimentation' (four items), 'affordable loss' (three items), 'flexibility' (four items) and 'precommitment' (two items). The respondents were asked to indicate the extent to which they agreed or disagreed with statements such as 'we experimented with different products and/or business models' (experimentation), 'we were careful not to commit more resources than we could afford to lose' (affordable loss), 'we allowed the business to evolve as opportunities emerged' (flexibility) and 'we used precommitments from customers and suppliers as often as possible' (precommitment). All the

items consisted of statements that were accompanied by five-point Likert-type answer options anchored by 1 (strongly disagree) to 5 (strongly agree).

Ethical considerations

Ethical approval to conduct the study was obtained from the Faculty of Economic and Management Sciences' Research Ethics Committee of the University of Pretoria (reference number EMS148/18). Informed consent was obtained from all participants.

Statistical method

Consistent with the analysis of complex research models, the study applied the partial least squares structural equation modelling (PLS-SEM) technique using the SMART-PLS 3.0 (Ringle, Wende, & Becker, 2015) software package. A key rationale for the adoption of the PLS-SEM technique is its ability to assess complex formative and hierarchical constructs (Hair, Risher, Sarstedt, & Ringle, 2019). The use of the PLS-SEM technique has precedence as previous studies interrogating the possible relationships between effectuation and several other constructs have applied this technique in their research (De La Cruz, Jover, & Gras, 2018; Masroor, Alam, Hossain, & Misbauddin, 2020; Roach et al., 2016). Prior to the estimation of the structural models and the test of the hypothesised relationships, the adequacy of the outer measurement models of the key variables was confirmed. Furthermore, because of the complex nature of the effectuation construct, designated as a reflective-formative Type II construct (Becker, Klein, & Wetzels, 2012), the repeated indicator approach was used to validate effectuation as a second-order formative construct.

Findings

Table 1 displays the correlations (r) between the key variables of the study. The correlation coefficients between experimentation and affordable loss ($r = -0.008$), experimentation and flexibility ($r = 0.126$), experimentation and precommitment ($r = 0.187$), affordable loss and flexibility ($r = 0.295$), affordable loss and precommitment ($r = 0.125$), as well as flexibility and precommitment ($r = 0.203$) demonstrate that the effectuation first-order factors have weak correlations between them.

However, given that these factors are indicators of a second-order formative construct, the low correlations provide

TABLE 1: Pearson correlations.

Variable	1	2	3	4	5
1. Effectuation	-	-	-	-	-
2. Experimentation	0.487*	-	-	-	-
3. Affordable loss	0.698**	-0.008	-	-	-
4. Flexibility	0.627**	0.126**	0.295**	-	-
5. Precommitment	0.580**	0.187**	0.125**	0.203**	-
6. Small business performance	0.190**	-0.035	0.208**	0.195**	0.057

*, $p < 0.05$; **, $p < 0.01$ (two-tailed).

additional confirmation that the constructs are distinct and independent of each other. Moreover, the correlations between the variables were well below the 0.7 threshold suggested by Knoke, Bohrnstedt and Mee (2002), which is an indication that multicollinearity was not an issue. Consistent with the theoretical propositions advanced in this study, effectuation ($r = 0.190$, $p < 0.01$), affordable loss ($r = 0.208$, $p < 0.01$) and flexibility ($r = 0.195$, $p < 0.01$) have a statistically significant and positive relationship with small business performance. However, the correlation output shows that small business performance has a statistically insignificant negative relationship ($r = -0.035$, $p = 0.359$) and an insignificant positive relationship ($r = 0.057$, $p = 0.137$) with experimentation and precommitment, respectively.

The measurement model used in the study was evaluated to confirm that the observed variables loaded satisfactorily according to the factors that they were meant to measure, whilst concurrently examining the distinctiveness of these factors. As recommended by Hulland (1999), loadings greater than 0.4 signal acceptable reliability, and so the items with such loadings were retained whilst those that did not meet this criterion were removed. The values of the item loadings obtained from the factor analysis as displayed in Table 2 are above the 0.5 threshold recommended. Consequently, the effectuation and small business performance measurement scales are confirmed as adequate for the estimation of the structural models.

To establish construct validity (convergent and discriminant validity) and internal consistency of the measurement model, the study calculated the composite reliability (CR), average variance extracted (AVE), and heterotrait-monotrait (HTMT) values. As presented in Table 2, the CR values of all the variables are above the 0.70 threshold, which provides validation for the internal consistency of the items. The AVE, according to the criteria specified in the study by Fornell and Larcker (1981), establishes convergent validity based on a

TABLE 2: Outcome of construct validity assessment.

Variable	Item loadings	AVE	CR	HTMT output				
				1	2	3	4	5
1. Experimentation	0.868 0.729 0.612	0.553	0.784	1	-	-	-	-
2. Affordable loss	0.866 0.901 0.841	0.756	0.903	0.051	1	-	-	-
3. Flexibility	0.813 0.565 0.854 0.567	0.508	0.799	0.280	0.422	1	-	-
4. Precommitment	0.884 0.878	0.776	0.874	0.336	0.163	0.289	1	-
5. Small business performance	0.904 0.913 0.858 0.882 0.753 0.694	0.702	0.933	0.063	0.229	0.297	0.078	1

AVE, average variance extracted; CR, composite reliability; HTMT, heterotrait-monotrait.

value output ≥ 0.5 , which indicates the extent to which items measuring a construct are related to each other.

The AVE values of all the variables are above the 0.5 cut-off point, confirming convergent validity. The HTMT value represents the output of the heterotrait technique correlations divided by the average of the monotrait technique correlations. The thresholds for strict discriminant validity are based on $HTMT_{0.85}$ and $HTMT_{0.90}$ (Henseler, Ringle, & Sarstedt, 2015). The results of the HTMT calculation show that all the variables have HTMT correlation ratios that range between 0.051 and 0.422, which is an indication that the latent variables are discriminant of each other. The multicollinearity assessment of the data based on variance inflation factor (VIF) values and the correlations between the constructs provided evidence that the data have no multicollinearity issues. The outer and inner VIF values were within the thresholds of 5.0 with ranges between 1.087 and 2.505, whilst the correlations (ranged between 0.008 and 0.328) between the constructs were well below the 0.90 cut-off point specified by Hair et al. (2019), indicating that the data were devoid of multicollinearity.

To assess the structural model and examine the proposed hypotheses, the study executed the partial least square (PLS) algorithm procedure as well as the bootstrapping process. The PLS algorithm was used to establish the path coefficients of the relationships being interrogated, and the bootstrapping process was performed to assess the significance of the relationships. The study calculated the coefficient of determination (R^2) and the predictive relevance (Q^2) values as measures of the predictive power and predictive relevance of the models, respectively. To test the hypotheses, the study created two structural models consisting of the relationship between the dependent variable and effectuation as a composite construct, as well as the relationships between the subdimensions of effectuation as independent constructs and the dependent variable.

As shown in Table 3, the path coefficients of the proposed relationships between small business performance and effectuation, experimentation, affordable loss, flexibility and precommitment have good values. The table also outlines the outcome of the analysis of the structural model related to the significance levels of the hypothesised relationships. Accordingly, the results show that effectuation ($\beta = 0.250$, $t = 6.435$, $p < 0.01$) has a significantly positive relationship with small business performance. This result provides support that H_1 is statistically supported. The R^2 coefficient is 0.062, which means that effectuation

accounts for approximately 6% of the variance in the endogenous variable. The Q^2 value was greater than zero ($Q^2 = 0.078$), which confirms that the model has predictive relevance.

Further, the output indicated that affordable loss ($\beta = 0.141$, $t = 3.538$, $p < 0.01$) and flexibility ($\beta = 0.257$, $t = 6.398$, $p < 0.01$) have significant, positive relationships with small business performance. However, experimentation ($\beta = -0.103$, $t = 2.840$, $p < 0.05$) has a significant but negative relationship with small business performance, whilst precommitment ($\beta = -0.021$, $t = 0.564$, $p = 0.573$) has a negative insignificant relationship with small business performance. These results provide support for H_3 and H_4 . However, the outcomes do not lend support to H_2 and H_5 . The R^2 value is 0.110, which means that 11% of the small business performance variance is explained by the combined effects of the exogenous variables. The outcomes of the Q^2 calculations reveal that flexibility (0.059) has the most predictive relevance, followed by affordable loss (0.017), with experimentation (0.007) and precommitment (-0.001) having the least predictive relevance in the model. The negative precommitment Q^2 value is not surprising given that the direct relationship between precommitment and small business performance is not significant. The varied findings in the relationships between the exogenous variables and the endogenous variable in the present study follow similarly mixed findings reported in other studies (Eyana et al., 2018; Mthanti & Urban, 2014; Urban & Heydenrych, 2015).

Discussion

The present study sought to interrogate the nexus between the effectual actions of small businesses in South Africa and the performance of these small businesses. The results show that effectuation treated as a composite construct is positively related to small business performance. In addition, the affordable loss and flexibility heuristics of small businesses significantly relate to the performance of the small businesses. However, for the respondent small businesses, experimentation and precommitment heuristics, respectively, do not positively or significantly relate to small business performance. The results of the study differ from the findings of Eijdenberg et al. (2017) that revealed that effectuation and its dimensions have no significant relationships with business growth as a performance component. Nonetheless, the outputs of the present study are consistent with the outcomes of some previous studies examining the relationships between effectuation, dimensions and different strands of business performance.

TABLE 3: Outcome of the test for hypothesised relationships.

Hypothesis	Relationships	Std beta	Std error	t-value ^	p	Decision	Q^2	R^2
H_1	EFF \rightarrow SBP	0.250	0.039	6.435	0.000	Supported	0.078	0.062
H_2	EX \rightarrow SBP	-0.103	0.037	2.840	0.005	Not supported	0.007	0.11
H_3	AL \rightarrow SBP	0.141	0.040	3.538	0.000	Supported	0.017	-
H_4	FX \rightarrow SBP	0.257	0.040	6.398	0.000	Supported	0.059	-
H_5	PC \rightarrow SBP	0.021	0.037	0.564	0.573	Not supported	-0.001	-

Std beta, standard beta; Std error, standard error.

Specifically, the finding that effectuation as a composite construct is positively related to small business performance provides further support for previous findings in the literature (Peng et al., 2020; Yu et al., 2018). The finding in the current study related to experimentation is in line with the conclusions of Roach et al. (2016) that specified that experimentation has no direct relationship with the performance indicators of sales growth, profit growth and employment growth. The finding that affordable loss is positively related to small business performance reinforces the results of Eyana et al. (2018). The outcome that flexibility is positively related to small business performance is consistent with the result of a previous study by Urban and Heydenrych (2015). In congruence with the results of a study by Shin et al. (2019), the present study finds that precommitment has no significant relationship with small business performance. These outcomes also echo the results of a study by McKelvie et al. (2013) that reveal that each of the subdimensions of effectuation has differing relationships with the business performance strands studied.

The results of this study have implications for the extant theoretical arguments related to the shifts in the conceptualisation of effectuation theory. Whilst Sarasvathy (2001a) originally conceptualised effectuation as a decision logic used by expert entrepreneurs to create new businesses, the sample constitution of the present study comprised both established and newly formed small businesses founded and managed by either expert or novice small business owners. The focus of this study is consistent with the observations by Matalamäki (2017) that the concept of effectuation has witnessed notable shifts in conceptualisations and research interest since its emergence.

Further, it is evident that there are varied relationships between small business performance, the composite effectuation construct and its dimensions of experimentation, affordable loss, flexibility and precommitment. Such inconsistencies in findings warrant further research into the underlying factors that define the nature of the relationships that exist between the constructs. Pursuant to this, the effectuation body of knowledge will benefit from future studies into the possible theoretical models that delineate the boundary conditions capable of explaining the variance in relationships between the constructs.

Additionally, Perry et al. (2012) proposed that in effectuation studies, it is important to interrogate the effects of the application of effectual logic in a variety of contexts through survey-based studies. In consonance with this, the empirical outcome derived in the present study has major implications for extant literature, given that the results of data generated in South Africa, a developing economic context, provide evidence of a nexus between effectuation and small business performance. Cognisant of the limited effectuation studies outside of the more mature contexts, this study ushers in a novel stream of effectuation research by extending the application of the theory in the context of developing economies.

Further, this study has practical implications for small businesses navigating the uncertainty occasioned by the resource constraints prevalent in the developing economy context. A lack of access to finance has been flagged as a key challenge for small businesses in South Africa (Mthimkhulu & Aziakpono, 2015). Core to the effectual logic is the requirement to navigate resource constraints by using available resources rather than actively seeking external resources. As such, small businesses in South Africa may need to apply a suitable effectual heuristic such as affordable loss to navigate the constraints of finance scarcity. Importantly, the findings of this study can facilitate the development of a curriculum designed for the education of small businesses in the utilisation of effectual heuristics to manage their resource predicaments and environmental uncertainty.

Conclusion

This study sought to understand the relationship between the effectual activities of small businesses and their performance. The findings suggest that the small businesses in the respondent group rely on the composite effectuation capabilities to achieve small business performance. Specifically, as signalled by the average mean scores of the effectuation dimensions, this is driven by a higher inclination towards the effectual heuristics of affordable loss and flexibility rather than a predisposition towards experimentation and precommitment. This represents empirical evidence of the extent to which small businesses selectively apply these heuristics, possibly driven by their conviction of the efficacy of each effectuation dimension. In line with this, further empirical studies are required to explore the decision processes that drive the high level of inclinations towards some heuristics over others. More so, the effectuation literature will benefit from further research that investigates whether the application of simultaneously high levels of the effectual heuristics would have a stronger catalytic effect on small business performance.

There are some limitations to the study. As a result of the quantitative research method adopted for the study, an opportunity to truly understand how and when these heuristics are applied to navigate the challenging small business context was missed. More so, the study could not interrogate the nature of the co-existence between the distinct heuristics and how such interaction enables small businesses to perform. This limitation provides an opportunity for future researchers to investigate the 'how questions' through a mixed methods research approach.

The design of the present study as an *ex post facto* as well as a cross-sectional study that hinged the accuracy of the data on the ability of the respondents to recall events that took place in the past may have presented further limitations in the study. Future researchers can overcome such limitations through longitudinal studies that examine small businesses from the commencement of activities to the moment outcomes are derived.

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Competing interests

The authors have declared that no competing interest exists.

Authors' contributions

U.U.S.O. and C.E.-E. have contributed equally to the planning, researching, structuring and writing of this study.

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Data availability

The data sets analysed during the current study are available in the Figshare repository: <https://doi.org/10.6084/m9.figshare.14924493>.

Disclaimer

The authors hereby declare that this study is their own original work and has not been published or under consideration for publication elsewhere.

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