Thesis

An empirical assessment of effectually co-creating market and growth opportunities by corporate entrepreneurs

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Submitted in partial fulfilment of the requirements for the degree of
PhD in Entrepreneurship

at the
Faculty of Economic and Management Sciences, University of Pretoria

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Document Date:

2021-05-27

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Declaration

I declare that the thesis,

"An empirical assessment of effectually co-creating market and growth opportunities by corporate entrepreneurs"

is my own work, that all the sources used or quoted have been indicated and acknowledged by means of complete references, and that this thesis has not been submitted by me for a degree at any other institution.

Shahed Adam
27 May 2021

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ABSTRACT

This study empirically establishes by using structural equation modelling that professional financial planners - as products of corporate entrepreneurship - co-create market and growth opportunities through an interaction between effectual networks and value co-creation in a context of uncertainty. A survey was sent to 6000 CERTIFIED FINANCIAL PLANNER® (CFP®) professionals – experts in financial planning, registered with the Financial Planning Institute (FPI) of Southern Africa.

It contributes to the body of knowledge by intersecting theories of effectuation, entrepreneurial marketing and services sciences at the behavioural practices of professional financial planners. It shifts the academic dialogue from effectual outcomes of products to value co-creation, firms to co-created market opportunities and markets to effectual networks. Effectual networks have been found to mediate the role of value co-creation in co-creating market opportunities – necessary for co-created growth opportunities.

It also makes a methodological contribution by introducing effectuation theory to professional service firms and by providing reliable research instruments to measure behaviours that co-create growth opportunities. Practitioners can use the empirical findings to advance both entrepreneurship teaching and training by using the empirical effectual growth model to co-create market demand and growth opportunities at professional services firms.

Keywords: Effectuation, corporate entrepreneurship, professional service firms, entrepreneurial marketing, service science, value creation, market creation and growth.

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Acknowledgements

All praises to the Almighty Creator, Lord of the worlds, the All Knowing for:

1. Guiding me to this research;
2. My parents Omar and Halima, wife Fareeya and children Ahmad Salih, Madihah and Abdur-Rahmaan, who patiently bore and supported my distractions and absence at family functions;
3. Professor Jurie van Vuuren who kindly accepted me as his student and patiently directed my efforts;
4. Kerrin Myers who introduced me to effectuation theory;
5. Barbara Mundell who assisted with the construction, distribution and follow up of the survey to the Financial Planning Institute of Southern Africa (FPI) members – including the sharing of raw data;
6. The FPI for willing to partner in the study;
7. Joyce Jordaan who patiently assisted with the statistical analysis;
8. Elize Berman who helped with editing;
9. The external examiners Prof SD Sarasvathy - Indian Institute of Management, Prof A McKelvie - Syracuse University and Prof N Meyer - University of Johannesburg – who allowed for minor changes and made invaluable recommendations and
10. Kobus Kleyn who freely shared a link to his book *Mastering the 9 Ps to Professionalism. Passion for the Profession*.

"No two things have been combined better than knowledge and patience."
Prophet Muhammed (peace be upon him)

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1 INTRODUCTION

1.1 BACKGROUND

Kobus Kleyn is a CERTIFIED FINANCIAL PLANNER (CFP®) – with many post graduate certificates and diplomas - is a director at Kainos Financial Services. He joined the financial services profession in 2001 and spent 18 years in the corporate world. He began his entrepreneurial journey by creating his own practice – linked to Liberty Life, fourth largest life assurer in South Africa. Seven years later he sold his practice to his partner. Currently he practices his craft, as CFP®, to his private clients. He is a member of the Financial Planning Institute of Southern Africa (FPI) and achieved the status of Top of Table at the Million Dollar Round Table (MDRT) – a global Premier Association of Financial Professionals®. Kobus' association with the likes of Logan Naidu – a 33-year MDRT member and fellow South African – helped him on his journey within the financial services profession (Kleyn, 2017).

This is one of many similar journeys of South African corporate entrepreneurs that created professional financial planning practices. How do these understudied professionals create such superior performance though their journeys of corporate entrepreneurship, is of interest to many professional financial planners and researchers in corporate entrepreneurship? It is novel to effectuation, entrepreneurial marketing and service science researchers.

This section reflects on the current situation of effectuation, entrepreneurial marketing and service science, such as service-dominant (S-D) logic, as the focus theories of this study. They fall within the parent theories of strategic management, entrepreneurship, corporate entrepreneurship (CE) and marketing. It sets the scene for positioning the research problem, purpose, questions, methodology, scope and definitions and for organising the content of this thesis that is to follow in the next sections.

This study has adopted a field of study approach over a historical review. It empirically assessed whether corporate entrepreneurs like professional financial planners, in uncertain contexts, effectually co-create firm growth through co-created markets opportunities. It uses the intersection of the following variables as established constructs in effectuation, entrepreneurial marketing and service science to achieve this aim:

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- **Effectual behaviours and effectual networks** (Sarasvathy, 2001a, 2008; Sarasvathy & Kotha, 2001; Vargo & Lusch, 2004; Read & Sarasvathy, 2005, 2012; Sarasvathy & Dew, 2005a, b; Wiltbank, Dew, Read & Sarasvathy, 2006; Sarasvathy, Dew, Read & Wiltbank, 2008; Dew, Read, Sarasvathy & Wiltbank, 2008, 2009a; Dew, Sarasvathy, Read & Wiltbank, 2009b; Read, Dew, Sarasvathy, Song & Wiltbank, 2009a; Perry, Chandler & Markova, 2012; Brettel, Mauer, Engelen & Kuepper, 2012; Read, Sarasvathy, Dew & Wiltbank, 2016; Engel, van Burg, Kleijn & Khapova, 2017; Matalamäki, 2017; Kerr & Coviello, 2019; McKelvie, Chandler, DeTienne & Johansson, 2020);
- **Value co-creation** (O'Cass & Ngo, 2011; Vargo & Lusch, 2004, 2008, 2011, 2016, 2017 & 2018; Vargo, Maglio & Akaka, 2008; Whalen & Akaka, 2016; Ranjan & Read, 2017; Fan & Luo, 2020);
- **Co-created market opportunities** (Sarasvathy, 2001a, b, 2008; Vargo *et al*., 2008; Fisher, 2012; Whalen & Akaka, 2016; Ghorbel, Hachicha & Boujelbène, 2017; Welter & Kim 2018); and
- **Co-created growth opportunities** (Wiltbank, Read, Dew & Sarasvathy, 2009; Read *et al*., 2009a, b; Laskovaia, Shirokova & Morris, 2017; Smolka, Verheul, Burmeister-Lamp & Heugens, 2018).

Effectuation studies are still transitioning between qualitative and quantitative methods, enabling some authors to argue about the validity of the theory (Perry *et al.* 2012; Arend, Sarooghi & Burkemper, 2015; Read *et al.,* 2016). Scholarly work on effectuation has been described as incomplete, inconsistent in places and not obvious in application (Read *et al.*, 2016; Welter & Kim, 2018). Similarly, effectual networks (Kerr & Coviello, 2019), value co-creation (Whalen & Akaka, 2016; Ranjan & Read, 2016) and co-created market opportunities (Whalen & Akaka, 2016) share the same criticism.

Effectual networks evolve through the application of a cycle of expanding means and converging constraints to co-create value that transforms current market realities into newly co-created market opportunities (Sarasvathy and Dew, 2005a). Effectual networks, value co-creation and co-created new market opportunities share the common conceptualised

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context of uncertainty (Sarasvathy & Dew, 2005a; Read, Song & Smit 2009b; Ranjan & Read, 2016; Whalen & Akaka, 2016; Vargo & Lusch, 2016).

An uncertain environment is seen as endogenous to effectual activities where effectuators seek to co-create it (Read *et al.,* 2009a, b). Effectuation situates the entrepreneur as the co-creator of opportunities (Read *et al*., 2009a, b). This study focuses on behaviours of the individual corporate entrepreneur – called a professional financial planner – to determine whether they use co-created market opportunities to co-create growth for their practices.

Empirical support for effectually co-creating market opportunities is yet to be established. This study has adopted the description of effectuation as behaviours that expert entrepreneurs use in uncertain and dynamic environments to create products, firms and markets (Sarasvathy, 2001a, b; Sarasvathy & Dew, 2005a; Sarasvathy, 2008). It further enhances this conceptualisation as behaviours that co-create value, effectual networks and co-created market and growth opportunities.

Effectuation theory explains that in uncertain contexts with no specific goals, entrepreneurs partner with self-selected stakeholders to co-create a network that produces a chain of commitments to expand their means (who am I, what do I know and who do I know) and converge their collective constraints to co-create new products, firms or markets (Sarasvathy, 2001a, b, 2008). These network commitments are decided upon based on an affordable-loss decision criterion while maintaining the flexibility to embrace contingencies that nest opportunities. These core principles of effectual behaviours are used to control instead of predict an uncertain future through co-creating possibilities with a given set of means (Sarasvathy, 2001a, b). New products, firms or markets are the means to exploit opportunities (Sarasvathy, Dew, Velamuri & Venkataraman, 2003; Perry *et al*., 2012). An effectual network is described as a collective of like-minded individuals relying on effectual logic (Sarasvathy & Dew, 2003, 2005a; Kerr & Coviello, 2019). These effectual networks eventually mature to become new markets and firms (Sarasvathy & Dew, 2003).

Entrepreneurial marketing lies at the intersection of entrepreneurship and marketing domains, where value co-creation is posited to be its primary research domain (Coviello and Joseph, 2012; Alvarez, Barney & Anderson, 2013; Whalen & Akaka, 2016). An

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entrepreneurial-market opportunity has been defined as a set of ideas, beliefs and actions enabling the creation of future goods and services in the absence of current markets for said goods and services (Sarasvathy *et al.*, 2003). The service-science theory as represented by the S-D logic of Lusch and Vargo (2004) posited that it is not the product that must be emphasised but the value that product represents. This logic emphasises value co-creation and the customer at the centre of market transformation processes. Value is something that is co-produced in a network and created 'in use' (Ranjan & Read, 2016; Whalen & Akaka, 2016).

In effectuation theory, co-created market opportunities are represented by products, firms and markets (Sarasvathy & Dew, 2005a), whereas in entrepreneurial marketing and service science, co-created market opportunities are represented by value co-creation and (re)formed market activities (Ranjan & Read, 2016; Whalen & Akaka, 2016). This study posits that it is these co-created market opportunities that determine the teleological, ambiguous and unpredictable effectual growth opportunities desired by corporate entrepreneurs (Sexton, 1997). This study provides empirical evidence to support these claims.

Co-created market opportunities and co-created growth opportunities are pieces of a conceptual puzzle that require empirical evidence to theoretically situate themselves into a model. Entrepreneurial-marketing theory suggests that new or (re)formed markets and phenomenologically created value propositions are reflective indicators of co-created market opportunities (Whalen & Akaka, 2016). This suggests that new markets and value co-creation are necessary for co-created market opportunities to exist. Growth opportunities, on the other hand, are dependent upon market opportunities. Read *et al.* (2009b) empirically evidenced the positive relationship between effectual principles and new venture performance. Intersecting effectuation, entrepreneurial-marketing and service-science theories allows this study to conceptually stitch together the theoretical pieces and empirically establish a process model for effectually co-creating growth opportunities.

Co-creation is defined as an interactive process between at least two willing resource integrating actors (Lusch & Vargo, 2004), mutually creating value through specific form(s)

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of collaboration (Skarzauskaite, 2013). The term co-created market opportunities has been defined (Whalen & Akaka, 2016:69) as an

> "…iterative process in which the joint development and communication of value propositions (represents how value is created and exchanged with a beneficial actor), the derivation (through use) and determination (in a particular social and temporal context) of value and the (re)formation of markets to both generate and shape market imperfections."

Market imperfections are defined as opportunities (Alveraz & Barney, 2010) that have been co-created (Whalen & Akaka, 2016).

A practical example would be a financial planning practice that partners with a real estate development firm. The real estate agent sources prospective buyers for new homes or rental investments. The financial advisor sources funding from financial institutions for the asset purchase and takes care of the credit life-insurance for the surety on the funding and short-term insurance for the risks related to the asset. The fees earned by the real estate agent is the commission on the sale of the asset. The real estate agent will also share in the fees earned by the financial advisor on the bond origination for the funding of the asset and the commissions on the credit life-assurance cover on the creditor's life and short-term insurance cover for the asset. In addition, should the creditor have a large asset portfolio, the financial advisor could also offer fiduciary services in terms of wills and trusts. Should the creditor be a business owner with partners, the financial advisor could offer business assurance solutions in the form of buy and sell arrangements, should one of the partners pass away; contingent liability on long-term funding arrangements for the business needs; keyman insurance for any staff dependencies and employee benefits for the staff. The value that financial advisors and real estate agents create is iteratively determined through many interactions – a jointly developed economic model that supports a value proposition which gives expression to the service experiences their client will enjoy, specific to their context. This co-created bundled convenience for homeowners, created by the collaboration between a financial planner and a real estate agent, seeks to transform traditional markets that large banks and estate agents dominate and as a result, alter the industry power balance in favour of the intermediary.

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The dimensions of jointly developing and then communicating a value proposition are similar to the concept of 'value offering' as conceptualised by O'Cass and Ngo (2011). Value offering is captured by the value dimensions of co-creation of the consumption experience with the customer. Customers are seeking product/service performance (quality, innovative features and personal preferences) at a price that is reasonable and affordable through relationships that are mutually beneficial and create hassle-free purchasing experiences (O'Cass & Ngo, 2011). Value co-creation signals a symbolic value possibility by both customers and suppliers (Whalen & Akaka, 2016) and represents how the actors will positively create value for each other (Read *et al*., 2009a, b).

South Africa currently finds itself within the cycle of political chaos where the dominant political party is showing signs of factional fatigue (Mathonsi & Sithole, 2020). The economy is unable to break a long cycle of slow growth, deepening its problems of unemployment, chronic poverty, inequality and crime (World Bank, 2018; Mathonsi & Sithole, 2020). Its sophisticated developed-world financial system is experiencing a comprehensive transformation - driven by the introduction of innovative FinTechs and modern Prudential and market conduct regulations known as Twin Peaks. The South African insurance industry is at the heart of these changes (PwC Africa Insurance Survey, 2018).

Professional financial planners, in particular, play a critical role in navigating this uncertain context through facilitating financial and intermediary services. The uncertain economic outcomes of their activities are dependent upon the confidence they can create for their clients in the various products they offer and service providers they represent. This makes them ideal corporate entrepreneurial candidates for this study. In addition, the high levels of uncertainty in South Africa's insurance industry, a representative microcosm of a developed-world financial services industry, makes it an ideal context to situate this study's research problems.

This study creates the empirical validity needed to support the theoretical concept of effectuation (Arend *et al*., 2015) as the behaviour used to effectually co-create new markets and growth opportunities through effectual networks and value co-creation. Professional financial planners in the South African life assurance industry have been used to achieve this aim.

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With growth being the very essence of entrepreneurship, this study sees growth as denoting a change in amount and not in improvement quality as a result of some development process (Sexton, 1997; Davidsson, Achtenhagen & Naldi, 2010). It adopted the view that entrepreneurship is a process of creating future goods and services in the absence of current markets for them (Shane & Venkataraman, 2000).

In conclusion, this study assesses whether professional financial planners are effectuators that construct effectual growth opportunities through co-created market opportunities. This study has empirically tested whether professional financial planners achieve this by coalescing their effectual networks and value co-creation activities. This is consistent with Eisenhardt's (1989) view of good theory; a parsimonious, testable and logically coherent design.

1.2 PROBLEM STATEMENT

After having set the scene and described the field of study within its parent theories, the study focuses on the research problem and problem statement in the next section. It outlines the theoretical, practical and empirical shortcomings within the effectuation, entrepreneurial-marketing and service-science domains. This assisted with creating a boundary around the research problem and with positioning the purpose, methodology and research questions that follow.

Effectuation and entrepreneurial-marketing theories remain vulnerable to critique in the absence of advance linkages to other developed theories and empirical studies that test their applications (Arend *et al*., 2015). Lack of research instruments also contributes to the poor operationalisation of these theoretical concepts. There is limited knowledge on the impact of effectuation theory on entrepreneurial practices in different contexts (Read *et al.*, 2016; Welter & Kim, 2018). This provided the motivation for a quantitative research design for this study. It used a survey instrument in an uncertain South African financial services industry context by targeting professional financial planners. Data related to their practice and behaviours over two years spanning the period from November 2017 to November 2019 was gathered for analysis.

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How to create effectual growth opportunities for firms in uncertain and unpredictable contexts is a broad practical problem faced by many business people pursuing growth strategies (Vargo & Lusch, 2004; Reymen *et al*., 2015). Traditional methods found in the marketing domain fail in uncertain or unpredictable contexts, as they are based on predictable logic or causation (Sarasvathy, 2001a, b; Read and Sarasvathy, 2012). This study proposes that professional financial planners become effectuators in order to create effectual growth opportunities under conditions of uncertainty. It proposes that the determinants of effectual growth opportunities under the temporal context of uncertainty are the creation and interaction between effectual networks and value co-creation, mediated by co-created market opportunities. Behaviours of professional financial planners were used to gather data to assess the validity of these proposals.

This problem becomes apparent when expert entrepreneurs do not know ex ante *who* are the participants in the process of creating effectual growth opportunities, particularly when demand is also unknown and unpredictable – a problem also faced by professional financial planners. Sarasvathy (2001a), in her seminal article, posited that effectual behaviours are necessary under these conditions to create positive organisational performance. Expert corporate entrepreneurs create and manage new networks of partnerships, stitched through a set of pre-commitments, to expand resources and converge constraints (Sarasvathy, 2001a, b; Sarasvathy & Dew, 2003). This conceptualisation of effectual networks has not been subjected to empirical evaluation in the extant literature - neither has its application extended to professionals as outcomes of corporate entrepreneurship. This study proposes that South African professional financial planners create effectual networks as determinants of effectual growth opportunities under the temporal context of uncertainty.

Entrepreneurial marketing, being at the nexus of entrepreneurship and marketing domains, remains deprived of developed theory, specifically under the context of uncertainty and dynamic social and economic markets (Morris & Jones, 1995; Miles, Gilmore, Harrigan, Lewis & Sethna, 2015; Whalen & Akaka, 2016). In the service-science theory, S-D logic of Vargo and Lusch (2004) has been conceptualised in the marketing domain under uncertain and dynamic market perspectives. Both entrepreneurial marketing and S-D logic use value co-creation as a determinant or foundational premise of their models (Vargo & Lusch, 2004, 2008, 2016; Whalen & Akaka, 2016). Both logics make casual reference to effectuation as

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a theory that is evolving alongside them, where behaviours are enacted under similar conditions (Read & Sarasvathy, 2012; Whalen & Akaka, 2016).

Value co-creation has been conceptualised as interactive efforts to co-construct consumption experiences (O'Cass & Ngo, 2011) and the joint production and consumption of value in a service exchange process (Ranjan & Read, 2016). The interactive efforts of value creation have been conceptualised to take place in networks (Vargo & Lusch, 2016) and as a co-determinant to co-create market opportunities (Whalen & Akaka, 2016). Empirical evidence for the interactive relationship between value creation and effectual networks, and value creation and co-created market opportunities has not been established. The problem of determining *what* value will be co-created in the process of co-creating growth opportunities needs to be resolved.

Theoretically, market opportunities are co-created through the (re)formation of markets and phenomenologically developed value propositions under conditions of uncertainty (Whalen & Akaka, 2016). Markets are formalised effectual networks and are, in essence, outputs of the effectual process (Sarasvathy, 2001a, b, 2008; Read & Sarasvathy, 2012). The problem of *why* effectual behaviours are needed to co-create growth opportunities must be resolved if the application of the theory of effectuation is to be reliable and valid. Empirical evidence linking co-created market opportunities and effectual growth opportunities is established in this study.

Finally, the problem of *how* effectual behaviours are sustained has not been given attention in the extant literature. This study proposes that effectual growth opportunities are the final destination and the beginning of new effectual journeys for effectuators. It serves as the measure of success in uncertain contexts. Resolving this problem would create a stitch that would coalesce effectuation, entrepreneurial-marketing and service-science theories for future development.

In conclusion, the problems of how to co-create market opportunities, who will be involved, what value will be co-created, why actors will get involved and how the effectual behaviours will be sustained to effectually co-created growth opportunities are resolved through linking

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effectual constructs with the constructs of value co-creation and co-created market opportunities found in S-D logic, and entrepreneurial-marketing theories.

1.3 PURPOSE STATEMENT

This research conceptually and empirically establishes that professional financial planners use co-created new market opportunities to co-create growth opportunities under conditions of uncertainty. This would position effectuation, entrepreneurial-marketing and service-science theories as necessary in entrepreneurial teaching content, future theory development and in creating a practical model for growing firms.

In a World Bank (2018) update on South Africa's economic potential, concern was raised about it being trapped for decades in low growth and high inequality with the consequences of persistently high unemployment, social unrest and crime. According to South Africa's National Development Plan 2030 (NPC, 2012), inclusive growth, opportunity development, capacity and capability building, social compact and cohesion and active citizenry dominates the South African Government's agenda in response to these concerns (South African Government, 2015).

Besides these challenges, South Africa's financial services industry is undergoing transformation through the Twin Peaks legislation intended to regulate market conduct - to achieve the objective of treating customers fairly. Under the Twin Peaks legislations, two regulators have been established: The Prudential Authority to maintain stability of the financial system and the Financial Sector Conduct Authority responsible for market conduct and consumer protection. The impact of these and related regulatory changes such as the Retail Distribution Review, Financial Sector Regulation Bill and Conduct of Financial Institutions Bill, has generated uncertainties about the future practices and careers of professional financial planners. According to the 2016/2017 Integrated Report on growing the financial planners' profession, digitally enabled engagement platforms were additional drivers of uncertainty identified in the ever-growing competition and shrinking consumer-market context faced by professional financial planners (FPI, n.d.).

This study aims to discover how professional financial planners create growth opportunities for their practices in the context described above. Empirically testing effectuation,

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entrepreneurial-marketing and service-science theories in real social contexts of corporate entrepreneurs - like professional financial planners – in a financial services industry, in South Africa or on the African continent, has never been conducted before.

This study's theoretical, empirical and practical contributions to the body of knowledge were guided by Whetten's (1989) framework of describing legitimate and value-added contributions to theory development. This was done by answering the journalistic questions of 'what', 'how', 'why', 'who', 'when' and 'where' (Fisher, 2012) as building blocks of theory development. It also sought to answer the questions of 'what is new', 'so what', 'why so', 'why now' and 'who cares' for reviewers of this study to judge the relevance of any substantive issues raised (Whetten, 1989).

Empirically examining the relationships between effectual growth opportunities and the effectual process resolved how the process sustains itself. Entrepreneurial marketing and service science theories emphasise networks (who are the actors in creating), value co-creation (what are they creating) and co-created market opportunities (why are the creating) as process outcomes. Effectuation theory emphasise markets, products and firms as outcomes (Sarasvathy & Dew, 2005a). Synthesising these theories will complement and complete a small part of a developing puzzle in entrepreneurship in an uncertain and unpredictable context (the when and where). It also provides reliable and validated research instruments to measure effectual behaviours, effectual networks, value co-creation, co-created markets opportunities and effectual growth opportunities.

In conclusion, empirically examining whether effectual behaviours are used by professional financial planners to effectually co-create growth opportunities would add credence to establishing effectuation, entrepreneurial marketing and service science as pragmatic theories that can be applied to create demand for the services offered by professional financial planners and other practitioners. Through this process, the study seeks to change extant entrepreneurial scholarly views and practices of organisational and pedagogic science by providing implementable solutions supported by seasoned, coherent thinking and compelling evidence. It also seeks to stimulate new discussions on strengthening the links between effectuation, entrepreneurial-marketing and service-science theories.

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1.4 METHODOLOGY

After providing the justification for this research through its purpose, the study progresses to provide a brief introductory overview of its methodology. Justification of the methodology this study used is further elaborated on in Chapter 2 and 3.

This study explains the behaviours of professional financial planners as experts in their field under conditions of uncertainty. Their behaviours are the unit of analysis and the professional financial planner, as the subject, serves as its level of analysis. The Financial Planning Institute of Southern Africa (FPI) is an acknowledged professional body for financial planners and is an affiliate member of the International Financial Planning Standards Board Ltd (IFSB) based in the United States of America. The FPI's Integrated Report 2016/2017 (FPI, n.d.) boasts that its members, who bear the CFP® accreditation, are considered financial planning experts globally. The FPI partnered with the researcher: evaluated the suitability of the structure and items of the questionnaire, distributed the questionnaire to all their members, collected and shared the raw data in a manner that was free of any personal information or contact details.

Using Whetten's (1989) framework of answering the questions of 'who', 'where' and 'when' to set the boundary limitations on the range of a theory's application: the uncertain context within which professional financial planners operate in South Africa provided this study with the ideal temporal contextual setting (where), timing (when) and participants (who) for this study. To investigate and empirically determine whether the theory of effectuation, entrepreneurial marketing and service science benefit corporate entrepreneurs, an electronic survey using Survey Monkey® was designed with instruments related to the concepts that were native to the theories used. The FPI emailed the survey to 6000 of its members.

A sample survey was this study's choice of research method over Scandura and Williams's (2000) modified version of McGrath's typology of research strategies. These strategies include a formal theory/literature review, sample surveys, laboratory experiments, experimental simulation, a field study collecting primary data, a field study collecting secondary data, a field experiment, a judgement task and a computer simulation (Matalamäki, 2017). The trade-offs for the choice of research method used was guided by

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the decision framework as suggested by McGrath (1982): a decision related to generalisability of the population that would support external validity, precision in measurement and control of behavioural variables that affect internal and construct validity, and realism of context. McGrath (1982) suggested that surveys are good at population generalisability but weak on realism and measurement precision.

The data was collected by the FPI on behalf of the researcher and thus considered to be primary data (Scandura & Williams, 2000). The survey questionnaire that was used by the FPI was designed by the researcher specific to financial planners' behaviours in their practices and serves to strengthen the realism of context trade-off. It included Likert rating scales to improve measurement precision and construct validity (Scandura & Williams, 2000) by ensuring that at least a minimum of three items in the questionnaire related to each construct established from the literature review.

Survey research methods are grouped into three types of surveys: self-administered surveys (including mail, intercept, computer and central location-based surveys), phone interviews (including human-administered and computer-assisted telephone surveys) and personal face-to-face interviews (including pre-scheduled and intercept-based interviews) (Cooper and Schindler, 2014:217, 223:238). Based on a review of the three types of survey methods, the most suitable choice for the proposed study on the behaviours of professional financial planners was a web-based questionnaire like Survey Monkey®. The motivation for this choice of survey research method included the ability to access a wide range of respondents, the cost-effectiveness of the approach, the ability to use a more complex survey instrument (including the use of complex multiple-choice questions) and rapid data collection. Another key motivation is that Survey Monkey® is the preferred method employed by the FPI for collecting other types of data from their members. Their members were familiar with and responsive to the online self-administered survey methods.

An exploratory factor analysis (EFA) (Churchill, 1979; Worthington & Whittaker, 2006) and confirmatory factor analysis (CFA) (Gerbing & Anderson, 1988; Hinkin, 1995; Diamantopoulos & Winklhofer, 2001; Worthington & Whittaker, 2006) were performed to support the construct validity. It was followed by a covariance-based structural equation modelling (CB-SEM) to determine whether the theory of effectuation, entrepreneurial

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marketing and service science fits the reality represented by the data collected (Hair, Ringle & Sarstedt, 2011). The study seeks to confirm that financial planners use effectual behaviours to co-create growth opportunities for their practices through co-created markets opportunities by using effectual networks and value co-creation behaviours.

In conclusion, a Likert-scale survey questionnaire was sent to 6000 CFP® professionals using Survey Monkey® to gather behavioural data specific to the application of the theories of effectuation, entrepreneurial marketing and service science. The questionnaire items were designed to gather data specific to CFP® professionals use of effectual behaviours, effectual networks, value co-creation, co-created market opportunities and co-created growth opportunities. Finally, an EFA, CFA and CB-SEM path analysis were conducted to ensure the reliability and validity of the research methods and findings of this research.

1.5 RESEARCH QUESTIONS

After outlining the research problem, purpose and methodology, this study's research questions are now framed. This has been done to direct propositions and hypotheses that were used to gather research data to answer the following research questions:

- How do professional financial planners use effectual behaviours to co-create growth opportunities for their practices in uncertain contexts?
- How do professional financial planners use effectual behaviours to determine *who* become the actors in the process of creating effectual growth opportunities for their practices?
- How do professional financial planners use effectual behaviours to determine *what* value should be co-created when creating effectual growth opportunities?
- Why do professional financial planners use effectual behaviours to create effectual growth opportunities?
- How do professional financial planners sustain their effectual behaviours?

In conclusion, the above research questions assisted in framing research propositions expressed in Chapter 2 and hypotheses expressed in Chapter 3. The data that was collected provided the statistical evidence to either accept or reject the hypotheses that

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answered the above research questions. In so doing, it provided solutions to the research problems expressed above and satisfied this study's purpose.

1.6 OUTLINE OF THESIS

After introducing the study, articulating the problem statements, purpose, methodology and research questions, this study progresses to briefly outline the structure of the thesis.

Chapter 1 provides the background of the study that contextualises the research problem, propositions and contributions. It articulates the purpose statement, methodology and research questions to guide the research design. Delimitation of scope, together with justification for conducting research on behaviours of professional financial planners - as corporate entrepreneurs in the South African insurance industry - are also provided in the next section.

Chapter 2 synthesises CE and links to effectual entrepreneurial behaviours. It describes what effectual behaviours are, the theoretical tensions that are at play and how this study applied these behaviours within its context.

Chapter 3 analyses empirical effectuation studies, evaluates who they measured, what they measured and how these were measured. It also synthesises entrepreneurial-marketing and service-science theories to provide the intersections required to created research proposals. This covers both supporters and detractors. As a consequence, it creates a new theoretical framework to address theoretical gaps that would achieve were higher-order educational objectives (Perry, 1998). This process yielded theoretical propositions nested within theoretical gaps: the social fabric, the value fabric and opportunity fabric of effectuation. For quantitative studies Perry (1998) recommended unearthing propositions (issues) from theory that are closed and that would require numbers as data to solve when building a theoretical foundation. These should be followed by hypotheses, in the methodology chapter, that are statistical in form and express the operational definitions of constructs. The entrepreneurial-marketing and service-science theories of S-D logic that focus on co-created market opportunities and value co-creation provide the conceptual anchors to achieve this objective. Lastly, it introduces effectual growth opportunities as an outcome of the effectual process that stitches together the theories of effectuation,

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entrepreneurial marketing and service sciences. This leads to a process model of co-creating effectual growth opportunities.

Chapter 4 describes and justifies the research methodology choice, creates hypotheses, unit of analysis, and study participants. It makes specific reference to the population, sample frame and sample size, instruments used, administration thereof to collect the data and treatment of the data before it was analysed. It addresses the analysis methods employed and ethical issues of concern (Perry, 1998). This study's research design and methodology was framed to close the gap identified by McKelvie *et al.* (2020) in his review of empirical effectuation studies - variance versus process-based research.

Chapter 5 presents an analysis of the results and their relevance to the research problem, propositions and hypotheses. Summary tables and figures are presented to identify the patterns in the data (Miles & Huberman, 1985; Perry, 1998). This chapter does not draw conclusions or draw comparisons with other authors' results. It is structured around the research problem, questions, propositions and hypotheses (Brown, 1996).

Chapter 6 discusses the results and limitations of the study. It draws conclusions about the research problem, propositions and hypotheses based on the findings and overall conclusion of the research project (Phillips & Pugh, 1987; Perry, 1998).

Chapter 7 discusses the recommendations and the theoretical, methodological and managerial implications of this study's findings. It also articulates any implications for further research.

1.7 DELIMITATION OF SCOPE

After describing the structure of the thesis, the study now progresses to draw attention to its delimitations. This seeks to build a fence around the findings of this research. Delimitation of scope are variables within the control of the researcher, distinct from limitations that are beyond the researcher's control (Perry, 1998). This study delimits the scope of its research to professional financial panners as outcomes of corporate entrepreneurship in the South African financial services industry. It focuses on the behaviours that professional financial planners use to grow their practices.

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1.7.1 Professional Financial Planners as outcomes of corporate entrepreneurship in the South African Financial Services Industry

A typical career path of South African professional financial planners, like Kobus Kleyn and Logan Naidu, begins at one of the larger insurers as a "tied" agent" – dedicated sales employee, bank or corporate brokerage (Gareth Stokes, 2011). Eventually they face the entrepreneurial decision, "should I stay or go" to build something of value they own. The outcome of this decision, similar to most corporate entrepreneurs, hinges on their willingness to sacrifice many corporate benefits to satisfy their needs to self-determine 'what to do' and 'how to do it' as an independent financial advisor. Both have variable commission structures, with agents earning a small basic fixed salary as well. Without quickly establishing a client base, building networks and continuous training – survival as a professional financial planner is short lived. Longevity in the game, on its own, is a measure of performance as earnings are completely variable in an environment of consumer distrust and grudge purchase decisions.

Those that leave and start their own practices are known as 'Independent Financial Advisors' as opposed to 'tied agents'. Even though considered as 'independent', their formal training and induction into the industry by larger insurers, biases their value propositions in favour of their former employer – a predetermined outcome and rationale for investing in these advisors by the larger insurers. In the last few years, legislation led transformation of the South African Insurance Industry has resulted in the formation of Insurer owned large networks. The Atlas Magazine (2020) provided the following examples of these networks:

- Succession Financial Planning (SFP), the largest independent insurance brokerage in South Africa – owned by Sanlam Group, the largest Life Insurer by turnover.
- Masthead – owned by Old Mutual Life, second largest Life Insurer by turnover.
- Momentum Consult – owned by Momentum Metropolitan Life, third largest Insurer by turnover.

As a result, 'Independent Financial Advisors' are of particular interest to the researcher as an outcome of corporate entrepreneurship – particularly the behaviours they develop to survive and grow their practices in an uncertain context. Their entrepreneurial journey of

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establishing their own practices and joining independent broker networks created by large insurers to survive and grow, is a particularly interesting phenomenon.

Among the community of 'Independent Financial Advisors' there are those that distinguish themselves as experts in the field and acquire the title 'CFP®'. This distinction is afforded by the FPI after meeting strict education, experience, examination and ethics requirements. These experts – known as professional financial planners - are the subjects of this study. The behaviours they use to co-create market opportunities to grow their practices, serves as a lever to validate entrepreneurial theories used in this study.

1.7.2 Uncertainty in the South African Financial Services Industry

The concept of effectuation has been based on behaviours of expert entrepreneurs under Knightian uncertainty (Wiltbank *et al.*, 2006; Sarasvathy, 2008; Read *et al*., 2009a, b; Chandler, DeTienne, McKelvie & Mumford, 2011; Brettel *et al*., 2012; Perry *et al*., 2012; Fisher, 2012; Arend *et al*., 2011; Welter & Kim, 2018). Knightian uncertainty is the condition where outcomes are unknown and their probability distribution unknowable (Knight, 1921; Sarasvathy & Kotha, 2001). In other words, uncertainty is present when outcomes are not known and cannot be predicted (Read *et al*., 2009a, b). Milliken (1987:136) described uncertainty as "an individual's perceived inability to predict something accurately" because they experience a lack of sufficient information about their environment.

Milliken (1987) distinguished between state, effect and response uncertainty. State uncertainty is the inability to predict the behavioural changes in a firm's environment. Effect uncertainty is the inability to predict the implications of these changes on a firm. Response uncertainty is the inability to determine the firm's response options and their consequences.

All three types of uncertainties are present with South African professional financial planners: unpredictable economic and political events – including corruption, policy and regulatory uncertainty - high unemployment and low private sector investment, widening skills gap, inequality, poverty, social discontent and violent crime (Williams, 2020). The South African financial service industry presents an environment where changes, their effects, response options and their associated consequences are difficult to predict. As a

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result, Sarasvathy and Kotha (2001:8) proposed effectual logic that states - “the extent to which we can control the future, we do not need to predict it”.

1.7.3 Expert Financial Planners

Effectuation studies position expert entrepreneurs as someone who creates superior performance in uncertain contexts by using control strategies developed through deliberate practice in their domain of expertise (Dew *et al*., 2009a). Sarasvathy (2009) defined an expert entrepreneur as having at least 10 years’ experience starting and running multiple firms and taking at least one public.

Given a lack of sufficient information, which creates perceived uncertainty, experts use analogical reasoning and holistic conceptual thinking, and weigh predictive information that is not dependent on large quantities of data (Dew *et al*., 2009a). Instead of predictive rationality, under time pressure and uncertainty, expert entrepreneurs rely on heuristics and biases to create rather than predict the future (Sarasvathy, 2001a, b; Sarasvathy & Dew, 2005b; Read *et al*., 2009a, b; Kraaijenbrink, Spender & Groen, 2010).

One of the main critiques of effectuation is that its developmental progress, sparse empirical studies and fragmented growth have made it difficult to build on prior studies (Baron, 2009; Fischer & Reuber, 2011; Arend *et al*., 2015, McKelvie *et al*., 2020). One of the contributing factors is that the concept of the expert entrepreneur, as originally theorised by Sarasvathy (2001a, b), has been abandoned. This study uses behaviours of professional financial planners as its unit of analysis - assessing whether they also use the theorised expert entrepreneurial effectual behaviours in an uncertain context - to co-create effectual growth opportunities. This introduces a novel direction for further studies in effectuation, entrepreneurial marketing, services sciences, entrepreneurship and corporate entrepreneurship by using professional services firms.

As a practical example, professional financial planners may, in the face of uncertain and unpredictable demand for their services, partner with clients, like attorneys and accountants who would potentially have referral clients. These networks may yield partnerships that result in a cycle of expanding resources like new clients, technology, investments or expertise. This process will simultaneously constrain the set of possible value co-creating

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activities through conditions, expectations and personal preferences to stitch together a new market opportunity. The interactions within the effectual network could phenomenologically co-create an innovative value proposition that would co-create a new set of financial services opportunities. These created market opportunities are expected to yield growth opportunities.

In conclusion, professional financial planners are experts in their field and outcomes of deliberate corporate entrepreneurship in the South African Financial Services Industry. Their migration from corporate agents to professional financial planners that start their own practices, is an entrepreneurial journey not studied in extant literature. Their journey and practice navigate an uncertain environment that is unpredictable. Effectual behaviour, theorised using expert entrepreneurs, will be used to assess whether they are also used by professional financial planners to co-create market and growth opportunities that serve to transform market realities.

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2 CORPORATE ENTREPRENEURSHIP AND EFFECTUAL BEHAVIOURS

2.1 INTRODUCTION

This section reviews CE and links to effectual behaviours among professionals – particularly professional financial planners. The literature review process parsimoniously examines the determinants, processes and outcomes of CE in uncertain contexts. It identifies pathways of academic CE literature that create links to effectual behaviours to situate the theoretical gaps this study pursues.

2.2 CORPORATE ENTREPRENEURSHIP

This study's review of CE evaluates the theoretical reviews conducted by Sakhdari (2016) and the empirical studies reviewed by Mustafa, Gavin and Hughes (2018). Sakhdari (2016) used Shepherd, Williams and Patzelt's (2015) criterion sampling method by using keyword searches in top management and entrepreneurship journals to organise their review into conceptual CE articles, antecedents of CE - grouped under individual and firm-levels of analysis - and CE outcomes. Mustafa *et al.* (2018) focused their review on empirical studies published between January 1985 and December 2016, with a special focus on employee entrepreneurial behaviour. Most professional financial planners in the South African financial services industry are the result of employee entrepreneurial behaviours of traditional large South African insurance corporates (Stokes, 2011; Edoo-Sirkissoon, 2016).

A critical examination of CE literature reviewed in this study allowed for the creation of two distinct theoretical camps of CE literature: one being corporate strategic activities (Zahra, 1996; Sharma & Chrisman, 1999; Kuratko & Audretsch, 2009; Morris, Kuratko & Covin, 2011) and the other firm behaviours (Miller; 1983; Murimbika & Urban, 2013; Covin & Miller, 2014; Kuratko, Hornsby & Covin, 2014; Wales, 2016; Zahra, 2015; Urban & Verachia, 2019). The scope of the levels of analysis includes both individuals and firms (Sambrook & Roberts, 2005; Sakhdari, 2016; Sakhdari & Farsi, 2016). This study adopts Sharma and Chrisman's (1999, p:18) definition of CE as the "process whereby an individual or group of individuals, in association with an organisation, create a new organisation or instigate renewal or innovation within that organisation", as it remains the most widely used in academic journals.

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2.2.1 Corporate Strategic Activities

Corporate strategic activities cover the dimensions of innovation, venturing and strategic activities (Zahra, 1996; Sharma & Chrisman, 1999; Morris & Kuratko, 2002; Ireland, Covin & Kuratko, 2009; Phan, Mike, Deniz & Wee, 2009; Urban & Varachia, 2019).

Innovation is viewed as transforming an existing business or creating a new business (Han & Park, 2017); new products, services, systems, markets or plans (Damanpour, 1992; Rogers, 1998; Trang, 2018) or the development and implementation of new ideas (Van de Ven, 2017). What is significant is that innovative business opportunities can be created in small and medium enterprises (Sarasvathy, 2001a, b, 2008; Covin and Miles, 2007; Heinonen & Toivonen, 2008; Keil, McGrath & Tukiainen, 2009; Evald & Sendorovitz, 2013) and in large firms (Guth & Ginsberg, 1990; Block and MacMillan, 1993; Sharma and Chrisman, 1999; Simon, Houghton & Gurney, 1999; Birkinshaw, Batenburg & Murray, 2002; Elfring, 2005; Ireland *et al.*, 2009) contexts. The transformation process could also be radical (Rogers, 1998; Zahra, 2015) or incremental (Kuratko & Audretsch, 2009; Zahra, 2015).

Corporate venturing incorporates creating or investing in a new business within or external to an existing firm (Narayanan, Yang & Zahra, 2009; Kuratko & Audretsch, 2013; Abrell & Karjalainen, 2017). This is also expanded to include domestic markets (Zahra, Neubaum & Huse, 2000; Yiu, Lau & Bruton, 2007; Yiu & Lau, 2008) and international markets (Zahra & Hayton, 2008).

Strategic activities are best described by Covin and Miles (1999) along the dimensions of

- Strategic renewal, where a firm redefines its relationship with the market;
- Sustained regeneration, where a firm continuously introduces new products and services and enters new markets;
- Firm rejuvenation that involves changing internal processes, structures or capabilities; and
- Domain redefinition that involves a new product market-play not recognised or exploited by competitors.

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Kuratko and Audretsch (2009) added 'business model reconstruction as (re)designing a firm's core business model for operational efficiency or differentiation' as an additional dimension.

2.2.2 Firm and Individual Behaviours

Kuratko and Audretsch (2013) identified innovativeness, proactiveness and risk-taking behaviours as individual-level behaviours (Lau, Shaffer, Fai Chan & Wing Yan Man, 2012; De Jong, Parker, Wennekers & Wu, 2015) that aggregate on a firm-level (Covin & Slevin, 1989; Lumpkin & Dess, 1996; Rauch, Wiklund, Lumpkin & Frese, 2009). These behaviours are commonly referred to as entrepreneurial orientation (EO) (Lumpkin and Dess, 1996; Ireland *et al*., 2009; Sarooghi, Libaers & Burkemper, 2015; Urban & Verachia, 2019) in CE literature. The construct validity and measurement model of innovativeness, proactiveness and risk-taking behaviours developed by Covin and Slevin (1989), were also confirmed by Das and Sahu (2018).

Innovativeness is generally viewed as recognising a problem and solving it by creating value for those affected (Kuratko, Hornsby & Bishop, 2005; Hornsby, Kuratko, Shepherd & Bott, 2009; Park, Kim & Krishna, 2014; Valsania, Moriano & Molero, 2016). This includes a willingness to engage in an opportunity to invest in a new product, market or technological process (Trang, 2018).

Proactiveness is self-initiating future-orientated actions to transform current situations by creating entrepreneurial environments (Zampetakis & Moustakis, 2007, 2010; Sieger, Zellweger & Aquino, 2013). Risk-taking behaviours relate to challenging an existing status quo (Heinonen & Toivonen, 2008).

Corporate entrepreneurial behaviours of proactiveness, risk-taking and innovativeness have been empirically supported by studies conducted by Sebora and Theerapatvong (2010), Valsania *et al*. (2016) and Wakkee, Elfring and Monaghan (2010). The analysis done by Mustafa *et al.* (2018) reveals that innovativeness is the most popular dimension of corporate entrepreneurial behaviour (Åmo & Kolvereid, 2005; Kuratko *et al.*, 2005; Rutherford & Holt, 2007; Hornsby *et al.*, 2009; Rigtering & Weitzel, 2013; Park *et al*., 2014; Valsania *et al*., 2016). The second was proactive behaviours (Wakkee *et al*., 2010; De Jong *et al*., 2013;

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Rigtering & Weitzel, 2013; Moriano, Molero, Topa & Mangin, 2014). Risk-taking behaviours were the third most common dimension of corporate entrepreneurial behaviour (Zampetakis & Moustakis, 2007, 2010; De Jong *et al*., 2013; Sieger *et al*., 2013).

2.2.3 Determinants of Corporate Entrepreneurship

2.2.3.1 Individual Level

Personality dimensions grounded in psychological variables provide the strongest empirical evidence of individual traits as predictors of corporate entrepreneurial success (Kiggundu, 2002; Clohessy, Holt & Rutherford, 2007). The commonly accepted five-factor model of personality defines personality in terms of extraversion, agreeableness, openness, conscientiousness and neuroticism (Clohessy *et al*., 2007). An individual's extraversion is represented by social, assertive and active tendencies; agreeableness by one's trusting, compliance and altruistic tendencies; openness by one's imaginative, unconventional and inventive tendencies; conscientiousness by one's thoroughness, confidence and dependability; and neuroticism by one's anxiety, tension and insecure tendencies (Clohessy *et al*., 2007).

Synthesising the antecedents of individual corporate entrepreneurial behaviours of the 21 empirical studies reviewed by Mustafa *et al.* (2018), this study can conclude that self-efficacy (Wakkee *et al.*, 2010), personality (Åmo & Kolvereid, 2005), proactiveness (Brunåker & Kurvinen, 2006), self-confidence (Brunåker & Kurvinen, 2006), emotional intelligence (Zampetakis, Beldekos & Moustakis, 2009), autonomy (De Jong *et al*., 2015), personal knowledge, experiences and networks (Wiklund & Shepherd, 2003; Rigtering & Weitzel, 2013), relationship with internal firm networks (Park *et al*., 2014), work discretion (Kuratko *et al*., 2005; Hornsby *et al*., 2009), bootlegging (Globocnik & Salomo, 2015), intrinsic goals, satisfaction with stakeholders and perception of the extent of local competition (Croonen, Brand & Huizingh, 2016) are the empirical determinants of individual corporate entrepreneurial behaviours.

2.2.3.2 Firm Level

Empirical findings have established a relationship between CE and firm-process factors related to management support, work discretion, rewards and reinforcement, time

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availability and organisational boundaries (Clohessy *et al*., 2007; Kuratko *et al*. 2014). An empirical assessment of these variables by Urban & Verachia (2019) on primary CE dimensions of attitude (risk-taking) and behaviour (proactiveness and innovativeness) (Covin & Slevin, 1989; Lumpkin & Dess, 1996) in a South African context, could only validate the antecedents of management support, rewards and reinforcement.

Management support is described as top management's willingness to facilitate, promote (Bhardwaj, Sushil & Momaya, 2007), champion and provide resources (Clohessy *et al*., 2007) for entrepreneurial actions (Urban & Verachia, 2019). Empirical support for management support's influence on innovativeness, risk-taking and proactive behaviours was established by Hornsby *et al.* (2009) and Urban and Verachia (2019).

Work discretion includes autonomy with decision-making (Urban & Verachia, 2019). Autonomy is the freedom to make decisions through calculated risks (Hornsby, Kuratko & Zahra, 2002). Work discretion involves the delegation of authority for decision-making without oversight (Hornsby *et al*., 2009). Top management's tolerance of failure is another dimension of work discretion (Hornsby *et al*., 2002; Clohessy *et a*l., 2007). Urban and Verachia (2019) could not establish empirical support for work discretion's influence on innovativeness, risk-taking and proactive behaviours, whereas a correlation was established by Hornsby *et al*. (2009).

Rewards and reinforcement include dimensions of performance-based rewards, achievement recognition and encouraging challenging work (Clohessy *et al*., 2007). They anchor the employer-employee relationship by bridging individual and organisational goals (Hornsby *et al*., 2009; Urban & Verachia, 2019). Empirical evidence for the influence of rewards and reinforcement on innovativeness, risk-taking and proactive behaviours was established by Urban and Verachia (2019) and Hornsby *et al*. (2009).

Time availability relates to evaluating workloads and job structures to support innovation (Clohessy *et al*., 2007). More specifically, to allow for a focus on the salient aspects of work that impact CE (Hornsby *et al*., 2009; Urban & Verachia, 2019). Urban and Verachia (2019) could not establish empirical support for work discretion's influence on innovativeness, risk-

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taking and proactive behaviours, whereas a correlation was established by Hornsby *et al.* (2009).

Organisational boundaries relate to work outcomes and decision-making around innovation (Clohessy *et al*., 2007). It also relates to the alignment between departments, the contexts where individuals are empowered to make decisions and the easy flow of information to make quicker decisions (Hornsby *et al.*, 2009; Urban & Verachia, 2019). Urban and Verachia (2019) could not establish empirical support for the organisational boundaries' influence on innovativeness, risk-taking and proactive behaviours, whereas a correlation was established by Hornsby *et al.* (2009).

2.2.4 Effects of Corporate Entrepreneurship

The outcomes of CE are similar to the outcomes found in theorised organisational behaviour studies. They relate to financial measures of growth (Zahra, 1993; Zahra & Covin, 1995; Zahra, 2015; Tseng & Tseng, 2019), market share and profitability (Covin & Slevin, 1989 Zahra, 2015; Tseng & Tseng, 2019). The related non-financial measures are employee satisfaction and organisational commitment (Clohessy *et al*., 2007). These outcomes are necessary for organisational longevity and competitiveness (Kenney & Mujtaba, 2007) and are considered to be survival and growth strategies for contemporary companies (Scheepers, Bloom & Hough, 2008).

Empirically, Zahra and Covin (1995) and Ireland *et al*. (2009) found positive relationships between innovativeness, risk-taking and proactive behaviours and firm performance measured through growth and profitability. Urban and Wood (2015) also found that innovativeness, risk-taking and proactive behaviours are predictors of growth in South African firms. Urban and Verachia's (2019) empirical study also confirmed these relationships.

2.3 LINKING CORPORATE ENTREPRENEURSHIP AND EFFECTUAL BEHAVIOURS

Central to CE is an entrepreneur within a firm that exhibits the entrepreneurial behaviours of being innovative, taking risks and being proactive (Covin & Slevin, 1989; McMullen & Shepherd, 2006; Kenney & Mujtaba, 2007; Kuratko & Audretsch, 2013; Sarooghi *et al.*, 2015; Das& Sahu, 2018; Urban & Verachia, 2019). Innovativeness and proactiveness have

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subsequently been grouped as behaviours and risk-taking as an attitude toward opportunities (Anderson, Kreiser, Kuratko, Hornsby & Eshima, 2015). Collectively these behaviours are known as entrepreneurial orientation (EO) (Lumpkin and Dess, 1996; Ireland *et al*., 2009; Sarooghi *et al*., 2015; Urban & Verachia, 2019).

These entrepreneurs are typically experts who prefer a mediating organisational environment that offers a sense of autonomy, have an intrinsic motivation for high-performance growth, are focused on available resources, prefer to establish their own rules and create new external relationships (Kenney & Mujtaba, 2007). What was established is that management support, work discretion, rewards and reinforcement, time availability and organisational boundaries are the determinants of EO (Clohessy *et al*., 2007; Kuratko *et al*., 2014; Hornsby *et al*., 2009; Urban & Verachia, 2019).

McMullen and Shepherd (2006) classified the conceptualisation of entrepreneurial actions as the pursuance of opportunities through the creation of new products or processes (Schumpeter, 1934), new markets (Lumpkin & Dess, 1996) or new ventures (Gartner, 1988). Synthesising the three main domains of CE – innovation, corporate venturing and strategic renewal – reveals the value-creating actions of transforming an existing product, process, structure, firm or market into something new. These transformation activities are influenced by a confluence of self-initiating, disruptive and problem-solving behaviours that represent a synthesis of EO behaviours. These behaviours are purposefully facilitated by corporate management through autonomy with decision-making and through work structuring in determining outcomes that are recognised and rewarded.

Entrepreneurial behaviour is about the observable actions of individuals (McMullen & Shepherd, 2006). It is about discrete units of observable enactment of meaningful activities or tasks by actors like entrepreneurial teams or individuals, for audiences like venture stakeholders – who include investors, local government and educators (Bird & Schjoedt, 2009). These observable activities are specifically related to start-up firms or the growing of firms through new market opportunities (Bird & Schjoedt, 2009; Fisher, 2012). This study focuses on entrepreneurial behaviours that co-create growth for firms in an uncertain context. It specifically focuses on behaviours, where predicting outcomes is difficult, and

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the use of effectual behaviours is preferred over more predictive outcomes where causal behaviours dominate (Sarasvathy 2001a, b).

2.3.1 Effectual Behaviours

From the peer-reviewed work of McKelvie *et al*. (2020), 35 studies that used team, venture or corporates as their units of analysis were identified. Notably, Alsos, Clausen, Hytti and Solvoll (2016) considered preference for effectual behaviours in start-up processes; Sitoh, Pan and Yu (2014) explored effectuation in new product development process; Brettel *et al.* (2012) examined the impact of effectuation on performance in research and development (R&D) projects and Werhahn, Mauer, Flatten and Brettel (2015) created an instrument to measure effectual orientation in a corporate context. Effectuation theory has thus found presence within corporate innovation through R&D and new product development, and new business venturing through start-up processes. No studies related to strategic renewal for co-creating new market opportunities for growth were found - nor were any found using professional service firms.

Entrepreneurial behaviours are the instruments used to explain the actions and logic of entrepreneurship (Fisher, 2012). Tension has been observed in the manner with which effectuation, now at a mature stage of theory development (Matalamäki, 2017), has been measured in empirical studies (McKelvie *et al*., 2020). Effectuation has been measured using both enacted decision-making logic (decision-making behaviours) through think-aloud protocols (Sarasvathy 2001a, b; Dew *et al*., 2009a; Dew, Sarasvathy, Read & Wiltbank, 2011) and through observable actions (Chandler *et al*., 2011; Brettel *et al*., 2012). Earlier effectuation studies dominated the focus on the logic of decision-making or thinking, notably Dew *et al*. (2009a, 2011) and Murnieks, Haynie, Wiltbank and Harting (2011), whereas later studies focused on actions, notably Chandler *et al*. (2011) and Brettel *et al*. (2012).

However, effectuation being native to entrepreneurship is about the process of creating new products, firms and markets for growth opportunities in unpredictable contexts as opposed to causal behaviours found in more predictive contexts (Sarasvathy 2001a, b; Read & Sarasvathy 2005; Sarasvathy & Dew, 2005a). As a result, entrepreneurial behaviours are observed as the outcome of effectual thinking or logic, which is described as “an internally set of coherent prescriptions” (Dew *et al*., 2008:28) or “internally consistent ideas that form

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the basis of action upon the world" (Read *et al*., 2009a:29). The thinking or logic of effectual behaviours is observed and measured in the form of decision-making behaviours. Similarly, entrepreneurial behaviours are also seen and evaluated as the outcome of effectual actions (Fisher, 2012).

The shared outcomes of effectual and CE behaviours: creating artefacts of new products, firms and markets (McMullen & Shepherd, 2006) – complemented by the shared processes of using EO behaviours to transform existing structures, products, firms and markets into new forms (Lumpkin and Dess, 1996; Ireland *et al*., 2009; Sarooghi *et al*., 2015; Urban & Verachia, 2019) – are governed by predictive versus non-predictive perceptions (Sarasvathy 2001a, b). This allows for a deeper enquiry into effectual behaviours within corporates.

2.4 APPLICATION OF EFFECTUAL CORPORATE BEHAVIOURS

Expressions of the outcomes of corporate entrepreneurial activities in the South African financial services industry can be found in its current industry structure where professional financial planning practices are positioned. Most professional financial planning practices are examples of corporate venturing where employees, either acting as agents or employees of large established insurance firms, ventured to form their own practices (Edoo-Sirkissoon, 2016). These practices are part of either an intermediary network or small independent practices that have strong links to their parent firms.

Examples of these formations are large broker networks like SFP, PSG, Momentum Consult and Masthead that are a collection of many smaller financial planning practices whose members were originally employed as agents or employees of Sanlam, Momentum, Old Mutual and Liberty Life. These parent firms represent the largest life assurers in South Africa - more than 80% of the industry's market share – that support these networks by providing funding, shared regulatory compliance and succession planning services.

2.4.1 Professional service entrepreneurs

Limited entrepreneurial research has been conducted on professional service firms – employees that have transitioned to starting their own firms (Von Nordenflycht, 2010; Reihlen & Werr, 2015; Steward, 2018). The paradoxical logic and values of the entrepreneurial and professional identity is the reason for the dearth of these studies

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(Steward, 2018). However, reality suggests that a significant number of professional employees start their own professional practices (Burton, Sorenson & Dobrev, 2016) and contribute three to four times to economic growth than other business forms (Steward, 2018).

Degree of knowledge intensity, low capital intensity and a professionalised workforce are the distinctive characteristics of professional service firms (PSF) (Von Nordenflycht, 2010). Professionals are experts in their domain of knowledge - formalised and standardised skills - and are socialised by their professional institutions through prescribed codes and norms to control their exclusive knowledge and practices (Steward, 2018). The professional knowledge is confined with limited discretion, creativity and innovation (Reihlen & Werr, 2015) and a professional's behaviour is restricted through ethical codes of conduct - demotivating competition and autonomy (Von Nordenflycht, 2010; Reihlen & Werr, 2015; Steward, 2018).

Easy profits, necessity and pursuit of opportunities are factors combined with the identification with profession, rather than employer, creates challenges with retaining and managing professionals (Reihlen & Werr, 2015; Steward, 2018). As a consequence, many start their own firms and use their expert knowledge to create customised value for their clients (Steward, 2018). Research in institutional entrepreneurship – intense socialisation in expert knowledge, norms, ethics and behavioural conduct – are mostly conducted in classical professional services like law and accounting (Reihlen & Werr, 2015) where Steward (2018) added architecture and medicine to the list.

Neo-professions like consulting and advertising have receive less academic attention despite having to conform to regulations with a less confined knowledge domain - focusing on the value of their customised solutions for their clients (Reihlen & Werr, 2015; Steward, 2018). As a result of the idiosyncratic nature of socialisation, regulation and legalities of the various types of professional service firms, it would be difficult generalise findings of professional service firms (Steward, 2018).

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Von Nordenflycht (2010) created a taxonomy and theory of knowledge intense professional service firms that were categorised - and where limited effectuation research has taken place:

- Classic PFSs - law, accounting and architecture.
- Professional Campuses – hospitals.
- Neo-PFSs – consulting and advertising.
- Technology Developers – biotech and research and development labs.

A particularly under researched professional service firm is that of the professional financial planner - could be classed among the neo-PFS consulting firms. With the exception of Edoo-Sirkissoon (2016), the researcher could not find another study conducted in South African or internationally with professional financial planners as corporate entrepreneurs. Specifically, the researcher could not find any effectuation literature related professional financial planners nor any other professional practice like lawyers and accountants – presenting an opportunity to make a contribution to the body of knowledge in entrepreneurship and corporate entrepreneurship.

2.4.2 Professional Financial Planners

Using behaviours of professional financial planners as its unit of analysis allows this study to conduct novel research into effectual behaviours of corporate entrepreneurs in external domestic corporate ventures - established practices which still have strong ties to their parent companies. In addition, the effectual behaviours that this study is particularly interested in are those related to the co-created market and growth opportunities of these venture and would align with the innovation and strategic renewal dimension of CE.

2.5 CONCLUSION

In conclusion, CE has been conceived as entrepreneurial firm behaviours that give effect to innovation through corporate venturing and strategic renewal. The review conducted by this study created two camps within which to analyse and synthesise the extant CE theory: strategic activities and firm behaviours.

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Corporate entrepreneurial processes are stimulated by an unpredictable environment where the growth and survival of firms are threatened (Scheepers *et al*., 2008; Kuratko, Hornsby & Hayton, 2015). Outputs of these behaviours are new firms, products or markets which are consistent with outcomes of an effectual process. These behaviours are the discrete observable enactment of decision-making logics and actions. Both decision-making logics and actions are consistent with the conceptualisation of effectuation through the empirical operationalisation thereof.

The CE literature on individual-level behaviours focuses on innovativeness, proactiveness and positive attitudes toward risk-taking. These behaviours aggregate on a firm-level as well. They are empirically supported by firm-process factors related to management support, work discretion, rewards and reinforcement, time availability and organisational boundaries that facilitate the free flow of information.

This research is situated in a context that represents the outcomes of CE in the South African insurance industry. As a result of paradoxical logics and values, limited entrepreneurial research has been conducted on professional service firms – professional employees that have transitioned to starting their own firms. In particularly, the researcher could not find any research in effectuation literature related to professional service firms and on professional financial planners. Corporate entrepreneurs, in the form of professional financial planners, established external domestic ventures with strong ties to their parent insurance companies. In addition, the effectual behaviours that this study is particularly interested in are those related to the effectually co-created market and growth opportunities of these corporate entrepreneurs. This approach also aligns with the innovation and strategic renewal dimension of CE.

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3 THEORY ON EFFECTUATION, ENTREPRENEURIAL MARKETING AND SERVICE SCIENCE

3.1 INTRODUCTION

After providing the conceptualisation of CE and linking these behaviours to those found in effectuation theory, this study now reviews effectuation, entrepreneurial-marketing and service-science theories. The literature review process parsimoniously examined the determinants, processes and outcomes of each theory to frame a theoretical structure that supports this research's purpose, questions, hypotheses and methodological choices. The proposed effectual process of co-creating new market opportunities for growth is also discussed and graphically depicted.

This section leverages the concepts of effectual networks and the entrepreneurial-marketing concepts of value co-creation and co-created market opportunities to generate research proposals that are hypothesised in Chapter 4. It presents a model that sets the puzzle pieces of effectually co-created growth opportunities as an advancement to integrate effectuation, entrepreneurial-marketing and service-science theories.

Effectual behaviours being native to entrepreneurial behaviours enables the construction of a theoretical framework that addresses how effectual behaviours are applied, what they are applied to, who is involved, why they are involved and how these behaviours are sustained. This approach is deliberate in order to achieve the revised higher-order educational objectives of analysis, evaluation and creation (Kratwohl, 2002 over the lower levels of knowledge, comprehension and application (Bloom, Engelhart, Furst, Hill and Krathwohl, 1956; Perry, 1998).

This study uses Kratwohl's (2002) structure of 'analysis': differentiating, organising and attributing – on empirical effectuation studies into who they measured, how they measured and what they measured. It uses this outcome to 'evaluate' empirical studies by checking and critiquing the criteria established by this study's research problem, purpose and questions. Lastly, it 'creates' a new theoretical framework by generating, planning and producing a new set of relationships to form a novel coherent model of effectually co-creating

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market opportunities and growth. This approach is supported by a review of empirical studies on effectuation.

3.2 THEORY OF EFFECTUATION

This study validated the peer-reviewed work of McKelvie *et al*. (2020) with that of Matalamäki (2017) to extract only empirical studies on effectuation. It then sifted through these studies to identify those that focused on measuring effectual behaviours. The theoretical framework that was developed classified these studies according to who was measured, what was measured and how the measurement was done. It then grouped these studies to create a typology to determine if there were empirical studies that focused on value co-creation, effectual networks, co-created market opportunities and effectual growth opportunities. The purpose behind this typology was to identify gaps within empirical studies of effectuation to frame the research questions, proposals and hypotheses. Appendix A (Section 9.1) gives expression to this theoretical framework.

McKelvie *et al*.'s (2020) review used the ProQuest's ABI/INFORM Collection that included ABI/INFORM Global, Trade and Industry and Dateline, and EBSCO's Business Source Elite databases and used the keywords 'effectuation' and 'effectual' in the article search. Matalamäki (2017) used Scopus Elsevier, ABI Inform and EBSCO databases for peer-reviewed articles and used a similar search criterion as Perry *et al.* (2012), where the word 'effectuation' was in the title, abstract or keyword and where it was also the main subject.

The Likert-scale multi-item survey approaches of Chandler *et al*. (2011) and Brettel *et al*. (2012) are the two most employed methods used in empirical studies on effectuation (McKelvie *et al.*, 2020). Eleven studies employed Chandler *et al*.'s (2011) measures and five studies Brettel *et al*.'s (2012) measures. Only six studies developed new measures (McKelvie *et al.*, 2020).

Other than the validated scales provided by Chandler *et al*. (2011), the authors established that effectuation is a formative multidimensional construct that has components of experimentation, affordable loss, flexibility and pre-commitments. In addition, the subdimension of experimentation was positively correlated with uncertainty. Chandler

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et al.'s (2011) focus was on business start-up processes. Alsos, Clausen and Solvoll (2014) criticised this study by highlighting that these subdimensions do not adequately reflect the dimensions of effectuation as conceptualised by Sarasvathy (2001a) and that there are low correlations between the components.

Brettel *et al.* (2012) addressed the above weaknesses by capturing the four dimensions of effectuation as articulated by Sarasvathy (2001a, b): the use of available means to create new possibilities as opposed to using and acquiring means to pursue a predetermined goal; using affordable loss as opposed to expected return as a decision-making criterion; forming partnerships as opposed to being guided by competitive analysis and embracing contingencies as opposed to avoiding risks. Brettel *et al.*'s (2012) study introduced effectuation into a corporate context with a focus on developing new products within an R&D environment. This introduction creates the possibilities that effectuation can be applied to contexts that are indifferent to what needs to be created. The only consistent provision is that the context be uncertain as the future cannot be predicted (Read *et al*., 2009a, b).

Matalamäki (2017) identified the four main streams of effectuation research – innovation and product development, internationalisation, effectuation and causation simultaneously, and entrepreneurial expertise – as the current scientific dialogue in effectuation theory. The application of effectual behaviours in each of these stream's results in the successful creation of an artefact, whether an innovative product in an existing or new market, a new venture in a new or existing international or local market or the creation of a new market for an existing or innovative new firm or product under conditions of uncertainty (Sarasvathy 2001a, b; Sarasvathy & Dew, 2005a; Sarasvathy, 2008).

McKelvie *et al.* (2020) identified several challenges with effectuation as a theory. Foremost of these is whether it can consistently pass the muster of being a variance-based theory (Arend *et al.*, 2015), even though it has been conceptualised as a process-based theory (Gupta, Chiles & McMullen, 2016). A variance-based approach used in effectuation studies applies effectuation as an independent variable, which explains why effectuation creates the changes in an outcome variable (Arend *et al*. 2015; Laskovaia *et al.*, 2017; Smolka *et al*., 2018; Villani, Linder & Grimaldi, 2018). Arend *et al*. (2015), in particular, used the three 3E variance-theory criteria of experience, explain and establish to express their criticism of

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effectuation as a theory. The process-based approaches used in empirical effectuation studies explain how effectuation creates new phenomena, products, firms and markets (Sarasvathy, 2001a, b; Van de Ven, 2007; Mainela & Puhakka 2009; Dew *et al.* 2011; Evald & Senderovitz, 2013; Nummela, *et al.*, 2014; Gupta *et al.,* 2016; Hannibal, Evers & Servais, 2016; Engel *et al*., 2017).

A few empirical studies have found positive effects of applying effectual behaviours in an uncertain corporate context (McKelvie *et al*., 2020). Alsos *et al.*, (2016) developed a measuring scale to assess effectual individual decision-making behaviours during a start-up phase of Norwegian corporates. Alsos *et al.* (2016) examined the relationship between social identity and effectual behaviours in tourism firm start-ups. Appelhoff, Mauer, Collewaert and Brettel (2016), using Brettel *et al*.'s (2012) measures, explored team decision behaviours in German ventures. Berends, Jelinek, Reymen and Stultiëns (2014) explored corporate decision-making behaviour in product innovation processes in Dutch firms.

In the above empirical studies, the creation of innovative products and start-up firms, and the formation of new markets and firm performance represent the outcomes of effectual behaviours (Sarasvathy, 2001a, b; Sarasvathy & Dew, 2005a; Sarasvathy, 2008). Effectual behaviours are the tools of creation in a value-centred economy. These are behaviours use available means for experimentation; pre-commitments to partnerships; affordable loss as a decision-making criterion; embracing contingencies by being flexible and controlling rather than predictive approaches (Sarasvathy, 2001a, b). The raw materials required for these behavioural tools to be of effect have been taken for granted or omitted in all the studies. This study considers these raw materials as the fabric of effectuation, that is, the social, value and opportunity fabrics that present themselves as empirical gaps in effectuation theory.

Process-theory approaches of effectuation explained the tools and application of effectuation theory. Variance-theory approaches explain the performance outcome of effectuation. This study first uses a process-theory approach by explaining and testing the effects of effectual behaviours on the social, value and opportunity fabrics. This enables the use of a variance-theory approach to answer the research questions of how effectual behaviours are used to co-create growth opportunities. This is an attempt to reconcile the

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theoretical arguments of whether effectuation is a process or variance theory. The outcome of the above synthesis of empirical studies can be summarised as:

- Firstly, a process theoretical approach explaining how effectual behaviours are successfully used to create new products (R&D projects), gain new entry into (international) markets and create new firms to achieve firm performance, in some measure, in uncertain contexts; and

- Secondly, a variance approach explaining why effectual behaviours are needed to create new products (R&D projects), gain new entry into (international) markets and create new firms to achieve firm performance, in some measure, in uncertain contexts.

The conclusion that this study draws from the above is that the tools of creating new products, firms and markets have been applied both as a process and variance-based theory. The empirical gaps related to the social, value and opportunity fabrics, upon which effectual behaviours act to co-create opportunities, have presented themselves as current omissions in the extant literature. Finally, effectual behaviours are not only found in start-ups but also established corporate contexts.

3.2.1 The Social Fabric of Effectuation – Effectual Networks

After identifying the three empirical gaps in effectuation theory, this section focuses on the outcome of studies where effectual behaviours acted on the social fabric of society. As indicated in the evaluation of empirical effectuation literature, no empirical study was found that focused on the creation of effectual networks as an outcome of effectual behaviours on the social fabric of society. As a result, an analysis, synthesis and evaluation are to be done on the conceptualisation of effectual networks – to provide a perspective of how they are created, who is involved, why they get involved and what they create.

For this purpose, Engel *et al*.'s (2017) typology of network behaviours was adapted and summarised in Table 1. Networks co-create market opportunities through leveraging the effects of emergent, flexible and unordered behaviours when meeting new people or through creating an awareness of new dimensions in existing ties (Sarasvathy, 2008). Even though the network's purpose is not narrow and specific, activities are guided by a broader perspective of value co-creating possibilities using available means within that network

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(Sarasvathy & Dew, 2005a; Engel *et al.* 2017). Interactions within the network are more altruistic and relational, in terms of what possibilities can be created together, as opposed to opportunistic (Sarasvathy & Dew, 2003). Lastly, network selection involves an advance commitment of means by participants based on affordable loss that results in the convergence of constraints. This serendipitously gives rise to co-created market opportunities defined by new products, markets and firms (Sarasvathy & Dew, 2003; Sarasvathy & Dew, 2005a, b; Engel *et al.* 2017; Ahoba-Sam & Charles, 2019).

Table 1: Effectual Networking Typology

Issue	Effectual Networking
Venture objectives are	Emergent, flexible and unordered (that is, networking determines a venture's market opportunity through co-creation).
Networking objectives are	Not available and in some cases not knowable (that is, uncertain).
Networking is motivated by	Both self and collective interests with predominantly developmental motives (for example, "what value can we co-create?").
Networking begins with	Existing and predominantly strong ties (as part of initial assessment of currently available means within the network). It is formed through random chance and follows a (un)intentional path dependent fashion formed through deliberate activation.
Networking search scope is	Broad and directed at generating unexpected contingencies (that is, focused on meeting new people or discovering new facets in existing ties).
Tie interaction is	Primarily based on intelligent altruism and relational embedding (that is, "if I commit to help others, they are more likely to reciprocate").
Tie selection is	Based on self-selection (ties self-select based on what they can afford to commit in advance).
Eventual network change leads to	Serendipitous outcomes involving resources, ideas or both, which result in new or modified market opportunities.

Adapted from Engel *et al*. (2017)

Sarasvathy (2008) explained how effectual networks are created. It begins with self-reflective behaviours in three categories of means: identity, expertise and social networks. Symbolised as ' bird-in-the-hand' behaviour, identity relates to 'who I am' in terms of traits, preferences and abilities; expertise reflects 'what I know' in terms of education, training and experience; 'who I know' reflects professional, social and personal networks.

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These means are not mutually independent and exclusive. Each influences the other's formation and transformation; represented by 'what I have' and creates the agenda of 'what can I create given what I have'.

The bird-in-the-hand behaviour sets in motion a dynamic process (Figure 1) to address who gets involved. This is fundamental to the creation of networks that eventually ripens into markets and firms (Sarasvathy & Dew, 2003; Sarasvathy, 2008; Faiez & Boujelbène, 2012; Kerr & Coviello, 2019). Effectuators move beyond their nested bird-in-the-hand assessment by extending their assessment of available means within their professional and personal networks - through repeated negotiated interactions with both existing and new network ties (Engel *et al*., 2017). The criteria of who gets involved in this process are guided by a pre-commitment approach to network creation, defined as "a self-imposed non-negotiable constraints that stacks the deck in favour of or against specific future choices" (Sarasvathy & Dew, 2003:4).

The pre-commitment approach to network formation is framed as 'crazy-quilt' behaviour (Sarasvathy, 2008; Faiez & Boujelbène, 2012). This is plausible in the face of motivational uncertainty where there is a lack of trust in existing networks and environmental uncertainty where there are no clear profit opportunities (Sarasvathy & Dew, 2003). The pre-commitment behaviours by network partners are framed and restricted by the next effectual behaviour: 'affordable-loss' (Sarasvathy & Dew, 2003; Engel *et al*., 2017; Kerr & Coviello, 2019).

The effectual commitment sets in motion a cycle of expanding resources and converging constraints that result in a transformed market (Sarasvathy & Dew, 2005a). In the context of uncertainty with ambiguous goals, this approach allows for self-selection as opposed to partner selection by the focal entrepreneur (Sarasvathy & Dew, 2005a, b; Engel *et al*., 2017).

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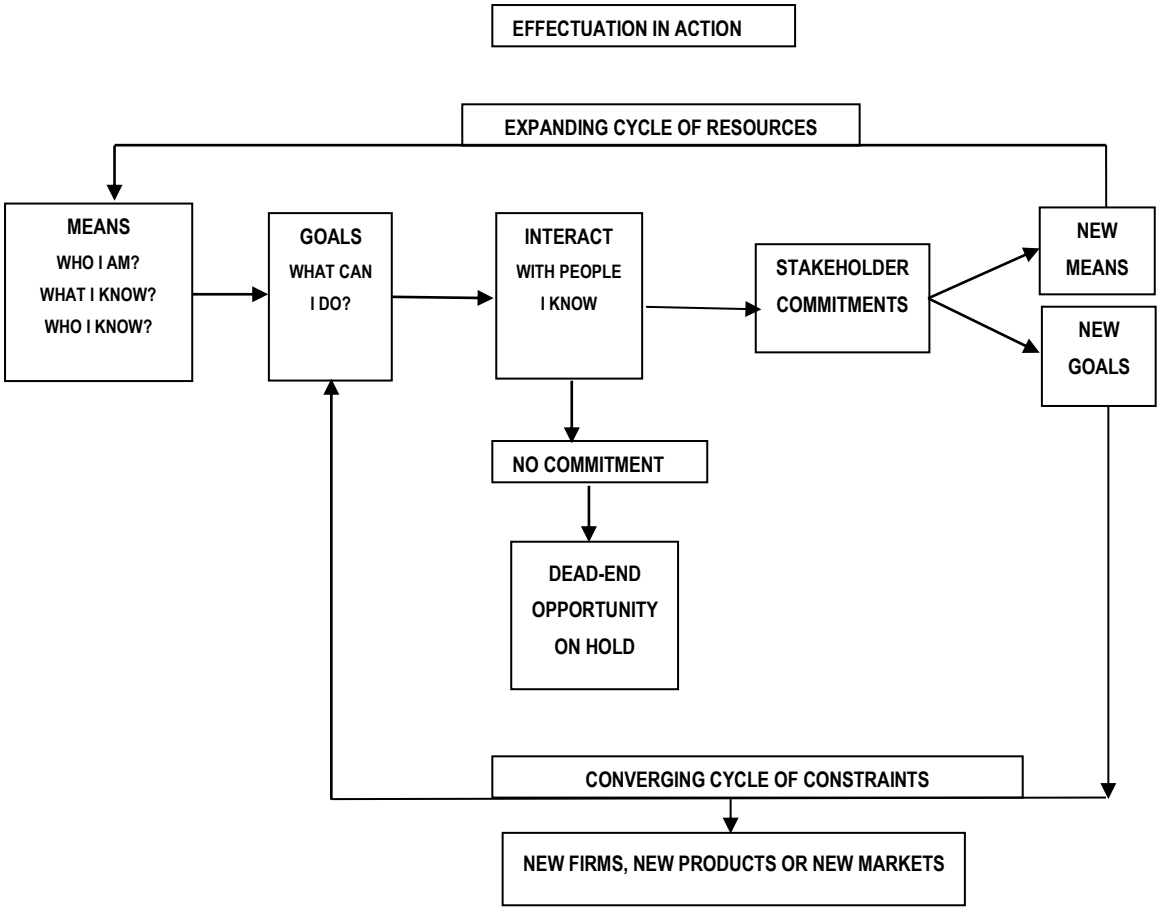

Figure 1: A Dynamic Model of the Effectual Network and the New Market as an Effectual Artefact (Sarasvathy & Dew, 2005a)

As the effectual network forms through emerging commitments, the portfolio of network ties changes, creating unexpected contingencies that serendipitously present the emergence of a new value-creating market opportunity (Engel *et al*., 2017). Some combination of searching, contingency and existing knowledge characterises this serendipity (Dew *et al*., 2009a). An expanding network of pre-commitments also allows for the leveraging of contingencies by acting on what is available to co-create new value (Sarasvathy, 2001a, b; Faiez & Boujelbène, 2012; Engel *et al*., 2017). This act of leveraging contingencies as opposed to avoiding them is referred to as the 'lemonade' behaviour (Sarasvathy, 2008; Faiez & Boujelbène, 2012).

The effectual behaviour of control is denoted as 'pilot-in-the-plane' (Sarasvathy, 2008; Faiez & Boujelbène, 2012). Affordable loss, network ties and leveraging behaviours operationalise non-predictive controlling behaviours (Sarasvathy, 2001a, b; Sarasvathy & Dew, 2003).

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Control is over process and outcomes (Read & Sarasvathy, 2012) and over the transformation of the emerging artefact (Sarasvathy & Dew, 2008). It is the controlling behaviour that allows iterative negotiations to coalesce into an effectual network that represents opportunity creation (Sarasvathy & Dew, 2005a; Kerr & Coviello, 2019). These effectual behaviours, symbolised as bird-in-the-hand, crazy-quilt, affordable-loss, lemonade and pilot-in-the-plane, are summarised in Table 2.

In summary, as stated by Sarasvathy and Dew (2003:10), "getting started and growing into networks of value creation" require ambiguous network goals, motivational and environmental uncertainty, and negotiated pre-commitments of means that pass the affordable-loss test of self-selected partners. It is motivated by "what value can we co-create" so as to co-create new market opportunities. What this study asserts are that these ambiguous network goals or outcomes are 'co-created market opportunities' and that negotiated pre-commitment of means is directed at 'value co-creation'.

The above exposition of effectual networks allows this study to create the following propositions:

- Proposition 1: Effectual networks mediate the relationship between effectual behaviours and co-created market opportunities.
- Proposition 2: Effectual networks mediate the relationship between value co-creation and market opportunities.

Table 2 summarises effectual behaviours that serve as a nested methodology in the creation of effectual networks; these behaviours set in motion the dynamic process described in Figure 1.

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Table 2: Effectual Behaviours

Behaviours	Description
Bird-in-the-hand	Reflect on who you are, what you know and who you know.
Crazy-quilt	Build a network of self-selected stakeholders. Negotiate with stakeholders who are willing to make commitments to the project, without concern about opportunity costs or carrying out elaborate competitive analysis.
Affordable-loss	Invest what you can afford to lose. Calculate the downside potential, and risk no more than you can afford to lose.
Lemonade	Embrace and leverage surprises. Effectuate new value through acting on what is available. Effectuation is action-orientated.
Pilot-in-the-plane	The future comes from what people do. Rely on and work with the human agency as the prime driver of principle opportunity.

Adapted from Sarasvathy (2008); Faiez and Boujelbène (2012)

3.3 SERVICE-SCIENCE THEORY – THE VALUE FABRIC OF EFFECTUATION – VALUE CO-CREATION

After conceptually establishing that effectual networks mediate the relationship between effectual behaviours and co-created market opportunities, and the relationship between value co-creation and co-created market opportunities, this study now proceeds to unpack value co-creation as the object of pre-commitments in effectual networks. The objective of this approach is to demonstrate that the value fabric of effectuation is required to give effect to co-created market opportunities. The following analysis, synthesis and evaluation focus on the determinants, process and outcomes of value co-creation.

In Fan and Luo's (2020) literature review of value co-creation, they classified value co-creation research into three groups: why customers participate in value co-creation, how it is done and what its effects are. Psychological characteristics and customers' personal participation characteristics motivate why customers get involved (Fan & Luo, 2020). The need to control environmental uncertainty initiates co-creation activities (Read & Sarasvathy, 2012). Research on how it is done is divided between role research, involving customer participation in different firm contexts; process research, involving brand, consumer and organisational learning and management problem research, involving the impacts of economic and comparative advantages (Fan & Luo, 2020). Effects are evaluated at the customer level – loyalty, satisfaction and experience value – and at the firm-level – economic and comparative advantages (Fan & Luo, 2020).

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Ranjan and Read (2017) responded to the equivocal understanding of value co-creation – due to the diverse contexts within which it was examined. The authors provided an integrated perspective that exposed and empirically tested co-production and value-in-use (ViU) as the two conceptual dimensions of value co-creation. Co-production includes the aspect that value is created in the exchange between the customer and the firm (value-in-exchange) and ViU includes the view that value is always created in use (Vargo & Lusch, 2004; Ranjan & Read, 2017; Fan & Luo, 2020).

Prahalad and Ramaswamy's (2000) seminal article set in motion the shift from creating value from autonomous and distinct roles of production and consumption in traditional economic exchanges to using purposeful interaction with consumers to co-create experiences as being the new basis of value. Vargo and Lusch (2004) significantly influenced and enhanced this theoretical view through their conceptualisation of co-creative S-D logic that positioned value co-creation and the customer - as the co-creator of value. The logic of value co-creation is based on a service-for-service exchange over a goods-for-goods or goods-for-money exchange (Vargo, Kosketa-Huotari & Vink, 2020).

What is meaningful to this study is that co-production involves processes that enable coworking, interaction, collaboration and dialogue among economic and social actors within networks (Vargo & Lusch, 2008; Achrol & Kotler, 2012; Vallaster & von Wallpatch 2012; Ranjan & Read, 2016), in order to integrate resources into value configurations (Ballantyne & Varey, 2008). Resources include knowledge sharing, equity over control in the process and deep interactions to help assess and adapt resource commitments (Prahalad & Ramaswamy 2004; Ranjan & Read, 2017). Figure 2 describes co-production and ViU.

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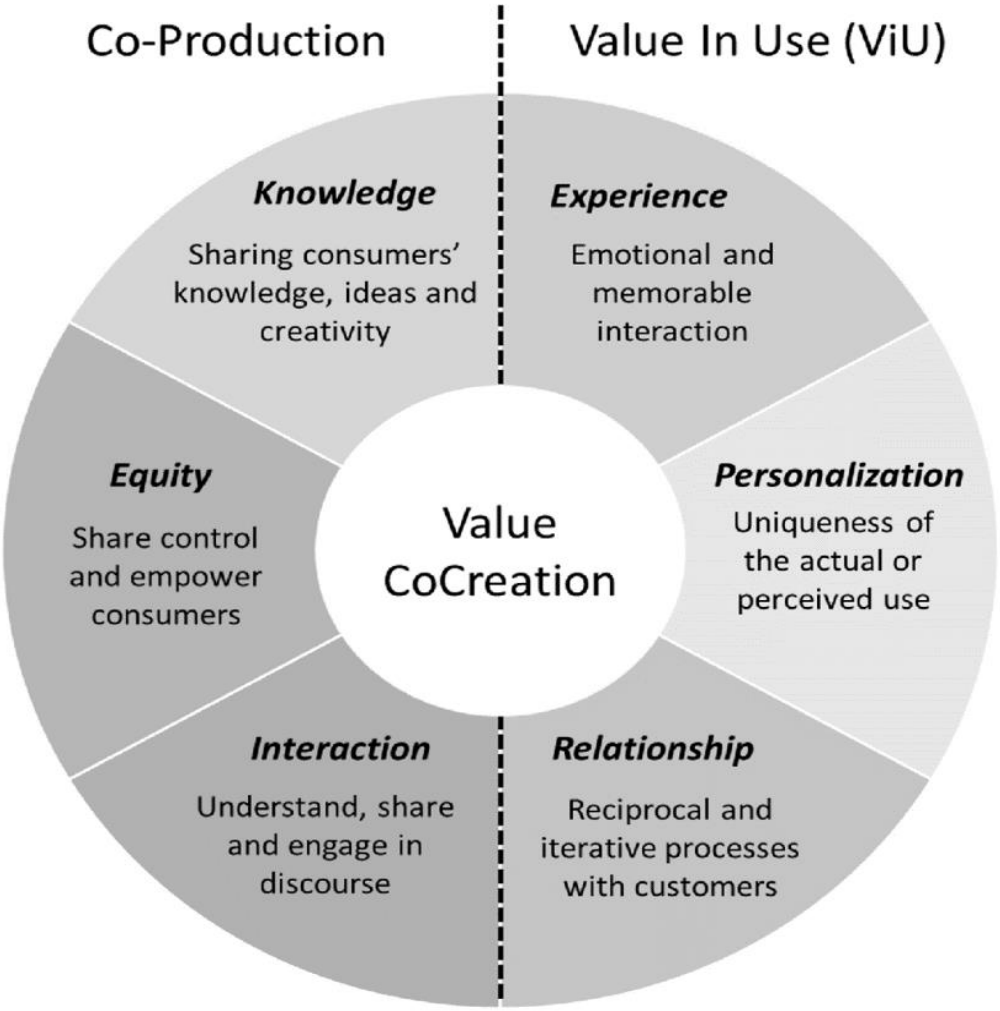

Figure 2 : The Six Faces of Value Co-creation (Rajan & Read, 2017)

Beyond co-production, ViU relates to the experimental, subjective, dyadic and network usage of the co-produced value. ViU is derived from the physical, cognitive and affectual 'use' experiences, personalised perceived 'use' and dynamic relationship with the co-produced value (Ranjan & Read, 2017; Fan & Luo, 2020).

A coherent definition of value for this study is "an emergent, positively or negatively valence change in the well-being or viability of a particular system/actor" (Vargo & Lusch, 2018:15) instead of economic profit (Vargo *et al*., 2020). The social and economic actors in service science's S-D logic are seen as multiple resource integrators that co-create value at the intersections of the committed resource integrating activities of multiple providers and

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beneficiaries in a service eco-system (Wieland, Polese, Vargo & Lusch, 2012; Vargo & Lusch, 2008, 2011; Vargo *et al*., 2020).

In summary, value co-creation involves a network that includes co-producers and users that co-create value through co-production and ViU through integrating committed resources. The motivation to co-create is driven by the need to control. However, in all the studies reviewed on value co-creation, the context of uncertainty was not explicitly expressed. The process of co-creation starts with co-production and advances to ViU (Ranjan & Read, 2017). This motivates this study to create its third proposition:

- Proposition 3: Co-created value mediates the relationship between effectual behaviours and effectual networks.

3.4 ENTREPRENEURIAL-MARKETING THEORY – THE OPPORTUNITY FABRIC OF EFFECTUATION – CO-CREATED MARKET OPPORTUNITIES

After establishing the role of effectual behaviours, effectual networks and value co-creation in co-creating market opportunities, this study now advances towards positioning co-created market opportunities as the effectual opportunity fabric in the process of co-creating growth opportunities. Research on entrepreneurial opportunities is categorised between opportunities that are discovered and exploited, and opportunities that are created (Sarasvathy, 2001a, b, 2008; Fisher, 2012; Ghorbel *et al*., 2017; Welter & Kim 2018). Remaining within its scope delimitation of uncertain contexts, this study focuses on the research stream associated with created opportunities.

Opportunity co-creation is an iterative process that describes how value is created and exchanged with a beneficial actor, used in a particular context and in the creation of new markets to generate and shape market imperfections (Whalen & Akaka, 2016). Market imperfections are defined as opportunities (Venkataramnan, 1997; Alveraz & Barney, 2010). Created opportunities are the result of emergent entrepreneurial processes, like effectuation, that act on an environment (Alveraz & Barney, 2010). Once the opportunity unfolds, it requires actors like customers, suppliers and other stakeholders in the context, to participate in order for the co-created value to be exploited (Alveraz & Barney, 2010).

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Whalen and Akaka's (2016) dimensions of value proximate the concept of value offering, as conceptualised by O'Cass and Ngo (2011). Value offering is captured by the value dimensions of co-creating the consumption experience with the customer, product/service performance (quality, innovative features and personal preferences), prices that are reasonable and affordable, and transferred through relationships that are beneficial and that create hassle-free purchasing experiences (O'Cass & Ngo, 2011).

Implicit in any co-creation process is a joint development and communication process (Whalen & Akaka, 2016). These ideas are captured within the concept of co-production (Prahalad and Ramaswamy, 2000; Ranjan & Read, 2017). In addition, the derivation and determination of value is a phenomenological process (Whalen & Akaka, 2016). Deriving and determining value is fully captured within the idea of uniquely and phenomenologically determined (Whalen & Akaka, 2016) and ViU (Ranjan & Read, 2017).

Guo, Cai and Zhang (2018) responded to Perry *et al*.'s (2012) request by providing empirical evidence that effectual behaviours have a positive relationship with opportunity shaping. The expression of market opportunities is evidenced through artefacts like new products, firms and markets (Sarasvathy & Dew, 2005a; Sarasvathy 2001a, b, 2008). Behaviours that co-create products, firms and markets under conditions of uncertainty and goal ambiguity are known as effectual behaviours (Sarasvathy 2001a, 2008). Service science (S-D logic) shifts this logic towards the view that it is not the artefacts of products, firms and markets that should be pursued but the underlying value that they represent (Vargo *et al*., 2020).

The contribution from the service science advanced by Vargo and Lusch (2004, 2008), and with the recognition of value co-creation as being the heuristic that expert entrepreneurs use to control uncertainties (Read & Sarasvathy, 2012), it becomes apparent, from a service-science perspective, that effectual behaviours pursue the objective of co-creating market opportunities instead of firms, effectual networks instead of markets and value co-creation instead of products. This leads to this study's fourth proposition:

- Proposition 4: Co-created market opportunities are outcomes of value co-creation and effectual networks.

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3.5 CO-CREATED GROWTH OPPORTUNITIES

After theoretically stitching together co-created market opportunities by threading value co-creation from the service-science theory and effectual networks from the effectuation theory, this study now proceeds to unite these concepts within the core objective of entrepreneurship: wealth creation (Alvarez *et al.,* 2013). This section seeks to answer Alvarez *et al.*'s (2013) fundamental question: How does opportunity formation create new demand and markets? To answer this question, this study now shifts its focus from a process-based approach to a variance-based approach as proposed by (Mckelvie & Wiklund, 2010). It does this by introducing growth as the performance outcome and effectual behaviours as the independent variable.

The quantitative studies reviewed by McKelvie *et al.* (2020) revealed the outcome variables to be growth, performance and survival. Smolka *et al*. (2018) and Laskovaia *et al*. (2017) used change in sales, market share and profit as dependent performance measures. Villani *et al.* (2018) used venture success and failure as measures. Wiltbank *et al*. (2009) used the investment performance success of angel investors as outcomes. Read *et al.* (2009b) in their metanalytical analysis used a detailed inventory of performance measures that included change in revenue, employees, firm size, growth, return on assets, return on total sales, debt, profitability, venture survival, market share, wealth and tenure, market, financial and product performance, positive cash flow, net interest margin, earnings, log of annual profit, deposit and loan growth, partner goals and satisfaction. Brettel *et al*. (2012) used success in R&D projects as their performance measure.

The inconsistency of performance measures in variance-based effectual studies is evident (Read *et al*., 2009b). However, what is consistent is that most quantitative research uses growth-related measures as the dependent variable to give expression to 'an increase in amount' as a measure of success (Davidsson *et al*., 2010). Similar explanatory factors may drive changes in different measures for different firms, depending on what the underlying theory seeks to predict (Davidsson *et al*., 2010). Even though the most popular measures are change in sales and change in employment, it would be better to include and analyse different measures separately (Delmar, 1997). The choice of growth indicator will depend on whether the research design is across industry, cross-sectional or a longitudinal study

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and whether there are inter-correlations and dependencies between the measures (Davidsson *et al*., 2010).

The above analysis also exposes another limitation of effectual empirical studies: there are few studies that link effectuation and business growth in established firms (Matalamäki, Vuorinen, Varamäki & Sorama, 2017). In addition, research comparing the effects of effectual behaviours on common modes of growth: organic, acquisitional, networks and alliances and internationalisation, is also lacking (Matalamäki *et al*., 2017). Growth as a mediating variable was also not found in any empirical study on effectuation. Co-created growth opportunities as an outcome variable and as a determinant of effectual behaviours in empirical studies were also not found. As a result, this study aims to conceptually establish its fifth and sixth propositions:

- Proposition 5: Co-created growth opportunities are outcomes of co-created market opportunities.
- Proposition 6: Effectual behaviours are outcomes of co-created growth opportunities.

3.6 CONCEPTUAL EFFECTIVE GROWTH MODEL

The above propositions create theoretical relationships that can be conceptualised in the following model:

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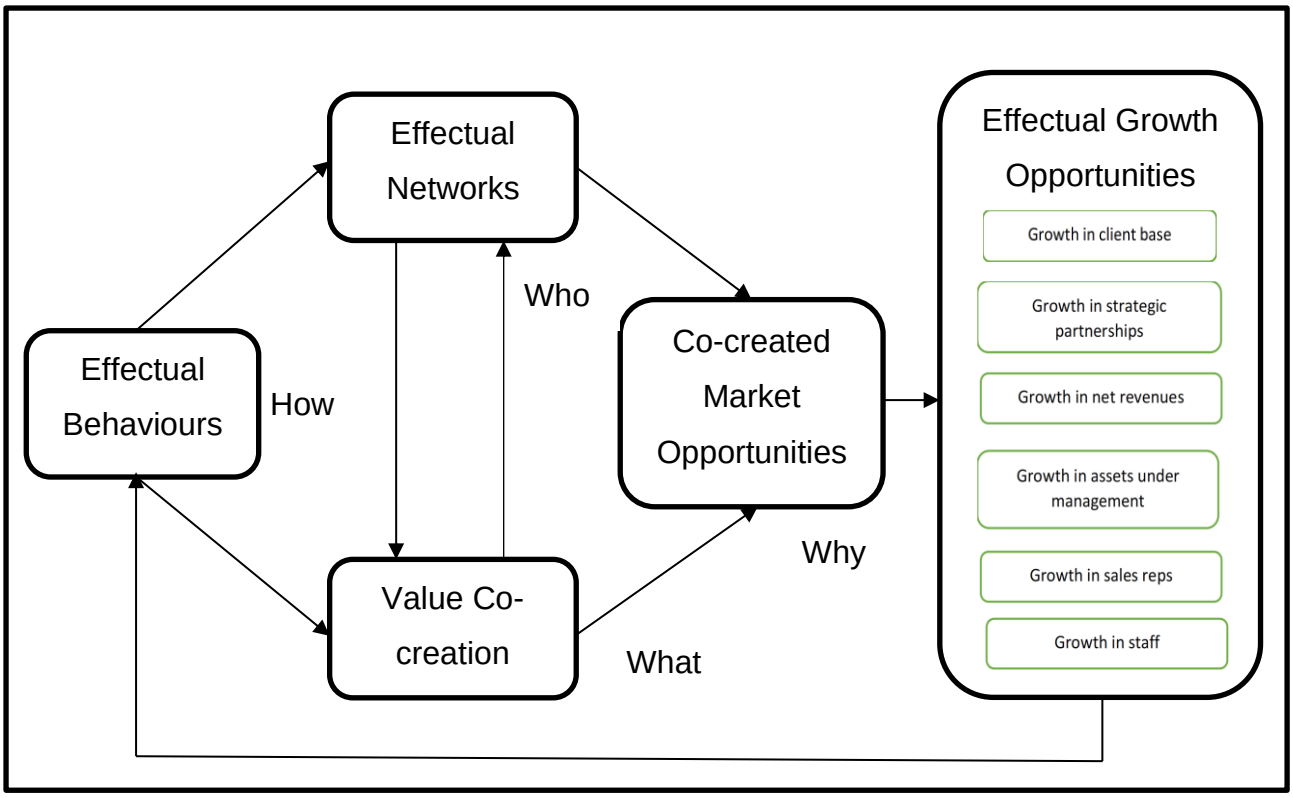

Figure 3: Conceptual Effectual Growth Model (Author's construction)

3.7 CONCLUSION

In summary, effectuation, entrepreneurial marketing and service science, represented by S-D logics, provides this study with the means to tease out theoretical gaps and answer the question of how to co-create new market and growth opportunities. They enabled this study to shift the logic of effectual outcomes from a focus on products, firms and markets to a focus on value co-creation, effectual networks and co-created market opportunities. In uncertain contexts, expert entrepreneurs use effectual behaviours to co-create effectual networks that are a portfolio of pre-commitments to co-create something of value. These pre-commitments represent a set of expanded means and associated converging constraints focused on value co-creation. Value co-creation and effectual networks are used to co-create market opportunities. Co-created market opportunities represent the mainstay determinant to co-create growth opportunities.

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4 RESEARCH METHODOLOGY

4.1 INTRODUCTION

The transition of effectuation research from the intermediate stage to a mature phase is progressing, as evidenced by an increase in quantitative studies and the reduction in conceptual studies (Matalamäki, 2017; McKelvie *et al*., 2020). This study's research design and methodology maintained the coherence found in most quantitative studies on effectuation. Its paradigm and philosophy, design, approach and method of enquiry reflects the consistency and maintains the rigour required of research in social sciences. This section is constructed to enable the replication of the research through data collection and analysis (Yin, 1989; Perry, 1998). It also provides sufficient evidence of the researcher's familiarity with the methodology and procedures (Perry, 1998).

This section includes a justification for this study's methodological choice, unit of analysis and participants. It makes specific reference to the population, sample frame and sample size, instruments used, administration thereof to collect the data and treatment of the data before it was analysed. It also addresses the analysis program used and the ethical issues of concern (Perry, 1998).

This study's research design and methodology draw on the advice proffered by McKelvie *et al.* (2020) when conducting an empirical study in effectuation:

- Is it a process or variance-based study?
- Is the study on behaviour or decisions?
- What are you measuring (effectuation and or causation)?
- Is the unit of analysis the firm, entrepreneur, team or market?
- What is the business domain (marketing, funding or partnerships etc.) of the study?
- What is the context of the study (geography, demography, culture etc.)?
- What are the boundaries of the study?
- What is the timeframe of the study?

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Justification is offered for conducting both a process and variance-based research, using effectuation behaviours over decision-making, measuring effectuation alone and using:

- Behaviours that co-created market opportunities as the unit of analysis and the professional financial planners as the level of analysis for the process-based research and
- Growth opportunities as unit of analysis and the professional financial planning practice as the level of analysis for the variance-based research.

In addition, justification is given for entrepreneurial marketing as the business domain for this research and for the boundary conditions of using an uncertainty context and behaviours of professional financial planners as corporate entrepreneurs. Lastly, this study looks at the behaviours of professional financial planners over the last two years to better understand if they co-created market opportunities to co-create growth opportunities for their practices.

4.2 RESEARCH PARADIGM / PHILOSOPHY

Drawing from the essence of the battle over whether or not effectuation is a theory, Read *et al.* (2016) defended effectuation theory by asserting that it is a pragmatic theory. The authors assert that Arend *et al.* (2015) incorrectly applied a positivist approach when assessing its validity – the 'strawman-at-sea' argument. The seminal author of effectuation theory, Sarasvathy (2001a) – later supported by Read *et al.* (2016) – highlighted human creativity and habit as the two dimensions of a pragmatic theory required to assess a theory like effectuation.

Effectuation theory was developed by using think-aloud verbal protocols to assess how experts make decisions about products, firms and markets under uncertainty (Sarasvathy, 2001a). Experts are individuals who conducted 10 000 hours of domain-specific deliberate practice that creates superior performance (Ericsson, 2006; Dew, Read, Sarasvathy & Wiltbank, 2015). Effectuation theory has since evolved to where the habitual behaviours and creativity of experts, novices, entrepreneurs and managers have been assessed and used to further develop effectuation theory (Matalamäki, 2017, McKelvie *et al*., 2020). As a consequence, this study adopts the belief that effectuation is native to the social and economic reality of entrepreneurship. In addition, it views the behaviours of effectuators as

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tools to construct and transform market realities (Chandler *et al*., 2011; Brettel *et al*., 2012). It, therefore, adopts an ontological philosophy within a pragmatist paradigm in order to be coherent with the evolution of the effectuation theory.

In summary, this study maintains the focus on effectual behaviours found in contemporary studies, retains the focus on experts as was originally conceptualised and ensures consistency with the ontological pragmatic stance of effectuation theory, CE and service science.

4.3 RESEARCH DESIGN, APPROACH AND METHOD OF ENQUIRY

After establishing its ontological philosophy and pragmatic paradigm, this study now gives expression to the design, approach and methods used to answer its research questions. This is achieved by examining the methodology used in extant empirical studies to ensure the coherence and validity of this study's methodology and findings.

Most effectual empirical studies use contrasting behaviours to explain effectuation in different contexts (Matalamäki, 2017). They compare the use of effectual logic between entrepreneurs and non-entrepreneurs (Sarasvathy & Dew, 2005b; Dew *et al*., 2009a), experienced and novice entrepreneurs and between groups that use causal and effectual logic (Dew *et al*., 2009a). Others explain relationships between effectuation and new venture performance (Read *et al.*, 2009b) and whether past investment success depended upon prediction or control (Wiltbank *et al*., 2009). Chandler *et al.* (2011) introduced survey instruments to distinguish between effectual and causation logics, whereas Brettel *et al.* (2012) introduced dependent and independent variables and a measurement scale for the effectual process. Finally, Alsos *et al*. (2016) introduced a five-item measuring instrument for the subdimensions of effectual behaviours.

Consistent with extant studies (Chandler *et al*., 2011; Brettel *et al*., 2012; Deligianni, Voudouris & Lioukas, 2015), this study adopted a survey design to enhance the generalisability of its results. It created survey items that would complement that of Chandler *et al*. (2011) and Brettel *et al*. (2012). This choice was over other designs of formal theory/literature review, sample surveys, laboratory experiments, experimental simulation, field study collecting primary data, field study collecting secondary data, a field experiment,

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a judgement task and a computer simulation (Matalamäki, 2017). In particular, it was a choice over the alternative extant effectual empirical designs that used experiments and think-aloud protocols.

Of the 46 empirical studies reviewed 36 (78%) used surveys, seven (15%) used experiments of which two were think-aloud protocols, two (4%) used interviews and one (2%) conducted a meta-analysis. The trade-offs for this study's choice of research approach were guided by the decision framework suggested by McGrath (1982): a decision related to the generalisability of the population that would support external validity, precision in measurement and control of behavioural variables that affect internal and construct validity, and realism of context. McGrath (1982) suggested that surveys are good at population generalisability but weak on realism and measurement precision. To mitigate the contingencies of the realism context trade-off, the researcher developed and controlled the design of the survey questionnaire, particularly as he has more than 27 years' experience with the behavioural practices of professional financial planners. The measurement precision was strengthened through the use of Likert rating scales. Construct validity was ensured through the use of at least three items per construct as established from the literature review.

Based on Cooper and Schindler's (2014) review of the three types of survey methods – self-administered surveys, phone and face-to-face interviews – the most suitable choice for this study was a web-based questionnaire using Survey Monkey®. The motivation for this choice of survey research method included the ability to access a wide range of respondents, the cost-effectiveness of the approach, the ability to use a more complex survey instrument (including the use of complex multiple-choice questions) and rapid data collection (Cooper & Schindler, 2014). Another key motivation is that Survey Monkey® is the preferred method employed by the FPI for collecting other types of data from their members. Their members were, therefore, more familiar and responsive to the online self-administered survey methods.

Items for constructs were deductively pooled and adapted from a medley of construct definitions and any empirical questionnaires that have a coherent relationship with effectual behaviours, effectual networks, value co-creation, co-created market opportunities and

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co-created growth opportunities to construct the scale measurements (Churchill,1979; Gerbing & Anderson, 1988; Hinkin, 1995; Diamantopoulos & Winklhofer, 2001; Worthington & Whittaker, 2006). Reliance was placed on adapting Chandler *et al.* (2011) and Brettel *et al*.'s (2012) validated instruments for effectual behaviours to ensure greater reliability of this study's instruments. For effectual networks, value co-creation, co-created market opportunities and co-created growth opportunities, reliance was placed on the theoretical dimensionalities of these constructs (Churchill,1979; Diamantopoulos & Winklhofer, 2001).

Ordinal-level categories of Likert scales are most common in social science survey methods that seek quantitative data where participants express their views (Neuman, 2014). This is also the dominant method in the review of empirical studies on effectuation. The number of items in the scale construction took into account the adequacy and parsimony requirements of domain sampling so that content and construct validity could be ensured (Cronbach & Meehl, 1955; Hinken; 1995). A deliberate attempt was made to keep the scale lengths short to minimise response biases and the number of scale items to at most seven for each construct to avoid respondent fatigue (Hinkin, 1995).

From the analysis of effectual empirical studies that used Likert-scale surveys, 5-point and 7-point Likert scales dominated most studies. Neuman (2014) suggested a scale reliability level of 7-points and that more than eight becomes meaningless and confuses participants. To ensure the meaningful "intensity, direction, level and potency of a variable" (Neuman, 2014:230), to reduce participant confusion, fatigue and response bias (Hinkin, 1995) and to secure the reliability of the scales, this study deliberately chose a 5-point ordinal-level Likert scale that covered responses on a scale of 1 to 5, where 1 = Strongly Disagree, 2= Disagree, 3 = Neither Disagree nor Agree, 4 = Agree and 5 = Strongly Agree.

In summary, this is not a comparative study but rather an explanatory study of how effectual behaviours are used to co-create market and growth opportunities through effectual networks and value co-creation. Deliberate care was taken to allow for the replication of the study and generalisability of the population of professional financial planners. It also took into account the accessibility, feasibility and pragmatic application of effectuation, CE and service science in an uncertain context where growth is the ultimate measure of entrepreneurial progress.

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4.4 RESEARCH TYPE

This applied research tests the validity and reliability of effectuation, entrepreneurial-marketing and service-science theories in the context of uncertainty. As a consequence, it assesses the relationships between effectual behaviours, effectual networks, value co-creation, co-created market opportunities and co-created growth opportunities.

Quantitative studies are best for testing theory as they use quantitative data to describe relationships between variables and to answer research questions (Swanson & Holton, 2005; Saunders, Lewis & Thornhill, 2016). This study uses the concepts of effectual behaviours, effectual networks, value co-creation, co-created market opportunities and co-created growth opportunities as operational conceptual variables to answer the research questions:

- How do professional financial planners use effectual behaviours to co-create growth opportunities for their practices in uncertain contexts?
- How do professional financial planners use effectual behaviours to determine *who* become the actors in the process of creating effectual growth opportunities for their practices?
- How do professional financial planners use effectual behaviours to determine *what* value should be co-created when creating effectual growth opportunities?
- Why do professional financial planners use effectual behaviours to create effectual growth opportunities?
- How do professional financial planners sustain their effectual behaviours?

The following hypotheses give operational effect to the variables (Swanson & Holton, 2005; Warfield, 2010; Saunders *et al*., 2016) of effectual behaviours, effectual networks, value co-creation, co-created market opportunities and co-created growth opportunities, so as to provide empirical validity to the theoretical model presented in Figure 3.

- Hypothesis 1: Professional financial planners create effectual networks to co-create market opportunities.

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- Hypothesis 2: Professional financial planners use value co-creation to co-create market opportunities.
- Hypothesis 3: Professional financial planners use value co-creation as a means to create an effectual network.
- Hypothesis 4: Professional financial planners use effectual networks and value co-creation to co-create market opportunities.
- Hypothesis 5: Professional financial planners use co-created market opportunities to co-create growth opportunities.
- Hypothesis 6: Co-created growth opportunities mediate the relationship between co-created market opportunities and effectual behaviours.

In summary, this study adopts an empirical design that collected primary data from professional financial planners, through a validated survey developed by the researcher, to test six hypotheses. The quantitative data gathered has a cross-sectional timeframe and was collected from a population of professional financial planners registered with the FPI of Southern Africa.

4.5 POPULATION

After operationalising the theoretical concepts of this study through the hypotheses, the study now progresses to describe the population and sampling frame. The choice of population and context is justified by the need to achieve coherence with the conceptualisation of effectuation where expert entrepreneurs were used in the context of uncertainty (Sarasvathy, 2001a, b). Professional financial planners are considered the experts and the South African financial services industry is considered as the uncertain context.

The life assurance market in South Africa is competitive, mature and saturated with thousands of intermediaries, like financial planners, who have witnessed declining revenues over the last few years. Demand for their services is rapidly declining amidst competing alternative distribution channels like digital and telephony (FPI, 2016/2017). The environment is characterised as uncertain and unpredictable with many new radical

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legislative and regulatory changes that have been introduced and many more planned for the next few years (FPI, 2016/2017). It has sophisticated and demanding consumer markets facing threatening new entrants and disruptive technologies.

Creating demand for services offered by financial planners in an uncertain regulatory and dynamic consumer market is a key challenge faced by many in practice. To practice as a financial planner in South Africa, an individual has to register with the Financial Sector Conduct Authority (FSCA). FSCA is the national regulatory authority in South Africa for financial service providers and intermediaries. As the study sort to focus on experts in financial planning, attention was drawn to the FPI.

There are currently over 6000 CFP® professionals in South Africa who are FPI members. The FPI is a South African Qualifications Authority-acknowledged professional body for professional financial planners. The FPI also manages the continuous performance development programme for financial planners in order to meet the regulatory fit and proper requirements to practice (FPI, 2016/2017).

This study chose as its population FPI-registered professional financial planners, as they represent the experts in the field. This choice is deliberate so as to return the focus to experts after a deliberate disappearance from empirical studies on effectuation since 2012 (McKelvie *et al*., 2020). This is despite expert entrepreneurs being the primary participants in the conceptualisation of effectuation theory (Sarasvathy, 2001a, b).

Using the suggested guidelines provided by Hair, Black, Babin and Anderson (2010) on minimum sample sizes based on the number of constructs and items per construct, this study needed a minimum sample size of 150 with seven or fewer constructs, modest communalities and no under-defined constructs. The researcher expected to satisfy a minimum sample of at least 350 respondents for this quantitative study (Perry, 1998).

In summary, this study used professional financial planners registered with the FPI as its population of experts in the South African life assurance industry. This serves to retain the coherence with the original conceptualisation of the theory of effectuation.

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4.6 UNIT AND LEVEL OF ANALYSIS

After describing and justifying the use of professional financial planners as its population, this study now progresses to assess the unit and level of analysis used in empirical effectual studies. The objective of this analysis is to address one of the criticisms of effectuation studies: various studies identified the lack of clarity on the unit and level of analysis as the root cause of varied outcomes (McKelvie *et al*., 2020).

An analysis of the empirical studies on effectuation reveals that units of analysis are discrete decisions (heuristics), a sequence of decisions or behaviours in a start-up and pre-start-up, or the internationalisation or innovation processes of firms (McKelvie *et al*. 2020). To retain consistency with the evolution of effectuation theory, the study deliberately chose effectual behaviours as the outcome of thinking and action (Dew *et al*., 2008; Fisher, 2012) as its unit of analysis for the process-based approach of the study. It later used growth opportunities as its unit of analysis for the variance-based approach part of the study.

Care was taken to avoid ecological fallacies by ensuring a good fit between the units for which this study has empirical evidence and for which it makes general statements (Neuman, 2014). In addition, a non-equivalence fallacy was also avoided by ensuring that any explanations offered, are about the units that were measured (Neuman, 2014). This avoids the ecological and non-equivalence fallacies that may be present in extant empirical studies on effectuation.

As this study intends to create a novel dialogue on professionals in effectuation studies, it focuses on the individual professional financial planner as its level of analysis when conducting process theory to assess how effectual behaviours co-create market opportunities. When conducting variance theory, the study assesses growth performance at a firm-level as the dependent variable and effectual behaviours as the independent variable. Levels of analysis can be on a micro, macro or meso level (Neuman, 2014). An analysis conducted on the levels of analysis of empirical effectuation studies reveals that the studies were done at an individual, team, corporate unit or firm-level (McKelvie *et al*., 2020). In particular, post 2012, as far as the researcher could assess, 17 empirical effectual studies were conducted at individual-level, and 35 studies involved a team, venture or

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corporate unit-level (McKelvie *et al*., 2020). However, none were done using professional services firms.

4.6.1 Process and Variance Approach

For the process theoretical approach, this study seeks to determine whether effectual behaviours of professional financial planners – being the outcomes of discrete and observable enactment of decision-making logics and actions – use effectual networks and value co-creation to co-create market opportunities (this study's unit of analysis of independent variables). The level of analysis is the individual professional financial planner.

For the variance approach, this study seeks to understand whether co-created market opportunities mediate the relationship between effectual networks (and value co-creation) and co-created growth opportunities. In so doing, it seeks to determine whether the dependent variable – co-created growth opportunities – uses growth opportunities as its unit of analysis and the professional practice as its level of analysis.

In summary, this study's independent variables are effectual behaviours, effectual networks, value co-creation and co-created market opportunities that use the behaviours of individual professional financial planners as their unit of analysis. For the dependent variable of co-created growth opportunities, the unit of analysis is growth opportunities at a firm-level.

4.7 RESEARCH INSTRUMENTS

After detailing and justifying the units and levels of analysis, this study now explains how the research instrument was designed. This study adapted the measurement instruments of Chandler *et al.* (2011) and Brettel *et al.* (2012) to develop and validate items it used in the questionnaire to measure effectual behaviours. Read *et al.*'s (2009b) meta-analytic study was used to operationalise the formative-effectual construct with reflective measures of available means, partnerships, affordable loss, leveraging contingencies and control. It sought to identify whether network commitments to expanding resources and converging constraints, are towards value co-creation and whether they are used to co-create new markets and growth opportunities in uncertain contexts.

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In addition, Whalen and Akaka (2016) operationalised the formative opportunity co-creation construct through the reflective measures of joint development and communication of value propositions, derived and determined from ViU and the (re)formation of markets. Co-creation necessitates some form of communication. Value that is derived and determined has to be phenomenologically developed (Whalen & Akaka, 2016). As a result, this study operationalises co-created opportunities through the reflective measures of the joint development of phenomenological value propositions and (re)formed markets.

4.7.1 Design of Research Instrument

As required by the University of Pretoria's Faculty of Economics and Management Sciences Ethics Committee, the participants first had to confirm that they had read and understood all the information provided and had to grant consent to voluntarily participate in the study. Section A offered two screening questions related to requesting consent: that participants' responses could be used for academic purposes and that they are a professional financial planner in the life assurance industry.

The researcher provided a consent form to secure survey participation and acceptance of the explanations provided. It addressed who the target audience was, who the parties in the research effort were, what was being researched and why the research was being conducted. It also addressed the ethical aspects related to its voluntary nature, withdrawal at any time, anonymity, confidentiality, academic centred purpose and contact details of the researcher and supervisor.

The consent form thereafter discussed what was expected from the participants, what the survey results were intended for, the concepts that were used in the questionnaire, the structure of the questionnaire, the expected time it would take to complete, how to go about indicating responses, and the researcher's telephone and email details should the need arise to contact him.

Multiple items were created for effectuation, effectual networks, value co-creation, co-created market opportunities and co-created growth opportunities. They were structured in a Likert-scale questionnaire that generated 37 items for the constructs, as presented in Appendix A (Section 9.1). Care was taken to ensure the questionnaire was coherently

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designed and themes of interest were logically clustered according to this study's constructs of interest. The language used was straightforward and non-threatening. These measures were deliberately taken to mitigate against non-response bias.

Section B requested participants' biographical details related to their gender, age, home language, educational levels, marital status, years of practice as a professional financial planner and whether they founded at least one financial planning practice. The rest of the survey was structured according to the conceptual themes around

- Effectuators (Section C – the professional financial planner) consisting of six items;
- New markets (Section D – expanding resources and converging constraints) consisting of six items;
- Co-created value propositions (Section E – Value Co-Creation) consisting of seven items;
- Co-created opportunities (Section F – Opportunity and market Creation) consisting of six items;
- Co-created markets and opportunities (Section G – Networks and Value Co-Creation) consisting of six items; and
- Co-created growth measures (Section H – Performance Measures) consisting of six items.

After adding the questionnaire to Survey Monkey®, it was exhaustively tested to ensure the requirements of the Ethics Committee were met. These related to the communication and attestation of respondents to acknowledge – before they could continue with the survey – that they read and understood the purpose of the study, the anonymity of their responses, their voluntary participation, that they could opt out at any time and their responses would be used for academic purposes only.

4.8 DATA COLLECTION METHODS

After discussing the design of the research instrument used, this study now explains the data collection method that was deployed. This section addresses how the study operationalised data collection.

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Data was collected from professional financial planners in South Africa. The FPI of Southern Africa predominantly uses Survey Monkey® to distribute questionnaires to its members and in the event of non-completion, uses follow-up emails to remind the participants. The FPI of Southern Africa is an acknowledged professional body for financial planners and is an affiliate member of the IFSB based in the United States of America. The FPI's Integrated Report 2016/2107 boasts that members who bear the CFP® accreditation are considered financial planning experts globally (FPI, 2016/2017).

The FPI partnered with the researcher to host this study's research questionnaire on Survey Monkey®. They agreed to distribute the survey to all their members by emailing the survey link to each member. They committed to do follow-up emails for 60 days from when the survey was distributed. They then collected the raw data and shared it by email with the researcher in a manner that was free of any personal information or contact details.

The South African context, the financial services industry and professional financial planners have not been used in empirical research related to effectuation and service science. This population is unique as the research participants are typical financial planners who have founded or are actively partnering in a financial planning practice. They operate in an uncertain context characterised by frequent and uncertain regulatory changes, racialised societal structures, severe income inequality, and high levels of unemployment and poverty. This context provides a unique setting for a population that represents experts in their fields and who have either (co)founded or are representatives of practices.

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During November 2019, the FPI distributed the survey questionnaire to their entire membership of approximately 6000 professional financial planners. Two email reminders were sent to all participants. The survey received 532 responses, of which only 332 completed all the questions related to the abstract independent variables. The entire survey was completed by 215 respondents, including questions related to the dependent growth variables from the online self-administered questionnaire.

In summary, the FPI distributed the co-created survey to their entire membership of approximately 6000 members. Professional financial planners registered with the FPI served as this study's target population. This study sought to assess whether they used

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effectual behaviours to effectually co-create market and growth opportunities through effectual networks and value-co-creation.

4.9 DATA ANALYSIS METHODS

After explaining the data collection method employed, this study now describes the tools and techniques used to analyse the data collected. The analysis methods ensured this study's rigour by using reliability and validity measures.

The University of Pretoria's Statistics Department conducted the data analysis for this study as part of the services the university affords its students. IBM® SPSS® was used to do the factor analysis and Amos to do the principal components analysis (PCA) - the primary tools that were used to analyse the data so as to test the hypotheses and answer the research questions.

4.9.1 Measurement Quality

The internal consistency of scale items was measured by the coefficient of reliability, Cronbach's alpha. This measure estimates the sum of the item's variance with the variance of the total sum scale (Cooper & Schindler, 2014). Cronbach's alpha scores can range from 0 (no reliability) to 1 (perfect reliability) (Hair *et al*., 2010). A minimum score of 0.7 or higher is an acceptable reliability score (Eiselen & Uys, 2005).

Measures for internal validity, like content and face validity, are used to assess whether scale items truly measure what they intended to measure. The FPI assisted with the design, structure and testing of the questionnaire and whether it was likely to obtain suitable data to assess the hypotheses and answer this study's research questions. The FPI was specifically asked to comment on the structure, clarity, comprehensibility and expected responses from the survey.

To support construct validity, an EFA (Churchill, 1979; Worthington & Whittaker, 2006) and CFA (Gerbing & Anderson, 1988; Hinkin, 1995; Diamantopoulos & Winklhofer., 2001; Worthington & Whittaker, 2006) were conducted. The EFA yielded the criterion and construct validity that assessed whether the measures used behaved in a theoretically

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sound manner (Eiselen & Uys, 2005; Cooper & Schindler, 2014). Table 3 provides a summary of these forms of validity tests.

Table 3: Validity Estimates

Estimate	What Is Measured?	Method
Content validity	The extent to which a measure appears to be measuring the characteristic it is supposed to.	Subjective assessment of appropriateness
Face validity	The extent to which a measure seems to capture the universe of all the relevant items under study.	Panel of experts
Criterion validity	The extent to which the predictor is adequate in capturing the relevant aspects of the characteristic (criterion).	Correlation between the measure and criterion
Concurrent validity	The extent to which a measure is related to another measure (criterion), with both being measured at the same point in time.	Correlation between the scores obtained on the measure and the criterion
Predictive validity	The extent to which current scores on a given measure can predict future scores of another measure (the criterion).	Correlation between the scores obtained on the measure and the criterion
Construct validity	The extent to which a measure behaves in a theoretically sound manner.	Factor analysis

Source: Oosthuizen (2018). Adapted from Cooper and Schindler (2014:284) and Diamantopoulos and Schlegelmilch (2010: 35).

4.10 FACTOR ANALYSIS

4.10.1 Exploratory Factor Analysis

Data measured on 5-point Likert scales are acceptable for factor analysis, particularly for an EFA that provides an underlying structure of observed variables (Hair *et al*., 2010; Mvududu & Sink, 2013). As a result, the EFA is expected to provide support for the dimensionality of items and the purification of the methods used (Churchill, 1979; Hair, Black, Babin, Anderson & Tatham, 2006; Worthington & Whittaker, 2006).

The output of this analysis is used to identify latent constructs that explain the variation among a set of items (Mvududu & Sink, 2013). Depending on the statistical guidelines used, the recommended sample size-to-item ratio should range from 3 to 20 per item, where sample sizes of greater than 200 are preferred (Comrey & Lee, 1992; Mvududu & Sink, 2013). Excluding the ethical, screening and biographical questions, 37 questions in the

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questionnaire (Appendix C – Section 9.2) related to the factors of interest. As result, the minimum sample size must exceed at least 111 respondents (3 x 37). In addition, a minimum of three strong loadings on each factor is required to yield high reliability (Mvududu & Sink, 2013). A kurtosis measure of less than 7 will be acceptable for multivariate normality (Byrne, 2010).

Mvududu and Sink (2013) recommended randomly splitting the data set in half, where an EFA is to be performed on one half and a CFA on the other. The purpose of splitting the data set is to ensure that the data structure derived from the EFA holds up to a CFA with another data set (Mvududu & Sink, 2013), thus supporting the construct validity. The data was vetted for incomplete questions and irregular response patterns. The Mahalanobis Distance diagnostic tool is used to detect and remove multivariate outliers (Mvududu & Sink, 2013).

The EFA is based on the conservative guidelines of Hair *et al.* (2006), at a 5% significance level, a power level of 80% and standard errors twice the correlation coefficients. The researcher expected all items to have a loading of 0.35 or more to achieve the statistical power-of-factor loadings (Comrey & Lee, 1992; Mvududu & Sink, 2013).

The Kaiser-Meyer-Olkin (KMO) index was used to measure the sampling adequacy. For the data to be factorable, the KMO should be larger than0.60 (Kaiser, 1974) and a measure closer to 0.80 or 0.90 would indicate that the item intercorrelation matrix is ideal for factor analysis (Pett, Lackey & Sullivan, 2003).

Bartlett's test of sphericity was used to determine whether items are largely uncorrelated. The measure of significance ($p<0.05$) sphericity would suggest that the data set is factorable (Mvududu & Sink, 2013). Factors with Eigenvalues of at least 1 are retained, as suggested by Pett *et al.* (2003) and Hair *et al.* (2010). A PCA with direct oblimin, an oblique method of rotation, was used as an extraction method to reduce the large number of items into a smaller set. A cumulative variance percentage close to 50% was used to determine the total number of factors to retain as part of the solution (Pett *et al*., 2003).

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4.10.2 Confirmatory Factor Analysis

Contemporary measures introduced more empirical rigour through a CFA. This approach supports the validity of a scale following the finding that EFA is a necessary but insufficient quality measure (Gerbing & Anderson, 1988; Hinkin, 1995; Diamantopoulos & Winklhofer, 2001; Worthington & Whittaker, 2006). Conducting a CFA required a conceptual framework upon which this thesis' hypotheses are based (Mvududu & Sink, 2013). As a result, a CFA using Amos was used to assess how the research items load onto the factors determined from the EFA.

This method enabled the confirmation of the latent variables' structure (Kline, 1998). Multiple regression analysis was used to test the hypotheses using a significance level of 0.05, where $p<0.05$ will reject the null hypothesis that there is no statistically significant relationship between the factors and items loaded thereon (Neuman, 2014). Table 4 summarises the basic steps in conducting an EFA and CFA.

Table 4: Basic Steps in Conducting EFA and CFA

EFA	CFA
1. Collect data	1. Define the factor model
2. Screen data	2. Collect data
3. Check data for EFA assumptions	3. Screen data
4. Compute the intercorrelation matrix	4. Check data for CFA assumptions
5. Extract the initial set of factors	5. Compute the intercorrelation matrix
6. Determine the number of factors to retain and to rotate	6. Fit the prescribed model to the data
7. Rotate factors for a final solution	7. Evaluate the model fit
8. Interpret factor structure; name factors based on conceptual underpinnings	8. Compare with other models and interpret findings

Source: Mvududu and Sink (2013)

Hair *et al*. (2010) suggested using multiple Goodness of Fit (GOF) indices to support the GOF conclusions on how well the data fits a predefined model. A Goodness of Fit Index (GFI) and an Adjusted Goodness of Fit Index (AGFI) closest to 1 are indicative of a good model fit (Byrne, 2010). Other measures are the Absolute Fit Index (i.e., AGFI or RMSEA)

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and Incremental Fit Index (i.e., CFI). The Chi-square (χ2) measure, with associated degrees of freedom (df), tests the hypotheses on whether the observed sample and estimated co-variance matrix are equal (Hair *et al*., 2010). A summary of the measures that are used and their acceptable levels are summarised in Table 5.

Table 5: GOF measures and Acceptable Levels

Indices	Recommended Value
Chi-square (χ2) / df (CMIN/df)	< 3
p-value	≥ 0.05
GFI	≥ 0.95
AGFI	≥ 0.80
Normed Fit Index (NFI)	≥ 0.90
CFI	≥ 0.90
Incremental Index of Fit (IFI)	≥ 0.90
RMSEA	≤ 0.08

Source: Author's construction

The CMIN/df statistic is the χ2 and df measure to compensate for the sensitivity of the χ2 measure to the sample size. A ratio of < 3 is a good measure, whereas < 5 is permissible (Hu & Bentler, 1999). The Good-of-Fit Index (GFI) is an alternative to the χ2 and measures how closely the model replicates the observed co-variance matrix. An AGFI index value of 0.95 is a good fit (Hu & Bentler, 1999). When the df number is large, the GFI index has a downward bias and increases when the number of parameters increases when the sample is large (Hair *et al*., 2010). An AGFI is the adjusted GFI based upon the df, and increases with sample size. Values of ≥ 0.8 are generally acceptable for well-fitting models (Hair *et al*., 2010). The NFI and CFI are other fit indices where the CFI is an improvement on the NFI due to the NFI underestimating fit in small samples (Byrne, 2010). A value closer to 1 indicates a good fit for both measures, where an acceptable cut-off point is ≥ 0.9 (Hair *et al*., 2010).

The IFI is similar to the NFI, where df are taken into account to address issues of parsimony and sample size (Byrne, 2010). Lastly, the RMSEA is the most commonly used measure as it is sensitive to the number of parameters used. It favours parsimony and corrects for the χ2 measure that rejects models with large sample sizes or a large number of observed variables (Byrne, 2010). A measure of less than 0.06 indicates a good fit, between 0.08 and 0.1 a mediocre fit, and > 1 a poor fit (Byrne, 2010).

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4.10.3 Path Analysis

The CFA is followed by a path analysis using multiple regression analysis to determine whether the data collected fits the theoretical model developed (Figure 3) (Hair *et al*., 2011). The model fit would confirm that financial planners use effectual behaviours to co-create growth opportunities for their practices through co-created markets opportunities, by using effectual networks and value co-creation behaviours.

According to Pallant (2013), the purpose of conducting a multiple regression analysis is to explore the relationship between a dependent variable and one or more independent variables known as predictors. In order to test the hypothesised relationships between the constructs presented in Figure 3, a path analysis was done using a CB-SEM technique. A CB-SEM is a confirmatory statistical technique to test or confirm non-experimental theory (Byrne, 2010; Hair *et al.,* 2011; Babin & Svensson, 2012; Svensson, 2015). Table 6 summarises the factor analysis, extraction method, rotation method and their usages in this study.

Table 6: Factor Analysis, Extraction Method, Rotation Method and their Usages

Statistical Procedure	Description	Usage
Factor analysis type		
Exploratory	Limited preconceived notion of underlying factor structure.	• Discover factor structure of a measure (factorial validity); • Examine internal reliability of derived factors; and • Determine the important factors in classifying items.
Confirmatory	• Data set tested against a predefined factor model; and • Strong link to structured equation modelling	• Determine fit for hypothesised factor structure; • Compare alternative models; and • Compare factor structures of two or more groups.
Extraction method: PCA	Includes both common and unique variance in the analysis.	• Data reduction; • Test development; and • Develop composite scores for subsequent analysis.
Rotational method: Oblique	Based on the assumption that the factors are	Simplify factor structure so that factors can be coherently interpreted.

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	correlated (sample method: oblimin).

Adapted from DeCoster (1998)

The individual dependent variables of co-created growth opportunities were included in the path analysis, and any related missing items were removed from the final list of respondents. As the sample adequacy, measured by KMO, was not expected to be smaller than 0.8, the entire list of participants between the split data set was included to determine the validity of the model. The $\chi 2$-test for significance ($p<0.05$) was used to determine whether the null hypothesis that the model does not fit the data would be rejected and whether the individual relationships between the constructs, as represented in Figure 3, are statistically significant. Lastly, all GOF measures were used to assess whether there was a good model fit (Byrne, 2010).

In summary, the data was randomly split in order to conduct an EFA on one half to determine the underlying structure of the factors in the data. These factors were then used in a CFA analysis to confirm the validity of these factors on the other half of the data set. Finally, a CB-SEM was conducted to test the validity of the theoretical framework that was developed in Chapter 3.

4.11 QUALITY ASSURANCE AND ETHICS

After describing the data analysis methods that were used, the study now addresses the care that was taken to ensure the quality and ethical considerations when conducting this research. Ethical issues relate to concerns, dilemmas and conflicts that may arise when conducting research (Neuman, 2014). This section covers the two broad categories of the researcher's responsibility: towards the scientific community and towards the participants (Neuman, 2014). This is addressed through five key ethical issues: the role of the researcher; informed consent; use of incentives; privacy, anonymity and confidentiality and data quality (Roberts & Allen, 2015).

4.11.1 Role of the Researcher

The researcher has more than 27 years' experience in the life assurance industry and developed many relationships with industry participants. As a result, the researcher

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remained independent and did not influence any participants despite many telephonic calls received once some participants recognised his name on the consent form. Clarity on the purpose and objective of the research was provided, consistent to what appeared on the participant consent form.

In addition, as the researcher plays a management role at one of the product providers in the financial service industry, care was taken to ensure independence from the participants by allowing the FPI to control the uploading, dissemination, reminders and collection of the data.

4.11.2 Informed Consent

A letter of introduction and informed consent was created as per the requirements of the University of Pretoria's Faculty of Economics and Management Sciences Ethics Committee, as exhibited in Appendix B (Section 9.2). A rigorous ethical clearance process was followed that included a letter of consent from the FPI.

Care was taken to provide the researcher and study leader's names and contact details, the title and purpose of the research. The consent form included the anonymity and confidentiality of the participants, voluntary participation and voluntary withdrawal of participation during the survey process. Lastly, it also provided the anticipated time it would take to complete the survey.

Explicit acknowledgement and attestations were required from the participants that they read and understood the information and consented to voluntarily participate. Survey Monkey® rules enabled a compulsory check-box completion of the acknowledgements and attestations before the participant could proceed with the survey. Following the recommendation of Mahon (2013) and the requirements set by the Ethics Committee, the above information formed the first page of the online survey.

4.11.3 Use of Incentives

Despite the slow start in the first week after the survey distribution, no incentives were offered to the participants. Two reminder emails were sent over the two months the survey was left open.

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4.11.4 Privacy, Anonymity and Confidentiality

To secure participant privacy, anonymity and confidentiality, the FPI distributed and collected the data on behalf of the researcher. Links to the survey were sent by the FPI to its members via email. The survey made no provision for any personal information to be provided, and only the raw data collected on Survey Monkey® was shared with the researcher.

Explicit mention was made to the survey participants, and in the collaborative agreement between the FPI and the Faculty of Economic and Management Sciences, that member participation is voluntary, the responses will be anonymous and the data will be kept confidential and used for academic purposes only.

4.11.5 Data Quality

Ethically defendable research is dependent on obtaining quality data (Roberts & Allen, 2015). Addressing the factors that may affect data quality, care was taken to ensure that the participants represented the population of interest to this study. The designation CFP®, is only conferred by the FPI in South Africa. As a result, it was their members, due to their qualification and experience, to whom this research was directed. These professional financial planners were considered novel proxies for the expert entrepreneurs that Sarasvathy (2001a, b) used when she conceptualised effectuation theory.

The FPI regularly conducts surveys among its members. As a result, the FPI provided surety that the members' email addresses they had were recent and updated. This was necessary to ensure that the survey reaches the targeted audience. In addition, the FPI uses a planning schedule of surveys to ensure that survey fatigue which may affect the non-response bias, as articulated by Roberts and Allen (2015), is minimised. Another potential ethical concern is the dropout rate as a result of forced responding (Baker, 2012; Mahon, 2013; Roberts & Allen, 2015). Although this strategy was deployed to reduce missing data, the consequences of non-response and the possible violation of informed consent could be material considerations (Roberts & Allen, 2015).

Another area of concern related to data quality is multiple responding (Gosling, Vazire, Srivastava & John, 2004; Roberts & Allen, 2015). Survey Monkey's® rules enabled the

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setting of the requirement that a survey can only be completed once. In the event the survey was abandoned, the affected participants were allowed to return to complete the survey at a later time if they wished to do so. Lastly, the survey questionnaire was vetted by an expert survey coordinator at the FPI. All feedback was accepted, and changes were made to ensure the highest quality data.

In conclusion, care was taken to ensure the researcher's ethical responsibilities towards the research community and participants were up to the highest standard. The respondents' participation was voluntary, and their identities and responses remain anonymous. All respondents were free to withdraw their participation at any time during the research without incurring any penalties. All data quality risks related to the choice of respondents, successful distribution of the survey, accessibility to the survey, non-response bias, missing data and multiple responses were reasonably mitigated. The FPI provided the raw data from the survey, which contained no personal information of any respondents. The respondents' permission was sought to use their responses for academic research purposes only.

4.12 CONCLUSION

The choice of a survey research design for this study was made to maintain the coherence of a pragmatic paradigm with an ontological philosophy that dominates effectuation research. The quantitative approach – a survey approach – sought to apply theories of effectuation, entrepreneurial marketing and service science within CE, so as to firmly establish these theories in a mature phase of their development.

The choice of the survey method – to distribute the questionnaire by the FPI to its 6000 members – and the use of the 5-point Likert scale to collect data within the Ethics Committee's ethical constraints ensured the quality of the data collected. This study used professional financial planners registered with the FPI as the population of experts in the life assurance industry in South Africa. Using experts served to retain the coherence with the original conceptualisation of the theory of effectuation.

This study maintains the focus on effectual behaviours found in contemporary studies, retains the focus on experts as was originally conceptualised and ensures consistency with the ontological pragmatic stance of effectuation theory, CE and service science. This is not

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a comparative study but rather an explanatory study of how effectual behaviours are used to co-created market and growth opportunities through effectual networks and value co-creation. Deliberate care was taken to allow for the replication of the study and for the generalisability of the population of financial advisors. It also took into account the accessibility, feasibility and pragmatic application of effectuation, CE and service-science theories in an uncertain context where growth is the ultimate measure of progress.

The independent variables of effectual behaviours, effectual networks, value co-creation and co-created market opportunities use the behaviours of individual professional financial planners as their unit of analysis. Growth opportunities at a firm-level was used as the unit of analysis for the dependent variable of co-created growth opportunities. This avoided ecological and non-equivalence fallacies that may be present in extant empirical studies on effectuation.

The data was randomly split in half. An EFA was conducted on the one half (166 respondents) so that the underlying structure of the factors in the data could be determined. These factors were then used in a CFA analysis on the other half of the data set to confirm their validity. The theoretical framework developed in Chapter 3 was used to construct relationships between these factors. Finally, a path analysis was conducted to test the validity of the theoretical framework.

Lastly, care was taken to ensure that the researcher's ethical responsibilities towards the research community and participants were up to the highest standard. The respondents' participation was voluntary, and their identities and responses remain anonymous. All respondents were free to withdraw their participation at any time during the research, without incurring any penalties. All data quality risks related to the choice of respondents, successful distribution of the survey, accessibility to the survey, non-response bias, missing data and multiple responses were reasonably mitigated. The FPI provided the raw data from the survey, which contained no personal information of any respondents. The respondents' permission was requested to use their responses for academic purposes only.

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5 DATA ANALYSIS

5.1 INTRODUCTION

After describing the methodology in terms of the research design, data collection and analysis methods, and the ethics involved in the research process, this study now proceeds to the data analysis section. The survey questionnaire is found in Appendix C (Section 9.2). The data analysis chapter situates itself between the research methodology (Chapter 4) and the discussion of the findings (Chapter 6). The output of this study's analysis was generated by IBM® SPSS® procedures and Amos. This section is structured by first presenting descriptive data about the respondents, followed by data for each factor, research question, proposition and hypothesis in the same sequence as they were presented in Chapter 4.

5.2 DESCRIPTIVE STATISTICS

Of the 215 that completed the entire survey, approximately 68% were male, 29% were female, and 2% preferred not to say (Table 7).

Table 7: Gender

Description	Frequency	Percent
Female	63	29.3
Male	147	68.4
Prefer not to say	5	2.3
Total	215	100.0

Source: Author's construction

Of the 215 respondents who completed the entire survey, approximately 42% were between 40 and 50 years old, and 28% were between 50 and 60 years old (Table 8).

Table 8: Age

Description	Frequency	Percent
30 years or older but younger than 40 years	29	13.5
40 years or older but younger than 50 years	90	41.9

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50 years or older but younger than 60 years	61	28.4
60 years or older	32	14.9
Younger than 30 years	3	1.4
Total	215	100.0

Source: Author's construction

Of the 215 respondents who completed the entire survey, approximately 54% were English-speaking, 32% Afrikaans-speaking, and 7% spoke a Nguni language (Zulu, Xhosa, Swati, Ndebele) (Table 9).

Table 9: Home Language

Description	Frequency	Percent
Afrikaans	68	31.6
English	117	54.4
German	3	1.4
Nguni (Zulu, Xhosa, Swati, Ndebele)	16	7.4
Sotho (Sepedi, SeSotho, Tswana)	6	2.8
Venda/ Ishonga	5	2.3
Total	215	100.0

Source: Author's construction

Of the 215 respondents who completed the entire survey, approximately 43% had professional qualifications, 30% had postgraduate degrees, and 96% had a post-matric qualification (Table 10).

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Table 10: Education

Description	Frequency	Percent
Bachelor's degree	25	11.6
Diploma	24	11.2
Matric certificate	9	4.2
Postgraduate degree	65	30.2
Professional qualification	92	42.8
Total	215	100.0

Source: Author's construction

Of the 215 (respondents who completed the entire survey, approximately 60% were married, 12% were single, and 10% were divorced (Table 11).

Table 11: Marital Status

Description	Frequency	Percent
Divorced	22	10.2
Domestic Partnership	13	6.0
Married	128	59.5
Separated	15	7.0
Single	25	11.6
Widowed	12	5.6
Total	215	100.0

Source: Author's construction

Of the 215 respondents who completed the entire survey, the mean years in practice was 16.5; 38% had been in practice between 9 and 16 years, and 79% had been in practice for 10 years or more (Table 12).

Table 12: Years of Practice

Years	Frequency	Percent
9	15	7.0
10	6	2.8
11	13	6.0

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12	6	2.8
13	12	5.6
14	12	5.6
15	15	7.0
16	17	7.9
.	.	.
.	.	.
.	.	.
28	6	2.8
29	1	.5
30	24	11.2
Total	215	100.0

Source: Author's construction

Of the 215 respondents who completed the entire survey, approximately 79% indicated that they had founded at least one financial planning practice (Table 13).

Table 13: Founding of a Financial Practice

Description	Frequency	Percent
	1	0.5
No	45	20.9
Yes	169	78.6
Total	215	100.0

Source: Author's construction

5.3 EXPLORATORY FACTOR ANALYSIS

Of the 532 respondents' data sets, 200 were removed because of missing data and outliers. The remaining data set of 332 was randomly split in half; an EFA was done on one half (166 respondents), and a CFA was done on the other half (166 - different participants). The EFA was performed by using a PCA extraction method with a direct oblimin, an oblique method of rotation approach. The initial analysis produced nine factors with Eigenvalues greater than 1. As this exceeded the feasible number of variables, those that had an Eigenvalue greater than 1 were forced using a four-factor solution.

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To verify whether this study's data was suitable for factor analysis, the KMO measure of sampling adequacy and Bartlett's test of sphericity were considered. The KMO measure of sampling adequacy was greater than 0.8. Bartlett's test of sphericity was significant ($\chi 2 = 1622.83$; $df = 406$, $p<0.05$) (Table 14).

Table 14: EFA KMO and Bartlett's Test of Sphericity

KMO and Bartlett's Test of Sphericity		
KMO Measure of Sampling Adequacy		0.819
Bartlett's test of sphericity	Approx. χ2	1622.832
	Df	406
	Sig.	0.000

Source: Author's construction

To determine how many factors would have an Eigenvalue greater than 1, according to Kaiser's criterion, the total variance explained was considered (Table 15). The first four factors with the highest Eigenvalues explain 43% of the cumulative variance of the data. The first factor explains almost 25% of the data.

Table 15: EFA Total Variance Explained

Total Variance Explained							
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings (a)
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	7.107	24.507	24.507	7.107	24.507	24.507	5.899
2	2.021	6.968	31.475	2.021	6.968	31.475	4.166
3	1.826	6.298	37.773	1.826	6.298	37.773	2.977
4	1.550	5.346	43.120	1.550	5.346	43.120	2.173
5	1.467	5.058	48.178				
6	1.395	4.810	52.987				

Extraction Method: PCA
(a) When components are correlated, sums of squared loadings cannot be added to obtain a total variance.

Source: Author's construction

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To make the final decision on the number of factors to use, consideration was given to the rotated four-factor solution presented in the pattern matrix in Table 16. The highest loading items on each component were identified and labelled. The item loadings on the four components can be summarised as follows:

- Twelve items had loadings greater than 0.3 for Factor 1;
- Eight items had loadings greater than 0.3 for Factor 2;
- Five items had loadings greater than 0.3 for Factor 3; and
- Four items had loadings greater than 0.3 for Factor 4.

Table 16: EFA Pattern Matrix

Pattern Matrix (a)				
	Factors			
	1	2	3	4
E14a: Consider how they want to experience the value my services or solutions will create for them.	0.803	0.019	-0.185	0.091
E14b: Determine what is the value that any quality aspects of my services or solutions will create for them.	0.769	0.105	-0.038	-0.077
E14c: Determine what is the value that any innovative features of my services or solutions will create for them.	0.735	0.123	-0.060	0.074
E14d: Determine what is the value that any of their personal preferences for my services or solutions will create for them.	0.722	0.120	0.058	-0.074
E14f: Determine what are the mutual benefits that my value proposition will create for all parties involved.	0.694	0.066	0.100	-0.072
G16d: I develop my value proposition by considering the context within which that value will be created.	0.555	0.078	0.010	0.168
E14g: Determine what will create a hassle-free value exchange.	0.518	0.060	0.185	0.066
C12a: I considered who I am, what I know well and who I know when co-creating a market for my practice.	0.421	0.032	0.389	-0.133
D13d: I use my professional body to help expand my resources (new clients, technology, investments or expertise) to co-create new markets for my practice.	0.381	-0.084	-0.174	0.379
F15f: I prefer face-to-face interactions when co-creating opportunities.	0.369	-0.125	0.212	0.089
G16c: I develop my value proposition by determining the value that will be created when my clients experience my services and solutions.	0.356	0.261	0.140	-0.157

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C12d: When co-creating a market for my practice, unpredictable challenges are expected. I exploit these contingencies through experimentation and by being flexible.	0.332	0.065	0.258	-0.096
G16b: I use my networks' converging constraints (conditions, expectations and goals) to co-create new markets for my practice.	-0.099	0.775	0.110	-0.092
G16f: Co-creating markets and opportunities grows my practice.	0.122	0.681	-0.266	0.081
G16a: I use my networks' expanded resources (new clients, technology, investments or expertise) to co-create new markets for my practice.	0.207	0.616	-0.002	0.026
G16e: I co-create new opportunities through co-creating new markets and value propositions.	0.275	0.560	-0.163	0.191
D13c: I use my expanding resources (new clients, technology, investments or expertise) and converging constraints (conditions, expectations or commitments) from my personal network to co-create new markets for my practice.	0.158	0.533	0.013	0.059
F15e: I use electronic media when co-creating opportunities.	-0.075	0.443	0.054	0.307
D13a: I use my personal network to expand my resources (new clients, technology, investments or expertise) to co-create new markets for my practice.	0.236	0.392	0.194	-0.255
D13b: My personal network creates converging constraints (conditions, expectations or commitments) that force me to co-develop goals with them.	-0.092	0.348	0.193	0.322
C12f: I prefer to be in control when the future is unpredictable.	0.150	-0.181	0.639	0.091
F15b: I first co-create an opportunity before co-creating a market for my practice.	-0.248	0.297	0.606	0.026
C12c: I am careful not to commit more time, effort or money than I could afford to lose when co-creating a market for my practice.	0.034	-0.117	0.584	0.358
F15d: The value that my service and solutions create is derived from my clients' experiences of my service and solutions.	0.211	0.134	0.551	-0.241
F15c: The value that my services and solutions create is determined in a particular context.	0.319	0.123	0.444	0.050
F15a: I first co-create a market before co-creating an opportunity for my practice.	-0.150	0.087	0.130	0.651
D13e: My professional body creates constraints (conditions, expectations or commitments) that force me to co-develop goals with them.	0.002	0.046	0.006	0.577
C12b: My friends, family or other contacts from my personal or professional networks are strategic and pre-commit resources to my practice that I would	0.167	0.051	0.040	0.417

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otherwise have to pay for when co-creating a market for my practice. C12e: I use my professional body for assistance in co-creating a market for my practice. Extraction Method: PCA Rotation Method: Oblimin with Kaiser normalisation (a) Rotation converged in 17 iterations.	0.279	0.093	-0.025	0.383

Source: Author's construction

Table 17 reflects the strength of the relationships between the factors. Correlations between most of the factors range between 0.1 and 0.4 and would be classed as positive but weakly correlated (Cohen, 1988; Greasley, 2008). The correlation between Factor 3 and 4 is less than 0.1 but greater than 0.

Table 17: EFA Factor Correlation Matrix

Factor Correlation Matrix				
Factor	1	2	3	4
1	1.000	0.309	0.237	0.138
2	0.309	1.000	0.204	0.147
3	0.237	0.204	1.000	0.023
4	0.138	0.147	0.023	1.000

Extraction Method: PCA
Rotation Method: Oblimin with Kaiser normalisation

Source: Author's construction

Consideration will now be given to the reliability of the scales used. The most common measure of internal consistency is the Cronbach alpha coefficient. These are reflected for each of the four factors below. The number of cases (166) is correct for each factor, and the number of items for each is correct: 12 items for Factor 1, eight items for Factor 2, five items for Factor 3 and four items for Factor 4.

5.3.1 Reliability Scale Factor 1

The Cronbach's alpha for Factor 1 had a value of 0.842 (Table 19). Eleven items' corrected item-total correlation values were greater than 0.3 (Table 20). Only one item had a value of less than 0.3, that being 0.263. Nine of the 12 items' Cronbach's alpha, if the item was

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deleted, had a value less than the final alpha obtained (Table 20). The remaining three items had a value marginally greater than the final alpha.

Table 18: EFA Factor 1 Case Summary

Cases	N	%
Valid	166	100.0
Excluded	0	.0
Total	166	100.0

Source: Author's construction

Table 19: EFA Factor 1 Reliability Statistics

Cronbach's Alpha	Number of Items
0.842	12

Source: Author's construction

Table 20: EFA Factor 1 Item-total Statistics

	Scale Mean If Item Deleted	Scale Variance If Item Deleted	Corrected Item-total Correlation	Cronbach's Alpha If Item Deleted
E14a: Consider how they want to experience the value my services or solutions will create for them.	43.9231	22.524	0.645	0.820
E14b: Determine what is the value that any quality aspects of my services or solutions will create for them.	43.8990	22.290	0.682	0.817
E14c: Determine what is the value that any innovative features of my services or solutions will create for them.	43.9351	22.349	0.693	0.816
E14d: Determine what is the value that any of their personal preferences for my services or solutions will create for them.	43.9833	22.183	0.694	0.816

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E14f: Determine what are the mutual benefits that my value proposition will create for all parties involved.	43.8267	22.687	0.633	0.821
E14g: Determine what will create a hassle-free value exchange.	43.8387	23.297	0.513	0.830
G16c: I develop my value proposition by determining the value that will be created when my clients experience my services and solutions.	43.8387	23.840	0.419	0.837
G16d: I develop my value proposition by considering the context within which that value will be created.	43.8207	24.149	0.533	0.830
F15f: I prefer face-to-face interactions when co-creating opportunities.	43.5978	24.895	0.310	0.844
C12a: I considered who I am, what I know well and who I know when co-creating a market for my practice.	43.5797	24.421	0.466	0.834
C12d: When co-creating a market for my practice, unpredictable challenges are expected. I exploit these contingencies through experimentation and by being flexible.	44.0797	24.340	0.338	0.844
D13d: I use my professional body to help expand my resources (new clients, technology, investments or expertise) to co-create new markets for my practice.	44.6988	24.563	0.262	0.852

Source: Author's construction

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5.3.2 Reliability Scale Factor 2

The Cronbach's alpha for Factor 2 had a value of 0.756 (Table 22). All eight items' corrected item-total correlation values were greater than 0.3 (Table 23). None of the eight items' Cronbach's alpha, if the item was deleted, had a value greater than the final alpha obtained (Table 23).

Table 21: EFA Factor 2 Case Summary

Cases	N	%
Valid	166	100.0
Excluded	0	.0
Total	166	100.0

Source: Author's construction

Table 22: EFA Factor 2 Reliability Statistics

Cronbach's Alpha	Number of Items
0.756	8

Source: Author's construction

Table 23: EFA Factor 2 Item-total Statistics

	Scale Mean If Item Deleted	Scale Variance If Item Deleted	Corrected Item-total Correlation	Cronbach's Alpha If Item Deleted
D13a: I use my personal network to expand my resources (new clients, technology, investments or expertise) to co-create new markets for my practice.	26.49	10.821	0.388	0.741
D13b: My personal network creates converging constraints (conditions, expectations or commitments) that force me to co-develop goals with them.	27.00	10.509	0.340	0.754

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D13c: I use my expanding resources (new clients, technology, investments or expertise) and converging constraints (conditions, expectations or commitments) from my personal network to co-create new markets for my practice.	26.73	10.463	0.478	0.726
F15e: I use electronic media when co-creating opportunities.	26.85	10.517	0.329	0.756
G16a: I use my networks' expanded resources (new clients, technology, investments or expertise) to co-create new markets for my practice.	26.66	10.128	0.585	0.708
G16b: I use my networks' converging constraints (conditions, expectations and goals) to co-create new markets for my practice.	26.96	10.162	0.511	0.719
G16e: I co-create new opportunities through co-creating new markets and value propositions.	26.70	9.967	0.552	0.712
G16f: Co-creating markets and opportunities grows my practice.	26.48	10.299	0.495	0.723

Source: Author's construction

5.3.3 Reliability Scale Factor 3

The Cronbach's alpha for Factor 3 had a value of 0.628 (Table 25). All five items' corrected item-total correlation values were greater than 0.3 (Table 26). None of the five items' Cronbach's alpha, if the item was deleted, had a value greater than the final alpha obtained (Table 26).

Table 24: EFA Factor 3 Case Summary

Cases	N	%
Valid	166	100.0
Excluded	0	.0
Total	166	100.0

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Source: Author's construction

Table 25: EFA Factor 3 Reliability Statistics

Cronbach's Alpha	Number of Items
0.628	5

Source: Author's construction

Table 26: EFA Factor 3 Item-total Statistics

	Scale Mean If Item Deleted	Scale Variance If Item Deleted	Corrected Item-total Correlation	Cronbach's Alpha If Item Deleted
C12c: I am careful not to commit more time, effort or money than I could afford to lose, when co-creating a market for my practice.	15.27	4.320	0.349	0.601
C12f: I prefer to be in control when the future is unpredictable	14.72	4.883	0.395	0.570
F15b: I first co-create an opportunity before co-creating a market for my practice.	15.26	4.629	0.372	0.580
F15c: The value that my services and solutions create, is determined in a particular context.	14.87	4.923	0.401	0.569
F15d: The value that my service and solutions create, is derived from my clients' experiences of my service and solutions.	14.84	4.642	0.417	0.557

Source: Author's construction

5.3.4 Reliability Scale Factor 4

The Cronbach's alpha for Factor 4 had the value of 0.407 (Table 28). All four items' corrected item-total correlation values are less than 0.3 (Table 29). None of the four items' Cronbach's alpha, if the item was deleted had a value greater than the final alpha obtained (Table 29).

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Table 27: EFA Factor 4 Case Summary

Cases	N	%
Valid	166	100.0
Excluded	0	.0
Total	166	100.0

Source: Author's construction

Table 28: EFA Factor 4 Reliability Statistics

Cronbach's Alpha	Number of Items
0.407	4

Source: Author's construction

Table 29: EFA Factor 4 Item-total Statistics

	Scale Mean If Item Deleted	Scale Variance If Item Deleted	Corrected Item-total Correlation	Cronbach's Alpha If Item Deleted
C12b: My friends, family or other contacts from my personal or professional networks are strategic and pre-commit resources to my practice that I would otherwise have to pay for when co-creating a market for my practice.	9.45	4.333	0.175	0.389
C12e: I use my professional body for assistance in co-creating a market for my practice.	9.86	3.720	0.226	0.341
D13e: My professional body creates constraints (conditions, expectations or commitments) that force me to co-develop goals with them.	9.90	3.979	0.263	0.297
F15a: I first co-create a market before co-creating an opportunity for my practice.	9.63	4.405	0.238	0.330

Source: Author's construction

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5.4 CONFIRMATORY FACTOR ANALYSIS

Of the 532 respondents' data sets, 200 were removed because of missing data and outliers. The remaining data set of 332 was randomly split in half; an EFA was done on one half (166 respondents), and a CFA was done on the other half. After displaying the results for the EFA, this study now progresses to the CFA analysis. The CFA was done in Amos.

The reliability of the four factors were then tested. Evaluating these four factors against the literature review (Chapter 2 and 3) and the hypothesised relationships that need to be tested (Chapter 4), the prior specification of the constructs needed for a CFA is presented in Table 30.

Table 30: CFA Factor/Label

Factor (EFA)	Label
Factor 1	Value co-creation
Factor 2	Co-created networks
Factor 3	Effectual behaviours
Factor 4	Co-created market opportunities

Source: Author's construction

5.4.1 Effectual Behaviours

The model is recursive with a sample size of 166. The assessment of normality for the effectual behaviours factor, using the kurtosis measure, is 15.675 – substantially greater than the minimum required measure of 7. The critical ratio (CR), being the z-statistic, is 10.306 – substantially greater than the minimum required measure of 5 (Table 31).

Table 31: CFA Effectual Behaviours Normality Assessment

Variable	Min	Max	Skew	CR	Kurtosis	CR
C12a	2.000	5.000	-0.585	-3.075	0.957	2.517
C12c	1.000	5.000	-0.615	-3.235	-0.104	-0.273
C12f	2.000	5.000	-0.353	-1.857	0.022	0.057
F15b	1.000	5.000	-0.360	-1.892	-0.246	-0.648
F15c	2.000	5.000	-0.721	-3.791	0.780	2.051
F15d	1.000	5.000	-0.724	-3.809	1.627	4.280
Multivariate					15.675	10.306

Source: Author's construction

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5.4.1.1 Computation of Degrees of Freedom and Model Result of Effectual Behaviours

Analysing the hypothesised model, it is observed that the analysis was based on 21 sample moments, where 12 distinct parameters were estimated, resulting in 9 df (Table 32).

Table 32: Computation of Degrees of Freedom for Effectual Behaviours

Number of distinct sample moments:	21
Number of distinct parameters to be estimated:	12
df (21 - 12):	9

Source: Author's construction

The bottom-line results indicate that the minimum result was achieved in reaching a convergent solution, yielding a $\chi 2$ value of 13.424 with 9 df (Table 33).

Table 33: Model Result of Effectual Behaviours

Result	Minimum was achieved
$\chi 2$	13.424
df	9
Probability level	0.144

Source: Author's construction

5.4.1.2 Maximum Likelihood Estimates (Effectual Behaviours)

In both Table 34 and Table 35, all the items under 'effectual behaviours' are significant ($p<0.05$).

Table 34: Regression Weights Effectual Behaviours

			Estimate	Standard Error (SE)	CR	P
F15d	<---	F3	1.000			
F15c	<---	F3	0.793	0.288	2.757	0.006
F15b	<---	F3	0.703	0.325	2.161	0.031
C12f	<---	F3	0.644	0.243	2.654	0.008
C12c	<---	F3	0.707	0.344	2.057	0.040
C12a	<---	F3	0.758	0.269	2.813	0.005

Source: Author's construction

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Table 35: Regression Variances Effectual Behaviours

	Estimate	SE	CR	P
F3	0.135	0.060	2.254	0.024
ef15d	0.365	0.062	5.930	***
ef15c	0.429	0.058	7.396	***
ef15b	0.850	0.101	8.428	***
ec12f	0.343	0.045	7.703	***
ec12c	0.990	0.116	8.516	***
ec12a	0.344	0.048	7.153	***

Source: Author's construction

5.4.1.3 Model Fit Indices Effectual Behaviours (Effectual Behaviours)

A summary of the model fit indices of CFA is shown in Table 36.

Table 36: Effectual Behaviours Model Fit Indices

Indices	Recommended Value	Model Fit Indices
CMIN/df	< 3	1.492
p-value	≥ 0.05	0.144
GFI	≥ 0.95	0.974
AGFI	≥ 0.80	0.939
NFI	≥ 0.90	0.753
CFI	≥ 0.90	0.888
IFI	≥ 0.90	0.902
RMSEA	≤ 0.08	0.055

Source: Author's construction

5.4.2 Effectual Networks

The model is recursive with a sample size of 166. The assessment of normality for the effectual network factor, using the kurtosis measure, is 26.313 – substantially greater than the minimum required measure of 7. The CR, being the z-statistic, is 15.101 – substantially greater than the minimum required measure of 5 (Table 37).

Table 37: CFA Effectual Networks Normality Assessment

Variable	Min	Max	Skew	CR	Kurtosis	CR
D13a	1.000	5.000	-0.991	-5.211	1.900	4.996
D13b	1.000	5.000	-0.699	-3.678	0.213	0.560
D13c	1.000	5.000	-0.733	-3.857	1.397	3.673
G16a	1.000	5.000	-1.054	-5.542	1.892	4.977

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G16b	1.000	5.000	-0.057	-0.301	0.155	0.408
G16e	1.000	5.000	-0.629	-3.309	0.857	2.253
G16f	1.000	5.000	-0.799	-4.201	0.892	2.345
Multivariate					26.313	15.101

Source: Author's construction

5.4.2.1 Computation of Degrees of Freedom and Model Result of Effectual Networks

Analysing the hypothesised model, it is observed that the analysis was based on 28 sample moments, where 14 distinct parameters were estimated, resulting in 14 df (Table 38).

Table 38: Computation of Degrees of Freedom for Effectual Networks

Number of distinct sample moments:	28
Number of distinct parameters to be estimated:	14
df (28 - 14)	14

Source: Author's construction

The bottom-line results indicate that the minimum result was achieved in reaching a convergent solution, yielding a $\chi 2$ value of 86.354 with 14 df (Table 39).

Table 39: Model Result of Effectual Networks

Result	Minimum was achieved
$\chi 2$	86.354
df	14
Probability level	0.000

Source: Author's construction

5.4.2.2 Maximum Likelihood Estimates (Effectual Networks)

In both Table 40 and Table 41 all the items under 'effectual networks' are significant ($p<0.05$).

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Table 40: Regression Weights Effectual Networks

			Estimate	SE	CR	P
G16f	<---	F2	1.000			
G16e	<---	F2	1.192	0.214	5.561	***
G16b	<---	F2	1.209	0.215	5.623	***
G16a	<---	F2	1.196	0.212	5.650	***
D13c	<---	F2	0.652	0.169	3.849	***
D13b	<---	F2	0.862	0.210	4.111	***
D13a	<---	F2	0.771	0.180	4.291	***

Source: Author's construction

Table 41: Regression Variances Effectual Networks

	Estimate	SE	CR	P
F2	0.195	0.058	3.375	***
eg16f	0.441	0.056	7.846	***
eg16e	0.392	0.055	7.089	***
eg16b	0.374	0.054	6.930	***
eg16a	0.353	0.052	6.853	***
ed13c	0.494	0.057	8.620	***
ed13b	0.710	0.083	8.519	***
ed13a	0.497	0.059	8.436	***

Source: Author's construction

5.4.2.3 Model Fit Indices (Effectual Networks)

A summary of the model fit indices of CFA is shown in Table 42.

Table 42: Effectual Networks Model Fit Indices

Indices	Recommended Value	Model Fit Indices
CMIN/df	< 3	3.699
p-value	≥ 0.05	0.000
GFI	≥ 0.95	0.863
AGFI	≥ 0.80	0.725
NFI	≥ 0.90	0.686
CFI	≥ 0.90	0.715
IFI	≥ 0.90	0.723
RMSEA	≤ 0.08	0.177

Source: Author's construction

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5.4.3 Value Co-creation

The model is recursive with a sample size of 166. The assessment of normality for the value co-creation factor, using the kurtosis measure, is 47.866 – substantially greater than the minimum required measure of 7. The CR, being the z-statistic, is 24.378 – substantially greater than the minimum required measure of 5 (Table 43).

Table 43: CFA Value Co-creation Normality Assessment

Variable	Min	Max	Skew	CR	Kurtosis	CR
E14a	1.000	5.000	-1.218	-6.404	3.282	8.632
E14b	1.000	5.000	-0.927	-4.875	1.816	4.776
E14c	1.000	5.000	-0.800	-4.208	1.478	3.887
E14d	1.000	5.000	-0.902	-4.742	1.330	3.497
E14f	1.000	5.000	-1.105	-5.813	2.995	7.876
E14g	1.000	5.000	-1.121	-5.895	1.573	4.137
G16c	1.000	5.000	-1.130	-5.944	2.407	6.330
G16d	1.000	5.000	-0.982	-5.166	3.331	8.760
Multivariate					47.866	24.378

Source: Author's construction

5.4.3.1 Computation of Degrees of Freedom and Model Result of Value Co-creation

Analysing the hypothesised model, it is observed that the analysis was based on 36 sample moments, where 16 distinct parameters were estimated, resulting in 20 df (Table 44).

Table 44: Computation of Degrees of Freedom for Value Co-creation

Number of distinct sample moments:	36
Number of distinct parameters to be estimated:	16
df (36 - 16)	20

Source: Author's construction

The bottom-line results indicate that the minimum result was achieved in reaching a convergent solution, yielding a $\chi 2$ value of 73.981 with 20 df (Table 45).

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Table 45: Model Result of Value Co-creation

Result	Minimum was achieved
$\chi 2$	73.981
df	20
Probability level	0.000

Source: Author's construction

5.4.3.2 Maximum Likelihood Estimates (Value Co-creation)

In both Table 46 and Table 47, all the items under 'value co-creation' are significant ($p<0.05$).

Table 46: Regression Weights Value Co-creation

			Estimate	SE	CR	P
G16d	<---	F1	1.000			
G16c	<---	F1	0.847	0.393	2.158	0.031
E14g	<---	F1	2.866	0.795	3.603	***
E14f	<---	F1	2.760	0.742	3.721	***
E14d	<---	F1	3.176	0.853	3,725	***
E14c	<---	F1	3.205	0.850	3.770	***
E14b	<---	F1	3.059	0.811	3.773	***
E14a	<---	F1	2.752	0.743	3.703	***

Source: Author's construction

Table 47: Regression Variances Value Co-creation

	Estimate	SE	CR	P
F1	0.041	0.022	1.886	.059
eg16d	0.412	0.046	8.990	***
eg16c	0.648	0.072	9.041	***
ee14g	0.482	0.057	8.425	***
ee14f	0.221	0.029	7.739	***
ee14d	0.285	0.037	7.702	***
ee14c	0.179	0.026	6.826	***
ee14b	0.156	0.023	6.727	***
ee14a	0.255	0.032	7.924	***

Source: Author's construction

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5.4.3.3 Model Fit Indices (Value Co-creation)

A summary of the model fit indices of CFA is shown in Table 48.

Table 48: Value Co-creation Model Fit Indices

Indices	Recommended Value	Model Fit Indices
CMIN/df	< 3	3.699
p-value	≥ 0.05	0.000
GFI	≥ 0.95	0.900
AGFI	≥ 0.80	0.819
NFI	≥ 0.90	0.881
CFI	≥ 0.90	0.909
IFI	≥ 0.90	0.910
RMSEA	≤ 0.08	0.128

Source: Author's construction

5.4.4 Co-created Market Opportunities

The model is recursive with a sample size of 166. The assessment of normality for the co-created market opportunities factor, using the kurtosis measure, is 4.048 – substantially lower than the minimum required measure of 7. The CR, being the z-statistic, is 2.661 – substantially lower than the minimum required measure of 5 (Table 49).

Table 49: CFA Co-created Market Opportunity Normality Assessment

Variable	Min	Max	Skew	CR	Kurtosis	CR
D13e	1.000	5.000	-0.183	-.965	-0.789	-2.076
F15a	1.000	5.000	-0.346	-1.822	-0.517	-1.359
F15e	1.000	5.000	-0.601	-3.161	0.556	1.463
C12b	1.000	5.000	-0.579	-3.044	-0.229	-0.602
C12e	1.000	5.000	0.010	.053	-0.826	-2.172
D13d	2.000	5.000	0.280	1.473	-0.586	-1.541
Multivariate					4.048	2.661

Source: Author's construction

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5.4.4.1 Computation of Degrees of Freedom and Model Result of Co-created Market Opportunities

Analysing the hypothesised model, it is observed that the analysis was based on 21 sample moments, where 12 distinct parameters were estimated, resulting in 9 df (Table 50).

Table 50: Computation of Degrees of Freedom for Co-created Market Opportunities

Number of distinct sample moments:	21
Number of distinct parameters to be estimated:	12
df (21 - 12)	9

Source: Author's construction

The bottom-line results indicate that the minimum result was achieved in reaching a convergent solution, yielding a $\chi 2$ value of 8.957 with 9 df (Table 51).

Table 51: Model Result of Co-created Market Opportunities

Result	Minimum was achieved
$\chi 2$	8.957
df	9
Probability level	0.441

Source: Author's construction

5.4.4.2 Maximum Likelihood Estimates (Co-created Market Opportunities)

In both Table 52 and Table 53, all the items under 'co-created market opportunities' are significant ($p<0.05$).

Table 52: Regression Weights Co-Created Market Opportunities

			Estimate	SE	CR	P
F15e	<---	F4	0.501	0.219	2.293	0.022
F15a	<---	F4	1.081	0.303	3.561	***
D13e	<---	F4	1.343	0.374	3.593	***
C12b	<---	F4	0.604	0.265	2.280	0.023
C12e	<---	F4	1.224	0.359	3.412	***
D13d	<---	F4	1.000			

Source: Author's construction

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Table 53: Regression Variances Co-Created Market Opportunities

	Estimate	SE	CR	P
F4	0.194	0.077	2.519	0.012
ed13d	0.565	0.082	6.916	***
ec12e	1.078	0.146	7.392	***
ec12b	1.026	0.118	8.659	***
ef15e	0.696	0.080	8.653	***
ef15a	0.640	0.093	6.847	***
ed13e	0.914	0.137	6.661	***

Source: Author's construction

5.4.4.3 Model Fit Indices (Co-created Market Opportunities)

A summary of the model fit indices of CFA is shown in Table 54.

Table 54: Co-created Market Opportunities Model Fit Indices

Indices	Recommended Value	Model Fit Indices
CMIN/df	< 3	0.995
p-value	≥ 0.05	0.441
GFI	≥ 0.95	0.982
AGFI	≥ 0.80	0.959
NFI	≥ 0.90	0.876
CFI	≥ 0.90	1.000
IFI	≥ 0.90	1.001
RMSEA	≤ 0.08	0.000

Source: Author's construction

5.4.5 Co-created Growth Opportunities

There were six different measures at the firm-level to operationalise co-created growth opportunities. They were all at an ordinal-level at two points in time: 'currently' and 'two years ago'. These amounts were converted into a percentage growth figure to represent the growth in an amount for the co-created growth variable. These six variables are: growth in client base, growth in strategic partnerships, growth in net commissions, growth in assets under management, growth in sales reps and growth in back-office staff. The frequency statistics for these are shown in (Table 55).

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Table 55: Co-created Growth Opportunities Single Frequency Statistics

N	Growth in Client Base	Growth in Strategic Partnerships	Growth in Nett Commissions	Growth in Assets Under Management	Growth in Sales Reps	Growth in Back-office Staff
Valid	135	137	132	126	106	121
Missing	31	29	34	40	60	45

Source: Author's construction

For consistency purposes, the percentages that represented the co-created growth opportunities factor were converted to intervals which represented the data. Extreme outliers and missing data were removed to create a comparative table where the minimum completed number of items (121), found under 'growth in back-office staff', was used as the baseline. Frequencies for these variables are shown in Table 56.

Table 56: Co-created Growth Opportunities Single Frequency Statistics Combined into Intervals

N	Growth in Client Base	Growth in Strategy Partnerships	Growth in Net Commissions	Growth in Assets Under Management	Growth in Sales Reps	Growth in Back-office Staff
Valid	121	121	121	121	121	121
Missing	0	0	0	0	0	0

Source: Author's construction

5.5 PATH ANALYSIS

A complete path analysis was conducted using the four factors – effectual behaviours, effectual networks, value co-creation and co-created market opportunities – on each of the co-created growth variables – growth in client base, growth in strategic partnerships, growth in net commissions, growth in assets under management, growth in sales reps and growth in back-office staff. These are presented sequentially below.

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5.5.1 Growth in Client Base Model

The Growth in Client Base Model (Figure 4) represents all the hypothesised relationships and pathways that were analysed.

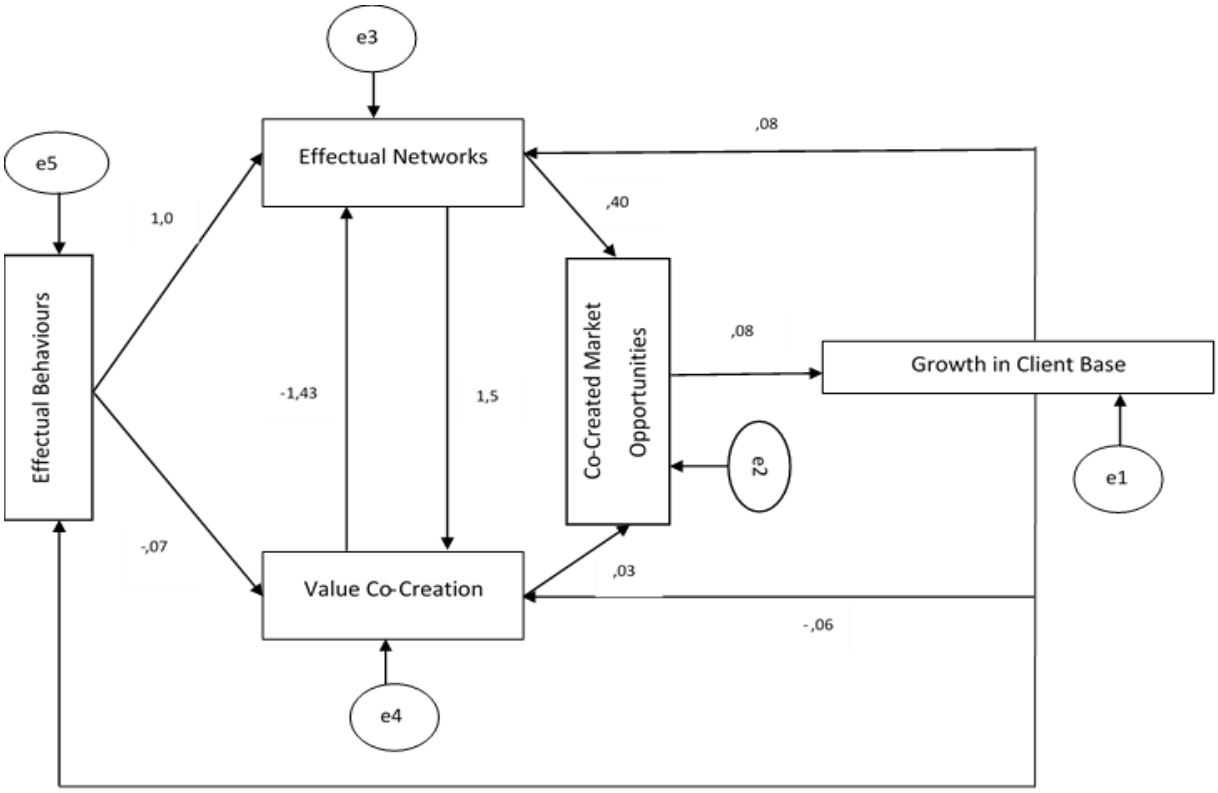

Figure 4: Growth in Client Base Model (Author's construction)

The model is non-recursive with a sample size of 121. The assessment of normality for the model, using the kurtosis measure, is 11,622 – substantially greater than the minimum required measure of 7. The CR, being the z-statistic, is 7,640 – substantially greater than the minimum required measure of 5 (Table 57).

Table 57: Growth in Client Base Model Normality Assessment

Variable	Min	Max	Skew	CR	Kurtosis	CR
Effectual Behaviours	3.000	5.000	0.330	1.481	0.104	0.233
Value Co-creation	1.125	5.000	-1.182	-5.309	4.233	9.505
Co-created Market Opportunities	1.833	5.000	0.230	1.034	1.399	3.142
Effectual Networks	1.857	5.000	-0.086	-0.385	1.711	3.841
Growth in Strategic Partnerships	1.000	5.000	0.010	0.043	-1.300	-2.920

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Multivariate	11.622	7.640

Source: Author's construction

5.5.1.1 Computation of Degrees of Freedom and Result of Growth in Client Base Model

Analysing the hypothesised model, we observe that the analysis was based on 15 sample moments, where 14 distinct parameters were estimated, resulting in 1 df (Table 58).

Table 58: Computation of Degrees of Freedom for Growth in Client Base Model

Number of distinct sample moments	15
Number of distinct parameters to be estimated	14
df (15 - 14)	1

Source: Author's construction

The bottom-line results indicate that the minimum result was achieved in reaching a convergent solution, yielding a $\chi 2$ value of 0.05 with 1 df (Table 59).

Table 59: Model Result of Growth in Client Base Model

Result	Minimum was achieved
$\chi 2$	0.05
df	1
Probability level	0.823

Source: Author's construction

5.5.1.2 Maximum Likelihood Estimates – Growth in Client Base Model

In both Table 60 and Table 61, the following statistical relationships are significant ($p<0.05$) in the Growth in Client Base Model - the following hypotheses cannot be rejected:

- Hypothesis 1: Professional financial planners create effectual networks to co-create market opportunities.
- Hypothesis 3: Professional financial planners use value co-creation as a means to create an effectual network.
- Hypothesis 4: Professional financial planners use effectual networks and value co-creation to co-create market opportunities.

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The following statistical relationships are insignificant ($p<0.05$) - the following hypotheses cannot be accepted:

- Hypothesis 2: Professional financial planners use value co-creation to co-create market opportunities.
- Hypothesis 5: Professional financial planners use co-created market opportunities to co-create growth opportunities.
- Hypothesis 6: Co-created growth opportunities mediate the relationship between co-created market opportunities and effectual behaviours.

Table 60: Regression Weights Growth in Client Base Model

			Estimate	SE	CR	P
Effectual Behaviours	←	Change in Client Base	0.004	0.027	0.151	0.880
Co-created Market Opportunities	←	Co-created Networks	0.401	0.103	3.878	***
Co-created Networks	←	Change in Client Base	0.078	0.072	1.080	0.280
Value Co-creation	←	Co-created Networks	1.543	0.290	5.328	***
Co-created Networks	←	Value Co-creation	-1.430	0.499	-2.867	0.004
Value Co-creation	←	Effectual Behaviours	-0.074	0.181	-0.408	0.683
Co-created Networks	←	Effectual Behaviours	1.000			
Co-created Market Opportunities	←	Value Co-creation	0.028	0.084	0.334	0.739
Value Co-creation	←	Change in Client Base	-0.062	0.049	-1.274	0.203
Change in Client Base	←	Co-created Market Opportunities	0.083	0.272	0.304	0.761

Source: Author's construction

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Table 61: Regression Variances Growth in Client Base Model

	Estimate	SE	CR	P
e1	1.966	0.255	7.713	***
e3	1.102	0.548	2.011	0.044
e2	0.226	0.029	7.746	***
e4	0.478	0.138	3.463	***
e5	0.176	0.023	7.746	***
e1	1.966	0.255	7.713	***
e3	1.102	0.548	2.011	0.044

Source: Author's construction

5.5.1.3 Model Fit Indices – Growth in Client Base Model

A summary of the model fit indices of the Growth in Client Base Model is shown in Table 62.

Table 62: Growth in Client Base Model Fit Indices

Indices	Recommended Value	Model Fit Indices
CMIN/df	< 3	0.05
p-value	≥ 0.05	0.823
GFI	≥ 0.95	1.000
AGFI	≥ 0.80	0.998
NFI	≥ 0.90	0.999
CFI	≥ 0.90	1.000
IFI	≥ 0.90	1.014
RMSEA	≤ 0.08	0.000

Source: Author's construction

5.5.2 Growth in Strategic Partnerships Model

The Growth in Strategic Partnerships Model (Figure 5) represents all the hypothesised relationships and pathways that were analysed.

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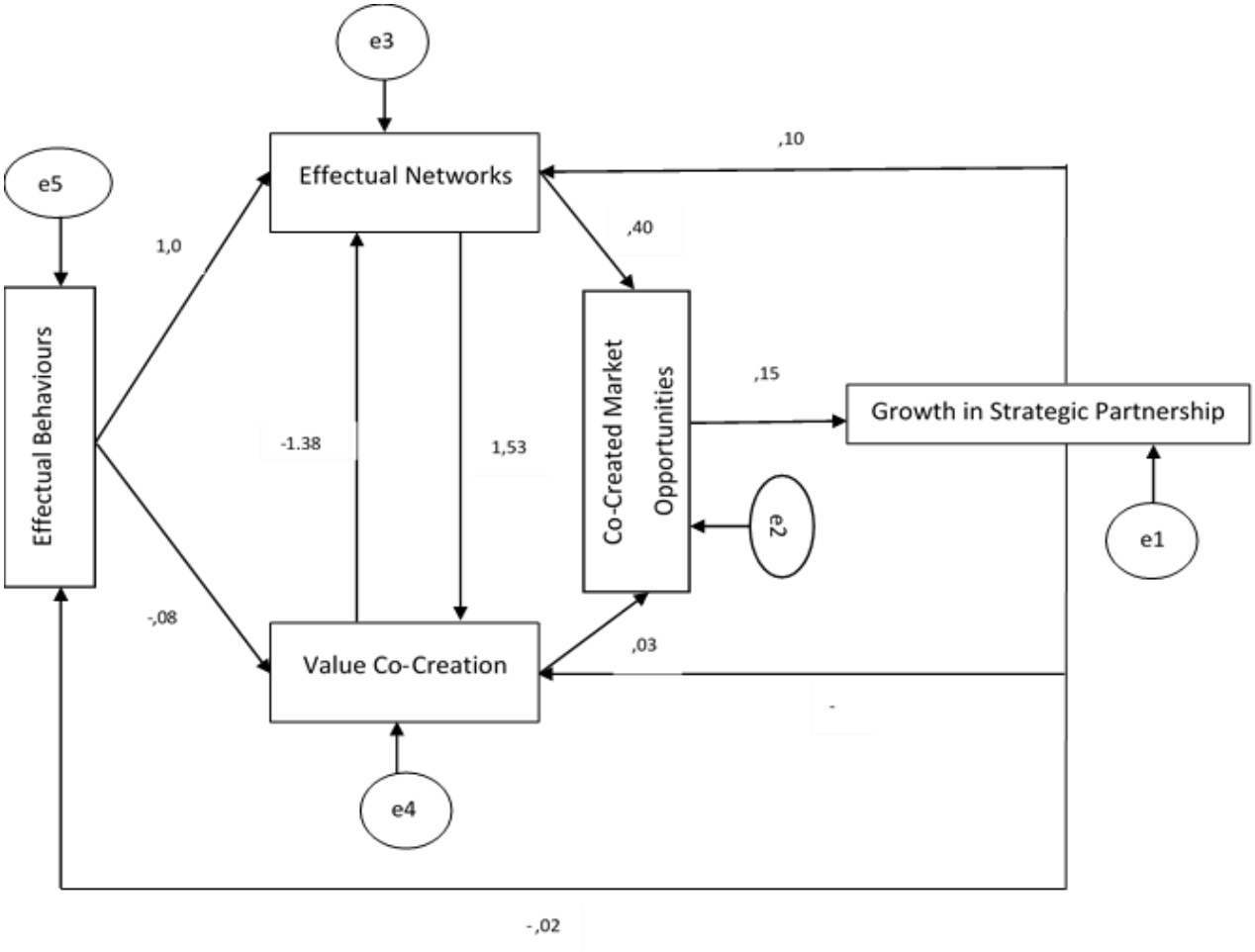

Figure 5: Growth in Strategic Partnerships Model (Author's construction)

The model is non-recursive with a sample size of 121. The assessment of normality for the model, using the kurtosis measure, is 13,653, – substantially greater than the minimum required measure of 7. The CR, being the z-statistic, is 8,975 – substantially greater than the minimum required measure of 5 (Table 63).

Table 63: Growth in Strategic Partnerships Model Normality Assessment

Variable	Min	Max	Skew	CR	Kurtosis	CR
Effectual Behaviours	3.000	5.000	0.330	1.481	0.104	0.233
Value Co-creation	1.125	5.000	-1.182	-5.309	4.233	9.505
Co-created Market Opportunities	1.833	5.000	0.230	1.034	1.399	3.142
Effectual Networks	1.857	5.000	-0.086	-0.385	1.711	3.841
Growth in Strategic Partnership	1.000	5.000	0.103	0.461	-1.272	-2.855
Multivariate					13.653	8.975

Source: Author's construction

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5.5.2.1 Computation of Degrees of Freedom and Result of Growth in Strategic Partnerships Model

Analysing the hypothesised model, it is observed that the analysis was based on 15 sample moments, where 14 distinct parameters were estimated, resulting in 1 df (Table 64).

Table 64: Computation of Degrees of Freedom for Growth in Strategic Partnerships Model

Number of distinct sample moments	15
Number of distinct parameters to be estimated	14
df (15 - 14)	1

Source: Author's construction

The bottom-line results indicate that the minimum result was achieved in reaching a convergent solution, yielding a $\chi 2$ value of 0.029 with 1 df (Table 65).

Table 65: Model Result of Growth in Strategic Partnerships Model

Result	Minimum was achieved
$\chi 2$	0.029
df	1
Probability level	0.866

Source: Author's construction

5.5.2.2 Maximum Likelihood Estimates – Growth in Strategic Partnerships Model

In both Table 66 and Table 67, the following statistical relationships are significant ($p<0.05$) within the Growth in Strategic Partnerships Model - the following hypotheses cannot be rejected:

- Hypothesis 1: Professional financial planners create effectual networks to co-create market opportunities.
- Hypothesis 3: Professional financial planners use value co-creation as a means to create an effectual network.
- Hypothesis 4: Professional financial planners use effectual networks and value co-creation to co-create market opportunities.

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The following statistical relationships are insignificant ($p<0.05$) - the following hypotheses cannot be accepted:

- Hypothesis 2: Professional financial planners use value co-creation to co-create market opportunities.
- Hypothesis 5: Professional financial planners use co-created market opportunities to co-create growth opportunities.
- Hypothesis 6: Co-created growth opportunities mediate the relationship between co-created market opportunities and effectual behaviours.

Table 66: Regression Weights Growth in Strategic Partnerships Model

			Estimate	SE	CR	P
Effectual Behaviours	←	Growth in Strategic Partnership	-0.020	0.030	-0.664	0.507
Co-created Market Opportunities	←	Co-created Networks	0.397	0.103	3.846	***
Co-created Networks	←	Growth in Strategic Partnership	0.103	0.076	1.361	0.173
Value Co-creation	←	Co-created Networks	1.529	0.289	5.288	***
Co-created Networks	←	Value Co-creation	-1.377	0.477	-2.884	0.004
Value Co-creation	←	Effectual Behaviours	-0.084	0.182	-0.463	0.643
Co-created Networks	←	Effectual Behaviours	1.000			

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Co-created Market Opportunities	←	Value Co-creation	0.029	0.084	0.339	0.734
Value Co-creation	←	Growth in Strategic Partnership	-0.064	0.053	-1.199	0.231
Growth in Strategic Partnership	←	Co-created Market Opportunities	0.148	0.248	0.596	0.551

Source: Author's construction

Table 67: Regression Variances Growth in Strategic Partnerships Model

	Estimate	SE	CR	P
e1	1.658	0.215	7.718	***
e3	1.038	0.506	2.051	0.040
e2	0.226	0.029	7.745	***
e4	0.472	0.135	3.484	***
e5	0.175	0.023	7.746	***

Source: Author's construction

5.5.2.3 Model Fit Indices – Growth in Strategic Partnerships Model

A summary of the model fit indices of Growth in Client Base Model is shown in Table 68.

Table 68: Growth in Strategic Partnership Model Fit Indices

Indices	Recommended Value	Model Fit Indices
CMIN/df	< 3	0.029
p-value	≥ 0.05	0.866
GFI	≥ 0.95	1.000
AGFI	≥ 0.80	0.999
NFI	≥ 0.90	1.000
CFI	≥ 0.90	1.000
IFI	≥ 0.90	1.014
RMSEA	≤ 0.08	0.000

Source: Author's construction

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5.5.3 Growth in Net Commission Model

The Growth in Net Commission Model (Figure 6) represents all the hypothesised relationships and pathways that were analysed.

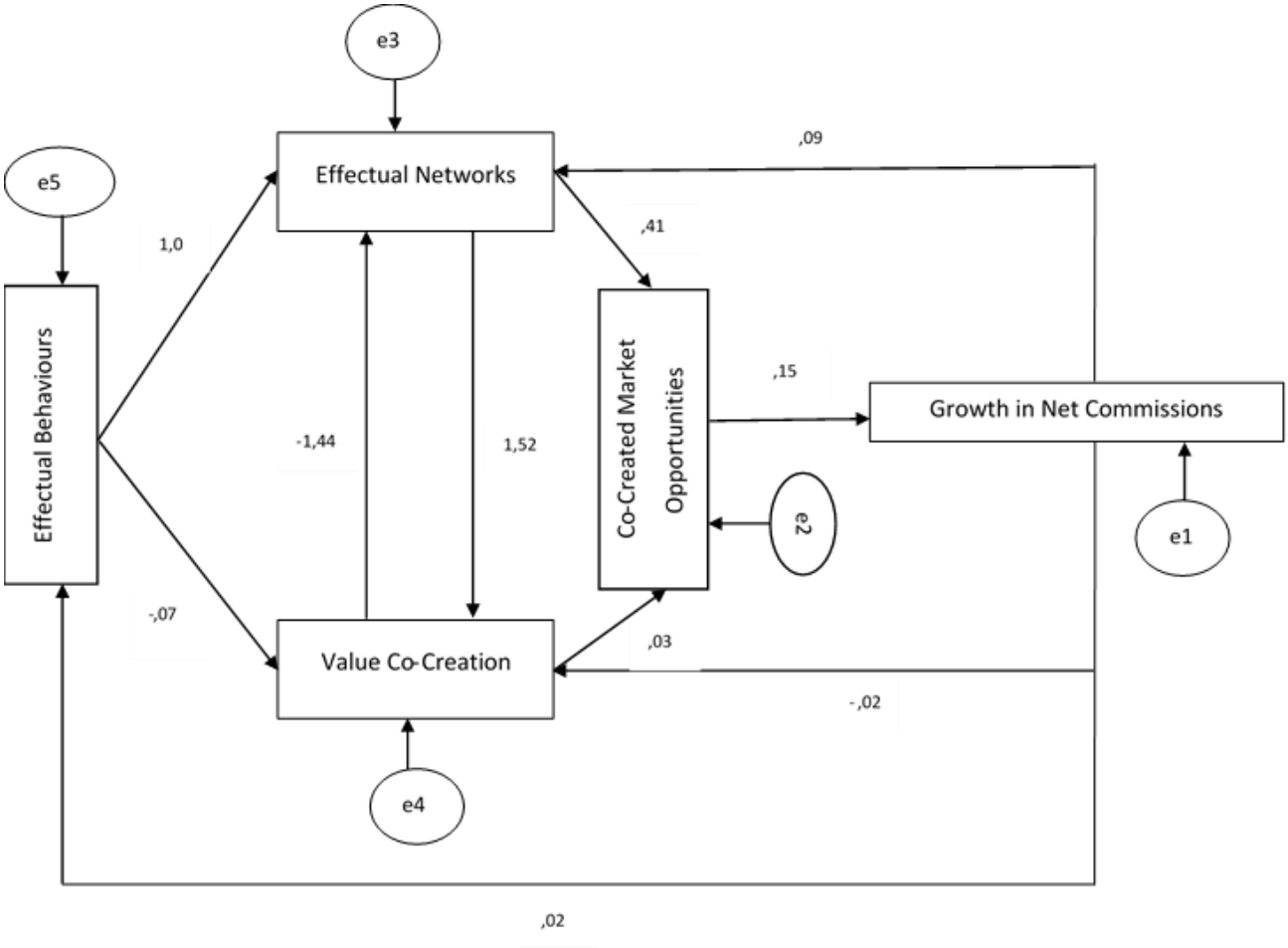

Figure 6: Growth in Net Commission Model (Author's construction)

The model is non-recursive with a sample size of 121. The assessment of normality for the model, using the kurtosis measure, is 11.823 – substantially greater than the minimum required measure of 7. The CR, being the z-statistic is 7.772 – substantially greater than the minimum required measure of 5 (Table 69).

Table 69: Growth in Net Commission Model Normality Assessment

Variable	Min	Max	Skew	CR	Kurtosis	CR
Effectual Behaviours	3.000	5.000	0.330	1.481	0.104	0.233
Value Co-creation	1.125	5.000	-1.182	-5.309	4.233	9.505
Co-created Market Opportunities	1.833	5.000	0.230	1.034	1.399	3.142

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Effectual Networks	1.857	5.000	-0.086	-0.385	1.711	3.841
Growth in Strategic Partnership	1.000	5.000	0.033	0.146	-1.237	-2.778
Multivariate					11.823	7.772

Source: Author's construction

5.5.3.1 Computation of Degrees of Freedom and Result of Net Commission Model

Analysing the hypothesised model, it is observed that the analysis was based on 15 sample moments, where 14 distinct parameters were estimated, resulting in 1 df (Table 70).

Table 70: Computation of Degrees of Freedom for Growth in Net Commission Model

Number of distinct sample moments:	15
Number of distinct parameters to be estimated:	14
df (15 - 14):	1

Source: Author's construction

The bottom-line results indicate that the minimum result was achieved in reaching a convergent solution, yielding a $\chi 2$ value of 0.052 with 1 df (Table 71).

Table 71: Model Result of Growth in Net Commission Model

Result	Minimum was achieved
$\chi 2$	0.052
df	1
Probability level	0.819

Source: Author's construction

5.5.3.2 Maximum Likelihood Estimates – Growth in Net Commission Model

In both Table 72 and Table 73, the following statistical relationships are significant ($p<0.05$) within the Growth in Net Commission Model - following hypotheses cannot be rejected:

- Hypothesis 1: Professional financial planners create effectual networks to co-create market opportunities.
- Hypothesis 3: Professional financial planners use value co-creation as a means to create an effectual network.

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- Hypothesis 4: Professional financial planners use effectual networks and value co-creation to co-create market opportunities.

The following statistical relationships are insignificant ($p<0.05$) - the following hypotheses cannot be accepted:

- Hypothesis 2: Professional financial planners use value co-creation to co-create market opportunities.
- Hypothesis 5: Professional financial planners use co-created market opportunities to co-create growth opportunities.
- Hypothesis 6: Co-created growth opportunities mediate the relationship between co-created market opportunities and effectual behaviours.

Table 72: Regression Weights Growth in Net Commission Model

			Estimate	SE	CR	P
Effectual Behaviours	←	Growth in Net Commission	0.018	0.029	0.611	0.541
Co-created Market Opportunities	←	Co-created Networks	0.412	0.103	3.996	***
Co-created Networks	←	Growth in Net Commission	0.094	0.079	1.195	0.232
Value Co-creation	←	Co-created Networks	1.524	0.288	5.285	***
Co-created Networks	←	Value Co-creation	-1.444	0.508	-2.845	0.004
Value Co-creation	←	Effectual Behaviours	-0.069	0.180	-0.381	0.703
Co-created Networks	←	Effectual Behaviours	1.000			
Co-created Market Opportunities	←	Value Co-creation	0.030	0.084	0.360	0.719
Value Co-creation	←	Growth in Net Commission	-0.025	0.050	-0.500	0.617
Growth in Net Commission	←	Co-created Market Opportunities	-0.186	0.263	-0.706	0.480

Source: Author's construction

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Table 73: Regression Variances Growth in Net Commission Model

	Estimate	SE	CR	P
e1	1.658	0.215	7.718	***
e3	1.038	0.506	2.051	0.040
e2	0.226	0.029	7.745	***
e4	0.472	0.135	3.484	***
e5	0.175	0.023	7.746	***

Source: Author's construction

5.5.3.3 Model Fit Indices – Growth in Net Commission Model

A summary of the model fit indices of Growth in Net Commission Model is shown in Table 74.

Table 74: Growth in Net Commission Model Fit Indices

Indices	Recommended Value	Model Fit Indices
CMIN/df	< 3	0.052
p-value	≥ 0.05	0.819
GFI	≥ 0.95	1.000
AGFI	≥ 0.80	0.997
NFI	≥ 0.90	0.999
CFI	≥ 0.90	1.000
IFI	≥ 0.90	1.014
RMSEA	≤ 0.08	0.000

Source: Author's construction

5.5.4 Growth in Assets Under Management Model

The Growth in Assets Under Management Model (Figure 7) represents all the hypothesised relationships and pathways that were analysed.

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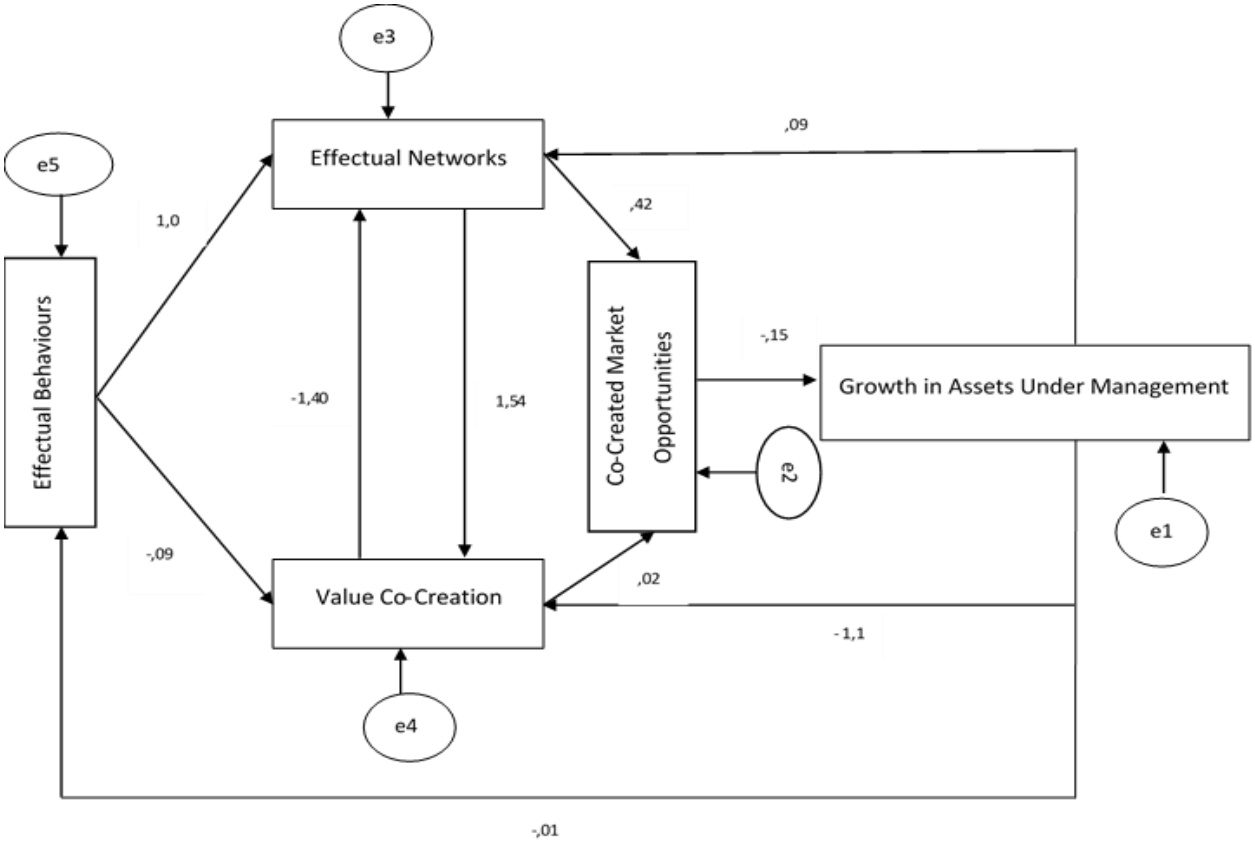

Figure 7: Growth in Assets Under Management Model (Author's construction)

The model is non-recursive with a sample size of 121. The assessment of normality for the model, using the kurtosis measure is, 11,539 – substantially greater than the minimum required measure of 7. The CR, being the z-statistic, is 7,586 – substantially greater than the minimum required measure of 5 (Table 75).

Table 75: Growth in Assets Under Management Model Normality Assessment

Variable	Min	Max	Skew	CR	Kurtosis	CR
Effectual Behaviours	3.000	5.000	0.330	1.481	0.104	0.233
Value Co-creation	1.125	5.000	-1.182	-5.309	4.233	9.505
Co-created Market Opportunities	1.833	5.000	0.230	1.034	1.399	3.142
Effectual Networks	1.857	5.000	-0.086	-0.385	1.711	3.841
Growth in Strategic Partnership	1.000	5.000	0.024	0.109	-1.244	-2.793
Multivariate					11.539	7.586

Source: Author's construction

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5.5.4.1 Computation of Degrees of Freedom and Result of Growth in Assets Under Management Model

Analysing the hypothesised model, it is observed that the analysis was based on 15 sample moments, where 14 distinct parameters were estimated, resulting in 1 df (Table 76).

Table 76: Computation of Degrees of Freedom for Growth in Assets Under Management Model

Number of distinct sample moments:	15
Number of distinct parameters to be estimated:	14
df (15 - 14):	1

Source: Author's construction

The bottom-line results indicate that the minimum result was achieved in reaching a convergent solution, yielding a $\chi 2$ value of 0.007 with 1 df (Table 77).

Table 77: Model Result of Growth in Assets Under Management Model

Result	Minimum was achieved
$\chi 2$	0.007
df	1
Probability level	0.931

Source: Author's construction

5.5.4.2 Maximum Likelihood Estimates – Growth in Assets Under Management Model

In both Table 78 and Table 79, the following statistical relationships are significant ($p<0.05$) within the Growth in Assets Under Management Model - the following hypotheses cannot be rejected:

- Hypothesis 1: Professional financial planners create effectual networks to co-create market opportunities.
- Hypothesis 3: Professional financial planners use value co-creation as a means to create an effectual network.

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- Hypothesis 4: Professional financial planners use effectual networks and value co-creation to co-create market opportunities.

The following statistical relationships are insignificant ($p<0.05$) - the following hypotheses cannot be accepted:

- Hypothesis 2: Professional financial planners use value co-creation to co-create market opportunities.
- Hypothesis 5: Professional financial planners use co-created market opportunities to co-create growth opportunities.
- Hypothesis 6: Co-created growth opportunities mediate the relationship between co-created market opportunities and effectual behaviours.

Table 78: Regression Weights Growth in Assets Under Management Model

			Estimate	SE	CR	P
Effectual Behaviours	←	Growth in Assets Under Management	-0.008	0.029	-0.271	0.786
Co-created Market Opportunities	←	Co-created Networks	0.420	0.106	3.961	***
Co-created Networks	←	Growth in Assets Under Management	0.087	0.074	1.179	0.239
Value Co-creation	←	Co-created Networks	1.542	0.284	5.421	***
Co-created Networks	←	Value Co-creation	-1.402	0.492	-2.851	0.004
Value Co-creation	←	Effectual Behaviours	-0.089	0.180	-0.493	0.622
Co-created Networks	←	Effectual Behaviours	1.000			
Co-created Market Opportunities	←	Value Co-creation	0.022	0.085	0.262	0.793
Value Co-creation	←	Growth in Assets Under Management	-0.115	0.052	-2.193	0.028
Growth in Assets Under Management	←	Co-created Market Opportunities	-0.152	0.271	-0.560	0.575

Source: Author's construction

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Table 79: Regression Variances Growth in Assets Under Management Model

	Estimate	SE	CR	P
e1	1.849	0.241	7.678	***
e3	1.077	0.535	2.014	0.044
e2	0.226	0.029	7.745	***
e4	0.464	0.132	3.529	***
e5	0.176	0.023	7.746	***

Source: Author's construction

5.5.4.3 Model Fit Indices – Growth in Assets Under Management Model

A summary of the model fit indices of Growth in Assets Under Management Model is shown in Table 80.

Table 80: Growth in Assets Under Management Fit Indices

Indices	Recommended Value	Model Fit Indices
CMIN/df	< 3	0.007
p-value	≥ 0.05	0.931
GFI	≥ 0.95	1.000
AGFI	≥ 0.80	1.000
NFI	≥ 0.90	1.000
CFI	≥ 0.90	1.000
IFI	≥ 0.90	1.008
RMSEA	≤ 0.08	0.000

Source: Author's construction

5.5.5 Growth in Sales Reps Model

The Growth Sales Reps Model (Figure 8) represents all the relationships and pathways that were analysed.

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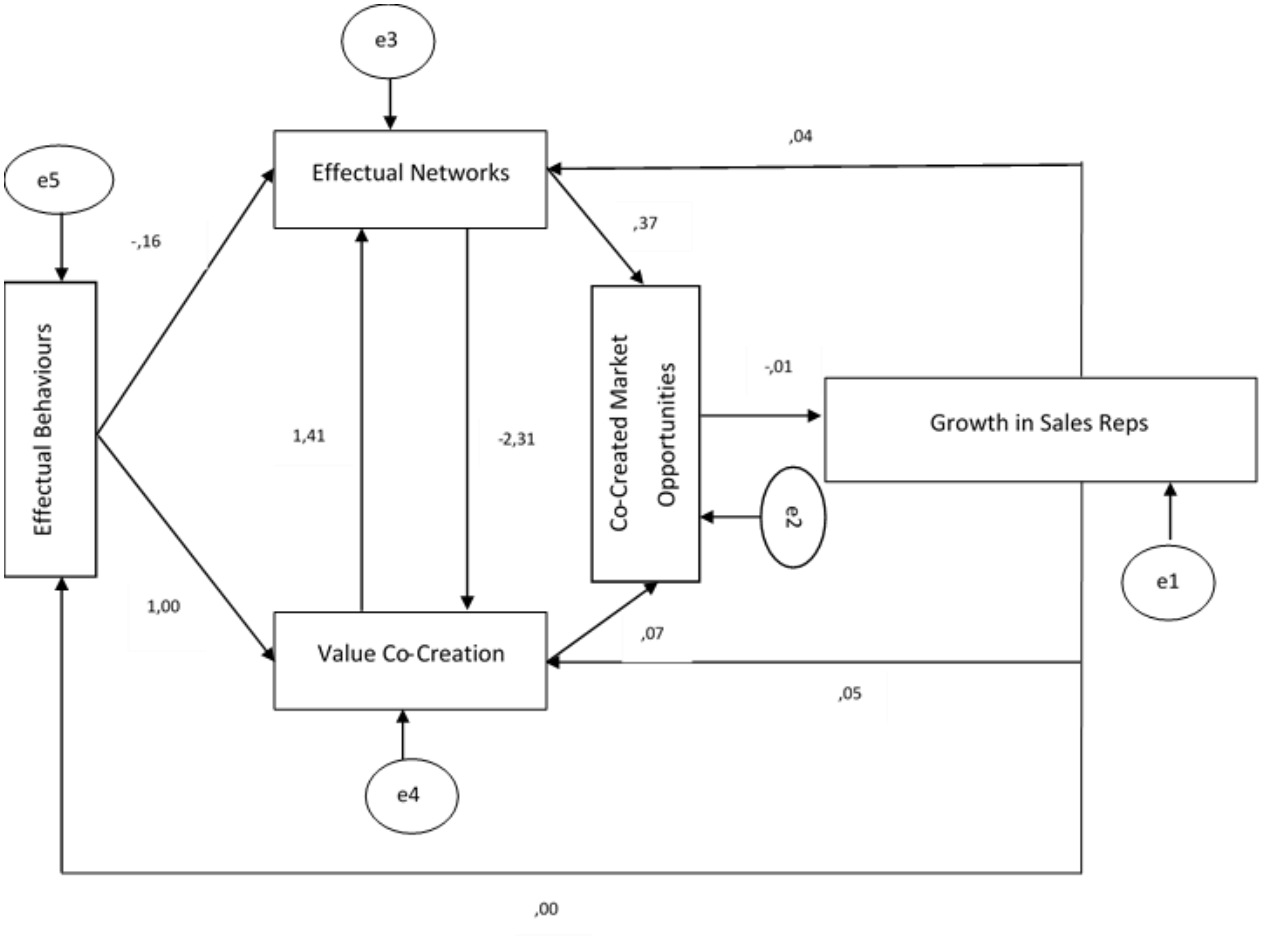

Figure 8: Growth in Sales Reps (Author's construction)

The model is non-recursive with a sample size of 121. The assessment of normality for the model, using the kurtosis measure, is 17,892 – substantially greater than the minimum required measure of 7. The CR, being the z-statistic, is 11,762 – substantially greater than the minimum required measure of 5 (Table 81).

Table 81: Growth in Sales Rep Model Normality Assessment

Variable	Min	Max	Skew	CR	Kurtosis	CR
Effectual Behaviours	3.000	5.000	0.330	1.481	0.104	0.233
Value Co-creation	1.125	5.000	-1.182	-5.309	4.233	9.505
Co-created Market Opportunities	1.833	5.000	0.230	1.034	1.399	3.142
Effectual Networks	1.857	5.000	-0.086	-0.385	1.711	3.841
Growth in Strategic Partnership	1.000	5.000	-2.379	-10.681	7.662	17.203
Multivariate					17.892	11.762

Source: Author's construction

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5.5.5.1 Computation of Degrees of Freedom and Result of Growth Sales Rep Model

Analysing the hypothesised model, it is observed that the analysis was based on 15 sample moments, where 14 distinct parameters were estimated, resulting in 1 df (Table 82).

Table 82: Computation of Degrees of Freedom for Growth in Sales Rep Model

Number of distinct sample moments:	15
Number of distinct parameters to be estimated:	14
df (15 - 14):	1

Source: Author's construction

The bottom-line results indicate that the minimum result was achieved in reaching a convergent solution, yielding a $\chi 2$ value of 0.009 with 1 df (Table 83).

Table 83: Model Result of Growth in Sales Rep Model

Result	Minimum was achieved
$\chi 2$	0.009
df	1
Probability level	0.924

Source: Author's construction

5.5.5.2 Maximum Likelihood Estimates – Growth in Sales Rep Model

In both Table 84 and Table 85, the following statistical relationships are significant ($p<0.05$) within the Growth in Sales Rep Model - the following hypotheses cannot be rejected:

- Hypothesis 1: Professional financial planners create effectual networks to co-create market opportunities.
- Hypothesis 3: Professional financial planners use value co-creation as a means to create an effectual network.
- Hypothesis 4: Professional financial planners use effectual networks and value co-creation to co-create market opportunities.

The following statistical relationships are insignificant ($p<0.05$) - the following hypotheses cannot be accepted:

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- Hypothesis 2: Professional financial planners use value co-creation to co-create market opportunities.
- Hypothesis 5: Professional financial planners use co-created market opportunities to co-create growth opportunities.
- Hypothesis 6: Co-created growth opportunities mediate the relationship between co-created market opportunities and effectual behaviours.

Table 84: Regression Weights Growth in Sales Rep Model

			Estimate	SE	CR	P
Effectual Behaviours	←	Growth in Sales Reps	-0.004	0.038	-0.108	0.914
Co-created Market Opportunities	←	Co-created Networks	0.366	0.078	4.672	***
Co-created Networks	←	Growth in Sales Reps	0.045	0.049	0.906	0.365
Value Co-creation	←	Co-created Networks	-2.310	0.762	-3.034	0.002
Co-created Networks	←	Value Co-creation	1.141	0.176	6.488	***
Value Co-creation	←	Effectual Behaviours	1.000			
Co-created Networks	←	Effectual Behaviours	-0.163	0.110	-1.479	0.139
Co-created Market Opportunities	←	Value Co-creation	0.065	0.067	0.977	0.328
Value Co-creation	←	Growth in Sales Reps	0.055	0.124	0.440	0.660
Growth Sales Reps	←	Co-created Market Opportunities	-0.013	0.116	-0.110	0.913

Source: Author's construction

Table 85: Regression Variances Growth in Sales Rep Model

	Estimate	SE	CR	P
e1	0.607	0.059	10.341	***
e3	0.313	0.076	4.107	***
e2	0.211	0.020	10.344	***
e4	1.703	0.830	2.051	0.040
e5	0.190	0.018	10.344	***

Source: Author's construction

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5.5.5.3 Model Fit Indices – Growth in Sales Rep Model

A summary of the model fit indices of Growth in Sales Rep Model is shown in Table 86.

Table 86: Growth in Sales Rep Model Fit Indices

Indices	Recommended Value	Model Fit Indices
CMIN/df	< 3	0.009
p-value	≥ 0.05	0.924
GFI	≥ 0.95	1.000
AGFI	≥ 0.80	1.000
NFI	≥ 0.90	1.000
CFI	≥ 0.90	1.000
IFI	≥ 0.90	1.009
RMSEA	≤ 0.08	0.000

Source: Author's construction

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5.5.6 Growth in Back-office Staff Model

The Growth Back-office Staff Model (Figure 9) represents all the relationships and pathways that were analysed.

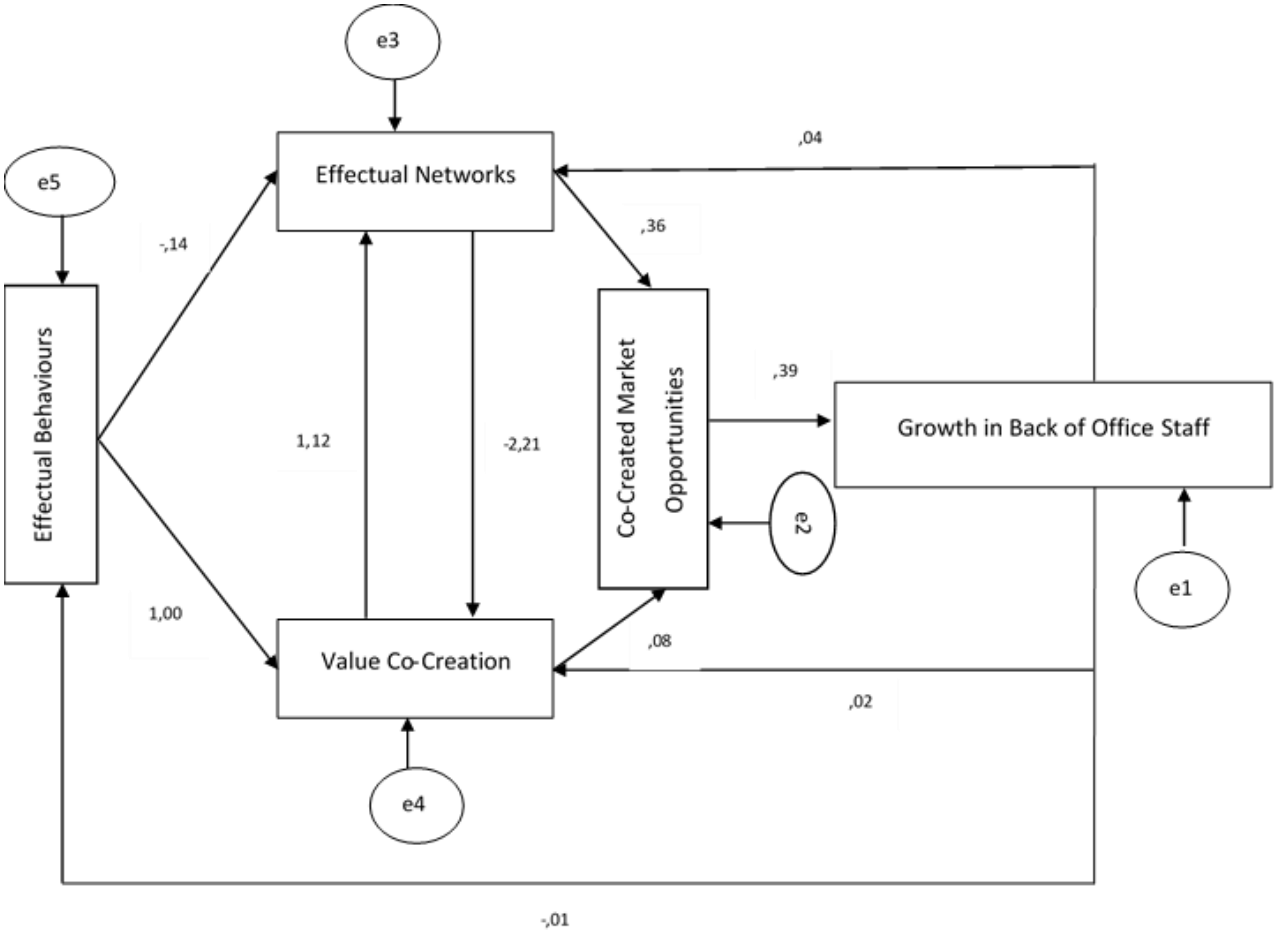

Figure 9: Growth in Back-office Staff Model (Author's construction)

The model is non-recursive with a sample size of 121. The assessment of normality for the model, using the kurtosis measure is 11.375 – substantially greater than the minimum required measure of 7. The CR, being the z-statistic, is 9.968 – substantially greater than the minimum required measure of 5 (Table 87).

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Table 87: Growth in Back-office Staff Model Normality Assessment

Variable	Min	Max	Skew	CR	Kurtosis	CR
Effectual Behaviours	2.167	5.000	-0.108	-0.648	0.659	1.972
Value Co-creation	1.125	5.000	-0.895	-5.357	3.605	10.790
Co-created Market Opportunities	1.833	5.000	-0.120	-0.719	1.088	3.256
Effectual Networks	1.857	5.000	-0.240	-1.438	1.355	4.056
Growth in Back-office Staff	1.000	5.000	-0.372	-2.227	-0.321	-0.961
Multivariate					11.375	9.968

Source: Author's construction

5.5.6.1 Computation of Degrees of Freedom and Result of Growth Back-office Staff Model

Analysing the hypothesised model, it is observed that the analysis was based on 15 sample moments, where 14 distinct parameters were estimated, resulting in 1 df (Table 88).

Table 88: Computation of Degrees of Freedom for Growth in Back-office Staff Model

Number of distinct sample moments:	15
Number of distinct parameters to be estimated:	14
df (15 - 14):	1

Source: Author's construction

The bottom-line results indicate that the minimum result was achieved in reaching a convergent solution, yielding a $\chi 2$ value of 0.035 with 1 df (Table 89).

Table 89: Model Result of Growth in Back-office Staff Model

Result	Minimum was achieved
$\chi 2$	0.035
df	1
Probability level	0.853

Source: Author's construction

5.5.6.2 Maximum Likelihood Estimates – Growth in Back-office Staff Model

In both Table 90 and Table 91, the following statistical relationships are significant ($p<0.05$) within the Growth in Back-office Staff Model - the following hypotheses cannot be rejected:

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- Hypothesis 1: Professional financial planners create effectual networks to co-create market opportunities.
- Hypothesis 3: Professional financial planners use value co-creation as a means to create an effectual network.
- Hypothesis 4: Professional financial planners use effectual networks and value co-creation to co-create market opportunities.
- Hypothesis 5: Professional financial planners use co-created market opportunities to co-create growth opportunities.
- Hypothesis 6: Co-created growth opportunities mediate the relationship between co-created market opportunities and effectual behaviours.

The following statistical relationships are insignificant ($p<0.05$) - the following hypotheses cannot be accepted:

- Hypothesis 2: Professional financial planners use value co-creation to co-create market opportunities.

Table 90: Regression Weights Growth in Back-office Staff Model

			Estimate	SE	CR	P
Effectual Behaviours	←	Growth in Back-office Staff	-0.050	0.027	-1.872	0.061
Co-created Market Opportunities	←	Co-created Networks	0.357	0.079	4.503	***
Co-created Networks	←	Growth in Back-office Staff	0.037	0.034	1.070	0.285
Value Co-creation	←	Co-created Networks	-2.209	0.711	-3.107	0.002
Co-created Networks	←	Value Co-creation	1.116	0.170	6.574	***
Value Co-creation	←	Effectual Behaviours	1.000			
Co-created Networks	←	Effectual Behaviours	-0.142	0.108	-1.316	0.188
Co-created Market Opportunities	←	Value Co-creation	0.080	0.068	1.176	0.239

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Value Co-creation	←	Growth in Back-office Staff	0.019	0.084	0.223	0.823
Growth Back-office Staff	←	Co-created Market Opportunities	0.393	0.165	2.377	0.017

Source: Author's construction

Table 91: Regression Variances Growth in Back-office Staff Model

	Estimate	SE	CR	P
e1	1.224	0.118	10.344	***
e3	0.302	0.072	4.218	***
e2	0.211	0.020	10.342	***
e4	1.594	0.746	2.137	0.033
e5	0.188	0.018	10.340	***

Source: Author's construction

5.5.6.3 Model Fit Indices – Growth in Back-office Staff Model

A summary of the model fit indices of Growth in Back-office Staff Model is shown in Table 92.

Table 92: Growth in Back-office Staff Model Fit Indices

Indices	Recommended Value	Model Fit Indices
CMIN/df	< 3	0.035
p-value	≥ 0.05	0.853
GFI	≥ 0.95	1.000
AGFI	≥ 0.80	0.999
NFI	≥ 0.90	1.000
CFI	≥ 0.90	1.000
IFI	≥ 0.90	1.008
RMSEA	≤ 0.08	0.000

Source: Author's construction

5.5.7 Empirical Effectual Growth Model

The Effectual Growth Model (Figure 10) represents all the relationships and pathways that were analysed.

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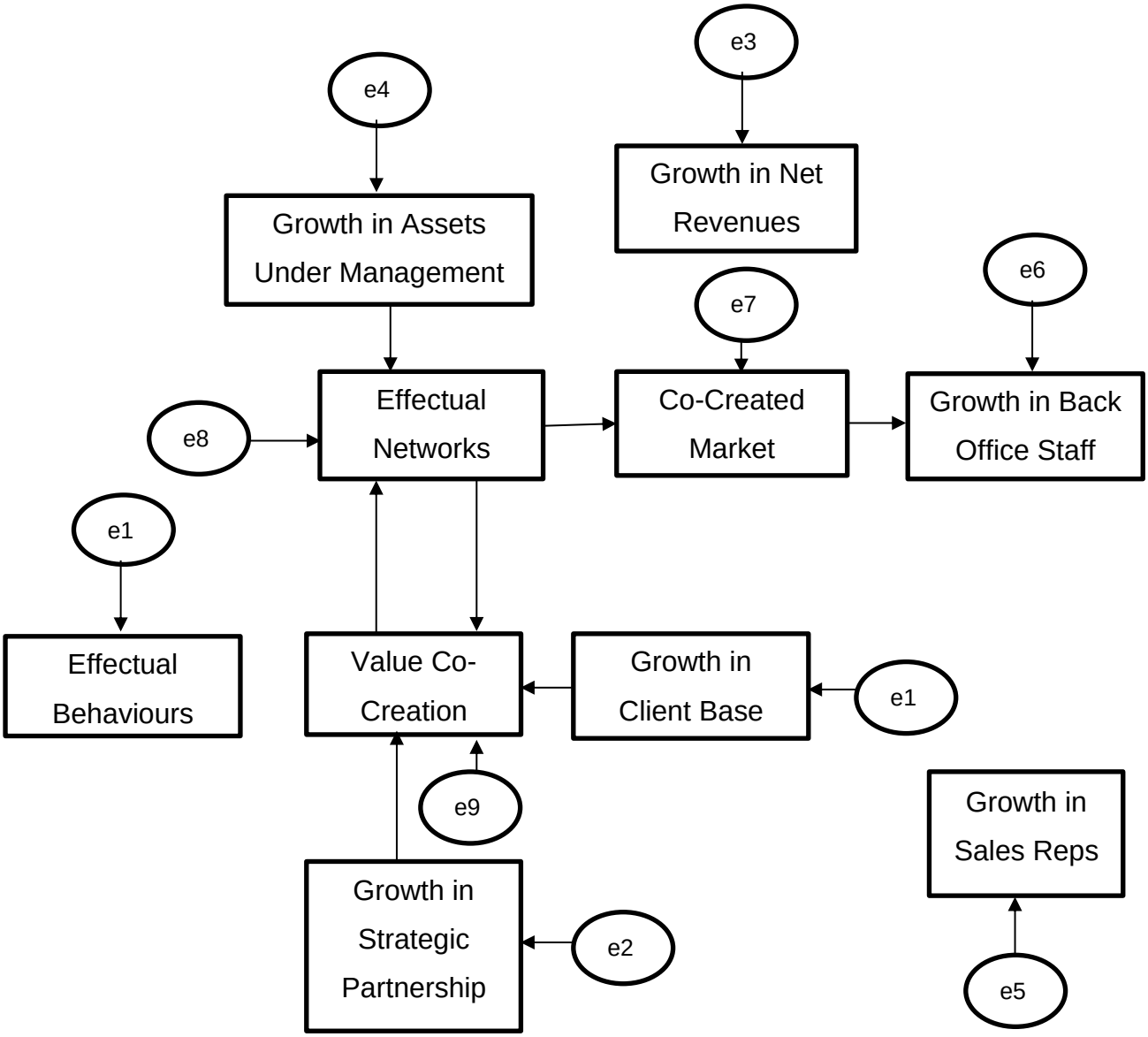

Figure 10: Empirical Effectual Growth Model (Author's construction)

The model is non-recursive with a sample size of 215. The assessment of normality for the model using the kurtosis measure is 20.552 – substantially greater than the minimum required measure of 7. The CR, being the z-statistic is 9.726 – substantially greater than the minimum required measure of 5 (Table 93).

Table 93: Empirical Effectual Growth Model Normality Assessment

Variable	Min	Max	Skew	CR	Kurtosis	CR
Growth in Assets Under Management	1.000	5.000	-0.009	-0.055	-1.292	-3.866
Growth in Client Base	1.000	5.000	-0.111	-0.667	-1.204	-3.602

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Effectual Behaviours	2.167	5.000	-0.108	-0.648	0.659	1.972
Growth in Strategic Partnerships	1.000	5.000	-0.017	-0.103	-1.246	-3.730
Value Co-creation	1.125	5.000	-0.895	-5.357	3.605	10.790
Effectual Networks	1.857	5.000	-0.240	-1.438	1.355	4.056
Co-created Market Opportunities	1.833	5.000	-0.120	-0.719	1.088	3.256
Growth in Back-office Staff	1.000	5.000	-0.372	-2.227	-0.321	-0.961
Growth in Sales Reps	1.000	5.000	-2.451	-14.674	8.372	25.058
Growth in Net Commissions	1.000	5.000	0.021	0.126	-1.215	-3.636
Multivariate					20.552	9.726

Source: Author's construction

5.5.7.1 Computation of Degrees of Freedom and Result of Empirical Effectual Growth Model

Analysing the hypothesised model, it is observed that the analysis was based on 55 sample moments, where 18 distinct parameters were estimated, resulting in 37 df.

Table 94: Computation of Degrees of Freedom for Empirical Effectual Growth Model

Number of distinct sample moments:	55
Number of distinct parameters to be estimated:	18
df (55 - 18):	37

Source: Author's construction

The bottom-line results indicate that the minimum result was achieved in reaching a convergent solution, yielding a $\chi 2$ value of 210.588 with 37 df (Table 95).

Table 95: Model Result of Growth in Empirical Effectual Growth Model

Result	Minimum was achieved
$\chi 2$	210.588
df	37
Probability level	0.000

Source: Author's construction

5.5.7.2 Maximum Likelihood Estimates – Empirical Effectual Growth Model

In both Table 96 and Table 97, the following statistical relationships are significant ($p<0.05$) within the Empirical Effectual Growth Model - the following hypotheses cannot be rejected:

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- Hypothesis 1: Professional financial planners create effectual networks to co-create market opportunities.
- Hypothesis 3: Professional financial planners use value co-creation as a means to create an effectual network.
- Hypothesis 4: Professional financial planners use effectual networks and value co-creation to co-create market opportunities.
- Hypothesis 5: Professional financial planners use co-created market opportunities to co-create growth opportunities.

Even though not hypothesised the following relationships were statistically significant ($p<0.05$)

- Professional financial planners use growth in assets under management to co-create networks.
- Professional financial planners use growth in strategic partnerships to value co-create.
- Professional financial planners use growth in client base to value co-create.
- Professional financial planners use growth in assets under management to growth their net commission.

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Table 96: Regression Weights Empirical Effectual Growth Model

			Estimate	SE	CR	P
Value Co-creation	←	Effectual Behaviours	1.000			
Co-created Networks	←	Growth in Assets Under Management	0.051	0.025	2.053	0.040
Value Co-creation	←	Growth in Strategic Partnerships	0.129	0.058	2.223	0.026
Value Co-creation	←	Growth in Client Base	0.132	0.056	2.378	0.017
Co-created Market Opportunities	←	Co-created Networks	0.401	0.069	5.777	***
Growth in Back-office Staff	←	Co-created Market Opportunities	0.383	0.153	2.510	0.012
Growth in Net Commission	←	Growth in Assets Under Management	0.586	0.051	11.560	***
Value Co-creation	←	Co-created Networks	-1.784	0.411	-4.339	***
Co-created Networks	←	Value Co-creation	0.966	0.109	8,832	***

Source: Author's construction

Table 97: Regression Variances Empirical Effectual Growth Model

	Estimate	SE	CR	P
e2	1.720	0.166	10.344	***
e10	0.190	0.018	10.344	***
e1	1.909	0.185	10.344	***
e4	1.939	0.187	10.344	***
e8	0.249	0.043	5.784	***
e9	1.112	0.342	3.254	0.001
e7	0.212	0.021	10.344	***
e3	1.068	0.103	10.344	***
e5	0.607	0.059	10.344	***
e6	1.224	0.118	10.344	***

Source: Author's construction

5.5.7.3 Model Fit Indices – Empirical Effectual Growth Model

A summary of the model fit indices of the Empirical Effectual Growth Model is shown in Table 98.

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Table 98: Empirical Effectual Growth Model Fit Indices

Indices	Recommended Value	Model Fit Indices
CMIN/df	< 3	5.692
p-value	≥ 0.05	0.000
GFI	≥ 0.95	0.811
AGFI	≥ 0.80	0.720
NFI	≥ 0.90	0.528
CFI	≥ 0.90	0.567
IFI	≥ 0.90	0.567
RMSEA	≤ 0.08	0.148

Source: Author's construction

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6 RESULTS DISCUSSION AND LIMITATIONS OF THE STUDY

6.1 INTRODUCTION

After describing the data analysis, this study now discusses the study results and limitations. The objective of this section is to clearly articulate the contributions of this study to the body of knowledge (Perry, 1998). The chapter is structured around the conclusions that can be drawn from the findings (Chapter 5) as per the study's hypotheses and limitations. Finally, it presents an empirical model of effectual growth opportunities that both practitioners and academics can use.

6.2 ANALYSIS OF DESCRIPTIVE STATISTICS

Of the 215 participants who completed the entire survey, 68% were male and 29% were female. Approximately 42% were between 40 and 50 years old, 28% were between 50 and 60 years old and 85% were older than 40 years. Approximately 54% were English-speaking, 32% were Afrikaans-speaking, and 7% spoke a Nguni (Zulu, Xhosa, Swati, Ndebele) language.

Approximately 43% had professional qualifications, 30% had postgraduate degrees and 96% had a post-matric qualification. Approximately 60% were married, 12% were single and 10% were divorced. The mean number of years in practice was 16,5; 38% had been in practice between 9 and 16 years, and 79% had been in practice for 10 years or more. Approximately 79% indicated they had founded at least one financial planning practice.

In conclusion, a typical professional financial planner would likely be a plus 40-year-old, English or Afrikaans-speaking, married male. He would have a post-matric qualification with more than 10 years' experience and would have founded at least one financial planning practice. The population was thus representative of experts identified by Ericsson (2006) and Dew *et al.* (2015) as those who conducted 10 000 hours of domain-specific deliberate practice that have achieved superior performance. This is also consistent with the conceptualisation of effectuation theory by Sarasvathy (2001a, b).

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6.3 ANALYSIS OF EFFECTUAL BEHAVIOURS FOR RELIABILITY AND VALIDITY

Effectual behaviours have been conceptualised as the five explicit behaviours of using available means under the entrepreneurs' control and co-creating a network of partnerships through committed resources that passes individual affordability tests. The network maintains its flexibility to embrace and leverage contingencies and is where the outcomes of creative processes are explicitly controlled through deliberate action (Dew *et al*., 2008; Sarasvathy, 2008).

Chandler *et al.* (2011) empirically established that effectuation is a formative multidimensional construct which has components of experimentation, affordable loss, flexibility and pre-commitments in start-up firms. Brettel *et al.* (2012) captured four dimensions of effectuation, as articulated by Sarasvathy (2001a, b), in a corporate context that focused on R&D: the use of available means to create new possibilities as opposed to using and acquiring means to pursue a predetermined goal, the use of affordable loss as opposed to expected return as a decision-making criterion, to form partnerships as opposed to being guided by competitive analysis, and to embrace contingencies as opposed to avoiding risks.

This study created five reliable research items, as displayed in Table 26, to measure effectual behaviours. The EFA revealed a Cronbach alpha coefficient of 0.628 for the construct (Table 25). This is reasonably close to 0.7, an acceptable level for a reliable measure. Nunnally (1978) states that the Cronbach Alpha coefficient values may be below 0.7 to be acceptable, but not lower than 0.6. Likewise, Malhotra (2012) avers that, depending on the nature and purpose of the study and scale, a minimum Cronbach Alpha of above 0.6 is recommended. What was interesting is that the five theoretical dimensions related to effectual behaviours loaded on different factors used in this study. Available means represented by the item "I considered who I am, what I know well and who I know when co-creating a market for my practice" and exploiting contingencies represented by the item "When co-creating a market for my practice, unpredictable challenges are expected… I exploit these contingencies through experimentation and by being flexible" had a higher correlation and Cronbach's alpha associated with value co-creation.

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The affordable-loss principle represented by the item “I am careful not to commit more time, effort or money than I could afford to lose, when co-creating a market for my practice” and the pilot-in-the-plane control principle represented by the item “I prefer to be in control when the future is unpredictable” had a higher correlation and Cronbach’s alpha associated with effectual behaviours. Lastly, the principle of partnerships represented by the item “My friends, family or other contacts from my personal or professional networks are strategic and pre-commit resources to my practice …when co-creating a market for my practice” had a higher correlation and Cronbach’s alpha associated with co-created market opportunities.

What was more revealing is that the effectual behaviour factor had items related to the theoretical dimensions found in entrepreneurial marketing and service science. The concept of co-created opportunities forms the centrepiece of entrepreneurial-marketing theory and shares the ‘value’ dimension found in service science. These dimensions are value propositions, ViU, value-in-context and co-produced value. The items “I first co-create an opportunity … for my practice”, “The value … is determined in a particular context” and “The value … is derived from my clients’ experiences of my service and solutions” had a higher correlation and Cronbach’s alpha associated with effectual behaviours.

The EFA conducted confirmed the reliability of the theorised control and affordable-loss dimensions of effectual behaviours. It theoretically and empirically introduced two unique dimensions of value and opportunity co-creation to the effectual behaviours of professional financial planners. These new dimensions of effectual behaviours are driven by the desire of what value can be co-created (Engel *et al.,* 2017).

The CFA conducted validated the conceptual structure of the effectual behaviours found in the EFA (Table 34). However, the item “I considered who I am, what I know well and who I know when co-creating a market for my practice” representing the theorised available means dimension of effectual behaviours could not be rejected ($p<0.05$) as being part of effectual behaviours construct (Table 34). Thus, the originally theorised dimensions of control, means and affordable loss were reliably confirmed as being the dimensions of the effectual behaviours construct. The dimensions of value and opportunity co-creation were also not rejected ($p<0.05$) as being part of the effectual behaviours construct (Table 34).

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The data under the 'effectual behaviours' construct was not normally distributed, as evidenced by the kurtosis measure of 15.675 (Table 31), which is substantially greater than the minimum required measure of 7. The CR, being the z-statistic, was 10.306, also substantially greater than the minimum required measure of 5. A convergent solution was, however, achieved, yielding a $\chi 2$ value of 13.424 with 9 df and a probability value of 0.144 (Table 33). All the items' regression weights and variances were significant ($p<0.05$) (Table 34). Results from the CFA provided evidence of an acceptable overall model fit, as displayed by the following GOF statistical categories (Table 36):

- CMIN/df of 1.492 (<3);
- p-value of 1.444 (≥0.05);
- GFI of 0.974 (≥ 0.95);
- AGFI of 0.939 (≥ 0.80);
- NFI of 0.753 (≥ 0.90);
- CFI of 0.888 (≥ 0.90);
- IFI of 0.902 (≥ 0.90);
- RMSEA of 0.055 (≤ 0.08);

6.4 ANALYSIS OF EFFECTUAL NETWORKS FOR RELIABILITY AND VALIDITY

It has been theoretically established that effectual networks are outcomes of effectual behaviours (Sarasvathy, 2008; Dew *et al*., 2008). Effectual networks involve the process of leveraging existing relations to explore new value co-creating possibilities using available means that have been committed through an affordable-loss criterion (Sarasvathy & Dew, 2003; Sarasvathy, 2008).

This process gives rise to expanded resources and converging constraints that serendipitously give rise to co-created market opportunities represented by new products, markets and firms (Sarasvathy & Dew, 2003; Sarasvathy, 2008, Engel *et al.* 2017; Ahoba-Sam & Charles, 2019). There was no empirical study among those evaluated that operationalised effectual networks.

Most of the questionnaire items under Sections D and G, related to new markets and co-created market and opportunities, loaded strongly on Factor 2 (co-created networks). This was evidenced through the EFA with a Cronbach alpha coefficient of 0.756 (Table 22). It has also theoretically been established that the intersection of effectuation and entrepreneurial marketing is the creation of markets and opportunities through networks.

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These networks, whether personal or professional, enable the co-creation of goals, value propositions, opportunities, expanding resources and converging constraints for new markets. The items related to the conceptualisation of new markets under effectuation were:

- "I use my personal network to expand my resources (new clients, technology, investments or expertise) to co-create new markets for my practice";
- "My personal network creates converging constraints (conditions, expectations or commitments) that [force] me to co-develop goals with them";
- "I use my expanding resources (new clients, technology, investments or expertise) and converging constraints (conditions, expectations or commitments) from my personal network to co-create new markets for my practice";
- "I use my networks' expanded resources (new clients, technology, investments or expertise) to co-create new markets for my practice"; and
- "I use my networks' converging constraints (conditions, expectations and goals) to co-create new markets for my practice".

These items had a high correlation and Cronbach's alpha (Table 23) associated with the effectual network construct. All of the items' corrected item-total correlation values (Table 23) were greater than 0.3. None of their Cronbach's alpha if item deleted (Table 23), which ranged between 0.708 and 0.754, had a value greater than the final alpha obtained. As a result, none of these items needed to be deleted as they would not considerably increase the value of the Cronbach's alpha (Table 22).

The items related to the conceptualisation of new markets under entrepreneurial marketing were: "I co-create new opportunities through co-creating new markets and value propositions", "Co-creating markets and opportunities grows my practice" and "I use electronic media when co-creating opportunities". These items had a high correlation and Cronbach's alpha associated with the effectual network construct (Table 23). All of the items' corrected item-total correlation values were greater than 0.3. None of their Cronbach's alpha if item deleted (Table 23), which ranged between 0.712 and 0.756, had a value greater than the final Cronbach's alpha obtained.

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The CFA conducted validated the conceptual structure of the effectual networks found in the EFA, where all the items under effectual networks were significant ($p<0.05$), except for the item "I use electronic media when co-creating opportunities" (Table 40). As a result, the conceptualisation of effectual networks in both effectuation and entrepreneurial-marketing theory were validated as the fabric from which markets are created.

The data under the 'effectual network' construct was not normally distributed, as evidenced by the kurtosis measure of 26.313 (Table 37), which is substantially greater than the minimum required measure of 7. The CR, being the z-statistic, was 15.101, also substantially greater than the minimum required measure of 5. A convergent solution was, however, achieved ($p<0.05$), yielding a $\chi 2$ value of 86.354 with 14 df and a probability value of 0.000 (Table 39). All the items' regression weights and variances in Table 40 and Table 41, respectively, were significant ($p<0.05$). Results from the CFA provided evidence of an unsatisfactory overall model fit by a very small margin, as evidenced by the following GOF statistical categories (Table 42):

- CMIN/df of 3.699 (should not be >3);
- p-value of 0.000 (should be ≥0.05);
- GFI of 0.863 (should be ≥ 0.90);
- AGFI of 0.725 (should be ≥ 0.80);
- NFI of 0.686 (should be ≥ 0.90);
- CFI of 0.715 (should be ≥ 0.90);
- IFI of 0.723 (should be ≥ 0.90);
- RMSEA of 0.177 (should be ≤ 0.08);

6.5 ANALYSIS OF VALUE CO-CREATION FOR RELIABILITY AND VALIDITY

Value co-creation has been conceptualised under the service science of S-D logic, entrepreneurial marketing and effectuation (Read & Sarasvathy, 2012; Vargo and Lusch, 2004; Whalen & Akaka, 2016; Ranjan & Read, 2017). At the intersection of these theories are the values created through service exchange, that are in use and that are co-produced (Ranjan & Read, 2017; Fan & Luo, 2020). Co-production involves the dimensions of knowledge sharing, equity in control over the process and outcomes, and interaction that involves understanding, sharing and communication (Rajan & Read, 2017). ViU involves experience as an emotional and memorable interaction, an appeal to personalise preferences and relationships that have reciprocal and iterative processes (Rajan & Read, 2017).

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Co-creation was defined as an interactive process between at least two willing resource integrating actors (Lusch & Vargo, 2004), mutually creating value through specific form(s) of collaboration (Skarzauskaite, 2013). The dimensions of jointly developing and communicating value propositions proximate the concept of 'value offering', as conceptualised by O'Cass and Ngo (2011). Value offering operationalises the dimensions of value co-creation through reflective dimensions of the customer consumption experience, product/service performance (quality, innovative features and personal preferences), prices that are reasonable and affordable, where value is transferred through relationships that are mutually beneficial and create hassle-free purchasing experiences (O'Cass and Ngo, 2011). Value co-creation signals a symbolic value possibility by both customers and suppliers (Whalen & Akaka, 2016) and represents how the actors will positively create value for each other (Read *et al*., 2009, a, b).

Most of the questionnaire items under Section E, related to value propositions, loaded strongly on Factor 1 (value co-creation). This was evidenced through the EFA with a Cronbach alpha coefficient of 0.842 (Table 19). This study theoretically established that at the intersection of effectuation, entrepreneurial marketing and service science theories - the customer is always the co-creator of value (Vargo & Lusch, 2004) - whether that value is co-produced or created in use.

The items related to the conceptualisation of value co-creation, as defined by O'Cass and Ngo (2011), were:

- "Consider how they want to experience the value my services or solutions will create for them";
- "Determine what is the value that any quality aspects of my services or solutions will create for them";
- "Determine what is the value that any innovative features of my services or solutions will create for them";
- "Determine what is the value that any of their personal preferences for my services or solutions will create for them";

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- "Determine what are the mutual benefits that my value proposition will be created for all parties involved"; and
- "Determine what will create a hassle-free value exchange".

The items related to the conceptualisation of value co-creation, as defined by Whalen and Akaka (2016), were: "I develop my value proposition by determining the value that will be created when my clients experience my services and solutions", "I develop my value proposition by considering the context within which that value will be created" and "I prefer face-to-face interactions when co-creating opportunities".

The items related to the conceptualisation of value co-creation as defined by Read and Sarasvathy (2012), were: "I considered who I am, what I know well and who I know when co-creating a market for my practice", "When co-creating a market for my practice, unpredictable challenges are expected", "I exploit these contingencies through experimentation and by being flexible" and "I use my professional body to help expand my resources (new clients, technology, investments or expertise) to co-create new markets for my practice".

The above items loaded strongly on Factor 1 (value co-creation). All the items' corrected item-total correlation values (Table 20) were greater than 0.3, except "I use my professional body to help expand my resources (new clients, technology, investments or expertise) to co-create new markets for my practice" that had a value of 0.262, marginally less than 0.3. The Cronbach's alpha if item deleted (Table 20) of the items "I prefer face-to-face interactions when co-creating opportunities", "When co-creating a market for my practice, unpredictable challenges are expected" and "I use my professional body to help expand my resources (new clients, technology, investments or expertise) to co-create new markets for my practice" ranged between 0.844 and 0.852 and were marginally greater than the final alpha of 0.842. The remainder of the nine items' Cronbach's alpha if item deleted (Table 20) ranged between 0.816 and 0.837 and were less than the final alpha obtained. In summary, none of the items needed to be deleted as they would not considerably increase the value of the Cronbach's alpha (Table 19).

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The CFA conducted validated the conceptual structure of the value co-creation found in the EFA, where seven of the 12 items under Factor 1 (Table 46) were significant ($p<0.05$), except the items "I use electronic media when co-creating opportunities", "I use my networks' expanded resources (new clients, technology, investments or expertise) to co-create new markets for my practice", "I use my networks' converging constraints (conditions, expectations and goals) to co-create new markets for my practice", "I co-create new opportunities through co-creating new markets and value propositions" and "Co-creating markets and opportunities grows my practice". As a result, only the conceptualisation of value co-creation in the entrepreneurial-marketing domain was validated as the fabric from which markets are created.

The data under the 'value co-creation' construct was not normally distributed, as evidenced by the kurtosis measure of 47.866 (Table 43), which is substantially greater than the minimum required measure of 7. The CR, being the z-statistic, was 24.378 (Table 43), also substantially greater than the minimum required measure of 5. A convergent solution was, however, achieved $p<0.05$ ($p=.000$), yielding a $\chi 2$ value of 73.981 with 20 df (Table 45). All of the seven items' regression weights and variances in Table 46 and (Table 47), respectively, were significant at $p<0.05$. Results from the CFA provided evidence of a slightly unsatisfactory overall model fit, as evidenced by the following GOF statistical categories (Table 48):

- CMIN/df of 3.699 (should not be >3);
- p-value of 0.000 (should be ≥0.05);
- GFI of 0.900 (should be ≥ 0.95);
- AGFI of 0.819 (should be ≥ 0.80);
- NFI of 0.881 (should be ≥ 0.90);
- CFI of 0.909 (should be ≥ 0.90);
- IFI of 0.910 (should be ≥ 0.90);
- RMSEA of 0.128 (should be ≤ 0.08)

6.6 ANALYSIS OF CO-CREATED MARKET OPPORTUNITIES FOR RELIABILITY AND VALIDITY

Theoretically, co-created market opportunities involve an iterative process to generate and shape market imperfections. This iterative process involves the joint development of value propositions within a network of consumers and producers in market(s), where the value created is derived through use and determined in a particular social and temporal context

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(Vargo *et al.*, 2008; Whalen & Akaka, 2016). Market imperfections are defined as opportunities (Venkataramnan, 1997; Alvarez *et al*., 2013). Created opportunities are the result of emergent entrepreneurial processes like effectuation that act on an environment (Alvarez *et al*., 2013). Once the opportunity unfolds, it requires actors, like customers, suppliers and other stakeholders in the context, to participate for the value that is co-created to be exploited (Alvarez *et al*., 2013).

The items “My friends, family or other contacts from my personal or professional networks are strategic and pre-commit resources to my practice that I would otherwise have to pay for when co-creating a market for my practice”, “I use my professional body for assistance in co-creating a market for my practice”, “My professional body creates constraints (conditions, expectations or commitments) that [force] me to co-develop goals with them” and “I first co-create a market before co-creating an opportunity for my practice” all had corrected item-total correlation values of less than 0,3 in the item-total statistics (Table 29). The factors’ Cronbach’s alpha was 0.407 (Table 28), significantly less than 0.7, which is required for a reliability measure.

The Cronbach’s alpha if item deleted in the item-total statistics (Table 29) for the items ranged between 0.297 and 0.389 and were less than the final alpha obtained. In summary, none of the items needed to be deleted as they would not considerably increase the value of the Cronbach’s alpha.

The CFA conducted validated the conceptual structure of the co-created market opportunities found in the EFA, where all the items were significant at $p<0.05$ (Table 52) and could not be excluded. What was significant is that item “I use electronic media when co-creating opportunities” under Factor 2 (Table 52) could not be rejected at $p<0.05$ ($p=0.022$) under constructed co-created market opportunities.

The data under the ‘co-created market opportunities’ construct was normally distributed, as evidenced by the kurtosis measure of 4.048 (Table 49), which is substantially smaller than the minimum required measure of 7. The CR, being the z-statistic, was 2.661, also substantially smaller than the minimum required measure of 5. A convergent solution was, however, not achieved $p<0.05$ ($p=0.441$), yielding a $\chi 2$ value of 8.957 with 9 df (Table 51).

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All the five items' regression weights and variances, in Table 52 and Table 53, respectively, were significant at $p<0.05$. Results from the CFA provided evidence of a satisfactory overall model fit, as evidenced by the GOF statistical categories (Table 54):

- CMIN/df of 0.995 (should not be >3);
- p-value of 0.441 (should be ≥0.05);
- GFI of 0.982 (should be ≥ 0.95);
- AGFI of 0.959 (should be ≥ 0.80);
- NFI of 0.876 (should be ≥ 0.90);
- CFI of 1.000 (should be ≥ 0.90);
- IFI of 1.001 (should be ≥ 0.90);
- RMSEA of 0.000 (should be ≤ 0.08)

6.7 HYPOTHESIS 1: PROFESSIONAL FINANCIAL PLANNERS CREATE EFFECTUAL NETWORKS TO CO-CREATE MARKET OPPORTUNITIES

All the growth models failed the normality tests with kurtosis measures of greater than 7, and all were positively skewed to the right, where the CRs, z-statistics, were greater than 5.

In all the growth models presented, the role of effectual networks in co-creating market opportunities could not be rejected at $p<0.05$ ($p = 0.00$). As a result, effectual networks are necessary for professional financial planners to co-create market opportunities. As the coefficient estimate between effectual behaviours and effectual networks was set to 1 in the first four models (Growth in Client Base, Growth in Strategic Partnerships, Growth in Net Commission and Growth in Assets Under Management), it was not possible to establish whether effectual networks mediate the relationship between effectual behaviours and co-created market opportunities.

However, in the last two models (Growth in Sales Reps and Growth in Back-office Staff), the null hypothesis that there is no relationship between effectual behaviours and effectual networks could not be rejected at $p<0.05$ ($p = 0.139$ and $p = 0.188$, respectively). This answers the research question of how professional financial planners use effectual behaviours to determine who become the actors in the process of creating effectual growth opportunities for professional financial planners' practices. Effectual networks are necessary, but are they sufficient? The following hypothesis will address this.

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6.8 HYPOTHESIS 2: PROFESSIONAL FINANCIAL PLANNERS USE VALUE CO-CREATION TO CO-CREATE MARKET OPPORTUNITIES

In the first four models presented, the role of value co-creation in co-creating market opportunities was rejected at $p<0.05$ ($p= 0.683$; $p=0.643$; $p= 0.703$; $p= 0.622$). For the remaining two models, these relationships were set to 1.

As a consequence, contrary to what was expected, this study could not establish that value co-creation mediates the relationship between effectual behaviours and co-created market opportunities. This partially answers this study's research question of how professional financial planners use effectual behaviours to determine what value should be created when co-creating effectual growth opportunities. Effectual behaviours do not use value co-creation alone when co-creating market opportunities.

6.9 HYPOTHESIS 3: PROFESSIONAL FINANCIAL PLANNERS USE VALUE CO-CREATION AS A MEANS TO CREATE AN EFFECTUAL NETWORK

In all the growth models presented, the role of value co-creation in effectual networks could not be rejected at $p<0.05$ ($p= 0.004$; $p= 0.004$; $p= 0.004$; $p= 0.004$; $p= 0.000$; $p= 0.000$). As a result, value co-creation is necessary for effectual networks.

For the first four models, the null hypothesis that there is no relationship between effectual behaviours and value co-creation could not be rejected at $p<0.05$ ($p= 0.683$; $p= 0.643$; $p= 0.703$; $p= 0.622$). As the coefficient estimate between effectual behaviours and value co-creation was set to 1 in the last two models, it was not possible to establish whether value co-creation mediated the relationship between effectual behaviours and effectual networks.

As a result, what was established is that value co-creation is necessary for effectual networks. However, contrary to what was expected, the researcher could not establish that value co-creation plays a mediating role between effectual behaviours and effectual networks. This then enriches the answer to the research question of how professional financial planners use effectual behaviours to determine what value should be created when co-creating growth opportunities. Value co-creation is necessary for effectual networks but is not necessarily a mediator of effectual behaviours to create effectual networks.

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6.10 HYPOTHESIS 4: PROFESSIONAL FINANCIAL PLANNERS USE EFFECTUAL NETWORKS AND VALUE CO-CREATION TO CO-CREATE MARKET OPPORTUNITIES

In all the growth models presented, the role of effectual networks in value co-creation could not be rejected at $p<0.05$ ($p= 0.000$; $p= 0.000$; $p= 0.000$; $p= 0.00$; $p= 0.002$; $p= 0.002$). However, contrary to what was expected, this study could not establish that value co-creation plays a mediating role between effectual behaviours and effectual networks or a mediating role between effectual behaviours and co-created market opportunities.

As a result, effectual networks are necessary for value co-creation and vice versa. What was established is that value co-creation is necessary for effectual networks and that effectual networks, in turn, are required for co-created market opportunities. The researcher can, therefore, deduce that there exists significant statistical evidence that both effectual networks and value co-creation are required to co-create market opportunities and that effectual networks mediate the relationship between value-co-creation and co-created market opportunities.

This then enriches the answer to the research questions of how professional financial planners use effectual behaviours to determine who become the co-creators and what they co-create when co-creating effectual growth opportunities. Professional financial planners co-create market opportunities through effectual networks (who) that mediate the value-co-creation (what) of their practices.

6.11 HYPOTHESIS 5: PROFESSIONAL FINANCIAL PLANNERS USE CO-CREATED MARKET OPPORTUNITIES TO CO-CREATE GROWTH OPPORTUNITIES

For the first five models, the null hypothesis – there is no relationship between co-created market opportunities and co-created growth opportunity measures – could not be rejected at $p<0.05$ ($p= 0.761$; $p= 0.551$; $p= 0.480$; $p= 0.575$; $p=0.913$). However, in the last model (Growth in Back-office Staff), there was a statistically significant relationship at $p<0.05$ ($p=0.017$) between co-created market opportunities and co-created growth opportunities, as measured through growth in back-office staff.

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Contrary to what was expected, the only growth measure that explained the mediating effect of co-created market opportunities between effectual networks and co-created growth opportunities was growth in back-office staff. This particular measure of growth is indicative that once market opportunities are co-created, the size of the firm in terms of back-office staff providing service elements of the business becomes the true measure of growth performance for a professional financial planner's practice.

This then answers the question of why professional financial planners use effectual behaviours to create effectual growth opportunities. Co-created market opportunities are necessary to co-create growth opportunities, measured through growth in back-office staff.

6.12 HYPOTHESIS 6: CO-CREATED GROWTH OPPORTUNITIES MEDIATE THE RELATIONSHIP BETWEEN CO-CREATED MARKET OPPORTUNITIES AND EFFECTUAL BEHAVIOURS

For the first five models the null hypothesis – co-created growth opportunities mediate the relationship between co-created market opportunities and effectual behaviours – could not be rejected at $p<0.05$ ($p= 0.880$; $p= 0.507$; $p= 0.541$; $p= 0.786$; $p=0.914$). However, in the last model (Growth in Back-office Staff), there was a very close statistically significant relationship at $p<0.05$ ($p=0.061$) between co-created growth opportunities and effectual behaviours, as measured by growth in back-office staff.

Contrary to what was expected, the only growth measure that explained the mediating effect of co-created growth opportunities between co-created market opportunities and effectual behaviours was the growth in back-office staff. This particular measure of growth is indicative that once market opportunities are co-created, the size of the firm in terms of back-office staff becomes the true measure of growth for professional financial planner's practice. Staff growth in professional financial planners' practices serves as an important determinant for effectual behaviours of corporate entrepreneurs.

This then addresses the final research question of how professional financial planners sustain their effectual behaviours. Growing their practices, as measured through growth in back-office staff servicing their new business, provided the means through which they sustain their effectual behaviours. In practice, these back-office staff provide the means

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through which new effectual networks can mediate value-co-creation activities to co-create new market and growth opportunities.

6.13 ADDITIONAL TESTS

In addition to the above discussion on the hypotheses that were tested, the following relationships, which were not originally hypothesised, were statistically significant.

Co-created growth opportunities measured through growth in strategic partnerships and growth in client base had a statistically significant relationship with value co-creation at $p<0.05$ ($p=0.026$ and 0.017, respectively). The author can conclude that specific to these measures, co-created growth opportunities mediate the relationship between co-created market opportunities and value co-creation. Analogically, this also coherent with concepts that value is co-produced through strategic partnerships and created in use (ViU) through client experiences.

Another measure under co-created growth opportunities, namely growth in assets under management, had a statistically significant relationship with effectual networks at $p<0.05$ ($p=0.04$). Analogically, this also makes sense, as an increase in assets under management within professional financial services practices will motivate changes in the set of partnerships and committed means to deliver on expectations of clients. These clients' expectations – related to the investment performance of the assets under management – and governance structures are necessary to ensure the security of their investments and the value that is co-produced and determined in use. It is these expectations that create the necessary convergence of constraints to fabricate the effectual network required for the construction and delivery of value-creation and co-created market opportunities. As a consequence, this study concludes that specific to these measures of co-created growth opportunities, effectual networks mediate the relationship between co-created growth opportunities and co-created market opportunities as well as between co-created growth opportunities and value co-creation.

The last statistically significant relationship that was not hypothesised was between two measures used in co-created growth opportunities: growth in assets under management and growth in net commissions at $p<0.05$ ($p=0.000$). Intuitively this makes sense as an

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increase in assets under management will generate more net commissions. Contrary to what was expected, these positive relationships did not extend to all the growth variables used or as new means to influence effectual behaviours.

6.14 LIMITATIONS OF THE STUDY

In Chapter 1, the delimitations of this study were described. Delimitations are within the control of the research effort, whereas limitations are not (Perry, 1998). The delimitations identified were restricted to the behaviours of experts like professional financial planners in uncertain contexts - and created the boundary of the research problem. The limitations of this study were structured around sampling frame, questionnaire, data collection method and longitudinal data.

The sampling frame included all 6000 registered members of the FPI of Southern Africa. A response rate of 7.3% was achieved. However, of the 532 respondents who started the survey, only 215 completed it. There was a progressive voluntary drop-off during the completion of the survey. However, the biggest drop-off appeared just after the biographical data and just before the data related to the performance of their practices. As a result, almost half of the respondents did not complete the entire survey, resulting in a limited subset of 215 responses that could be used.

Despite the survey questionnaire being tested with various individuals for taking, at most, 10 minutes to complete, and there being a limited number of items, it seems that there may have been questionnaire fatigue (Eiselen & Uys, 2005). In addition, even though the FPI survey coordinator vetted the questionnaire, some questions may have been difficult to interpret and respond to.

Respondents who were over the age of 50 represented 43,3% of all respondents. Given that the questionnaire was an electronic survey, there is also a possibility that most of these respondents may have had individual challenges to complete the survey through an electronic medium.

In summary, this study acknowledges its limitations which became apparent during the progress of the research. This resulted in a smaller sample size and a non-normal and

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skewed data distribution. However, these limitations do not detract from the strength of the findings but provide a platform for future research.

6.15 CONCLUSION ON RESEARCH PROBLEMS, QUESTIONS AND PROPOSITIONS

The above analysis provided four reliable constructs determined through an EFA, conducted on validated scale of items, to determine whether effectual behaviours co-create market and growth opportunities. These constructs are effectual behaviours, effectual networks, value co-creation and co-created market opportunities.

The CFA conducted established and confirmed the required validity of these constructs. The path analysis conducted established that effectual networks mediate the relationship between value co-creation and co-created market opportunities. It also established that value co-creation is necessary for the formation of effectual networks.

There was not sufficient statistical evidence to reject the hypothesis that professional financial planners create effectual networks to co-create market opportunities. This answered the first research question by empirically establishing that professional financial planners use self-selected members of an effectual network to become actors in the process of creating effectual growth opportunities for their practices.

There was also not sufficient statistical evidence to reject the hypothesis that professional financial planners use value co-creation as a means to create an effectual network. However, contrary to what was expected, this study could not establish that value co-creation plays a mediating role between effectual behaviours and effectual networks nor between effectual behaviours and co-created market opportunities. Despite this, the third research question could be answered. Value co-creation is necessary for effectual networks but is not necessarily a mediator of effectual behaviours to create market and growth opportunities.

This study also deduced that there exists significant statistical evidence that both effectual networks and value co-creation are required to co-create market opportunities and that effectual networks mediate the relationship between value-co-creation and co-created market opportunities. This enriched the answer to the research questions of how

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professional financial planners use effectual behaviours to determine who become the co-creators and what they co-create when co-creating effectual growth opportunities. Professional financial planners co-create market opportunities through effectual networks (who) that mediate the value-co-creation (what) of their practices.

Contrary to what was expected, the only growth measure that explained the mediating effect of co-created market opportunities between effectual networks and co-created growth opportunities was growth in back-office staff. This provided the only answer to the question as to why professional financial planners use effectual behaviours to create effectual growth opportunities.

In addition, contrary to what was expected, the only growth measure that explained the mediating effect of co-created growth opportunities between co-created market opportunities and effectual behaviours was the growth in back-office staff. This addressed the final research question relating to how professional financial planners sustain their effectual behaviours. Growing their practices, as measured through growth in back-office staff servicing their new business, provides the means through which they sustain their effectual behaviours. The above conclusions of this research enabled the creation of an Effectual Growth Model, as depicted in Figure 10, that addressed the research problem of how do professional financial planners use effectual behaviours to co-create growth opportunities for their practices in uncertain contexts?

Even though not hypothesised, but specific to co-created growth opportunities for the measure of growth in assets under management, co-created growth opportunities mediate the relationship between co-created market opportunities and effectual networks. Growth in assets under management also mediates the relationship between co-created growth opportunities and growth in net commissions.

Lastly, the limitations that became apparent during the progress of the study relate to the interpretations by the respondents of the questionnaire items, the data collection method given the respondents' age and digital savviness, and sensitivities around questions related to the performance measures of their practices. However, despite the resultant effects of these limitations on the sample size and non-normal and skewed data distribution, the

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limitations do not detract from the strength of the findings and empirical contributions (Table 99) but rather provide a platform for future research.

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Table 99: Summary of Empirical Contributions

Problem Statement	How to create effectual growth opportunities for firms in uncertain and unpredictable contexts?			
Research Proposition	This study proposes that South African professional financial planners create effectual networks and co-create value to co-create market and growth opportunities.			
Research problem	Research Question	Research Proposition	Hypothesis	Statistical Evidence
Ex ante who are the participants in the process of creating effectual growth opportunities, particularly when demand is also unknown and unpredictable?	How do professional financial planners use effectual behaviours to determine who become the actors in the process of creating effectual growth opportunities for professional financial planners' practices?	This study proposes that South African professional financial planners create effectual networks to mediate the relationship between effectual behaviours and co-created market opportunities under the temporal context of uncertainty.	Hypothesis 1: Professional financial planners create effectual networks to co-create market opportunities.	H1: Yes.
What value will be co-created in the process of co-creating growth opportunities that need to be resolved?	How do professional financial planners use effectual behaviours to determine what value should be co-created when creating effectual growth opportunities?	This study proposes that South African professional financial planners: 1. Create effectual networks to mediate the relationship between value co-creation and market opportunities. 2. Use value co-creation to mediate the relationship between effectual behaviours and effectual networks.	Hypothesis 2: Professional financial planners use value co-creation to co-create market opportunities. Hypothesis 3: Professional financial planners use value co-creation as a means to create an effectual network. Hypothesis 4: Professional financial planners use effectual networks and value co-creation to co-create market opportunities.	H2: No; H3: Yes; and H4: Yes.

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Why are effectual behaviours needed to co-create growth opportunities?	Why do professional financial planners use effectual behaviours to create effectual growth opportunities?	This study proposes that co-created growth opportunities are outcomes of co-created market opportunities.	Hypothesis 5: Professional financial planners use co-created market opportunities to co-create growth opportunities.	H5: Yes (Only valid for back-office staff as measure of growth).
How are effectual behaviours sustained?	How do professional financial planners sustain their effectual behaviours?	This study proposes that effectual behaviours are outcomes of co-created growth opportunities.	Hypothesis 6: Co-created growth opportunities mediate the relationship between co-created market opportunities and effectual behaviours.	H6: Yes (Only valid for back-office staff as measure of growth).

Source: Author's construction

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7 RECOMMENDATIONS AND IMPLICATIONS

7.1 INTRODUCTION

After discussing the study results and limitations, this study now concludes with recommendations for future research that involves the theories of effectuation, entrepreneurial marketing and service science. In addition, it articulates the theoretical, methodological and managerial implications of its findings to answer the questions of 'what is new', 'so what', 'why so', 'why now' and 'who cares' for reviewers of this study to judge the relevance any substantive issues (Whetten, 1989).

7.2 RECOMMENDATIONS FOR FUTURE RESEARCH

Contrary to what was expected, this research could not empirically establish that professional financial planners use effectual behaviours, as conceptualised by Sarasvathy and Dew (2005a), to co-create new market and growth opportunities under conditions of uncertainty. Instead, it was able to reconceptualise the outcomes of the effectual behaviours as the creation of effectual networks, value co-creation and co-created market opportunities that enable the co-creation of growth opportunities. These outcomes were teased out by using the lens of entrepreneurial marketing and service science's S-D logic.

Future research could further this discussion on effectual growth, using blended entrepreneurial-marketing and service-science logic, through comparative studies on the logic of causation and a composite index of the growth variables used in this study, instead of segregating these in separate models. More research may be directed at whether the population of financial planners are heterogeneous and whether they each have a unique measure of performance and what are the implications thereof. It could use entrepreneurs versus non-entrepreneurs, experienced versus novice, manager versus entrepreneur, gender, age and experience-based comparative entrepreneurial studies. These could be conducted on individual, team, firm (corporate or non-corporate) and macro-economic levels of analysis. Further research on exploring why growth in back-office staff is a unique measure of growth in professional service firms as opposed to other measures: assets under management, client base, strategic partnership, sales reps and net commissions – that are specific measures of performance for the general population of professional financial planners.

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In addition, the relationship established between value co-creation, effectual networks and co-created market opportunities can used to create and expand studies in the following ways:

- The role and dependencies of value co-creation – service sciences - in effectual networks and more generally network theory.
- The role and dependencies of effectual networks and more generally network theory in value co-creation – service science literature.
- The role and dependencies of effectual networks and network theory in co-creation of market opportunities – entrepreneurial market literature.
- The role and dependencies of co-created market opportunities – entrepreneurial marketing literature -in creating growth opportunities.

Lastly, expanding entrepreneurship theory – particularly CE, effectuation, entrepreneurial marketing and service sciences - into the novel domain of heterogeneous professional services firms holds the potential to introduce new insights in future research.

7.3 THEORETICAL IMPLICATIONS

By extending the theoretical lens of entrepreneurial marketing and service science to effectuation theory, this study was able to tease out the raw materials of networks, value and opportunities fabrics upon which effectual behaviours act to effectually co-create market and growth opportunities. These have been highlighted as the empirical gap in effectuation theory and enabled the value-added contribution to theory development, as described by Whetten (1989) and Fisher (2012). This study makes an empirical contribution to the shift in CE dialogue from products, firms and markets to value co-creation, effectual networks and co-created market opportunities.

The marriage of effectuation, entrepreneurial marketing and service science provides a new perspective to advance research in CE - specific to professional service firms - to enable further application of theories in social science studies. This study successfully synthesised the theoretical application of both a process and a variance-based approach to effectuation research. Lastly, it introduced a new research stream using effectuation theory to further advance the dearth of empirical studies in strategic renewal behaviours native to CE.

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7.4 METHODOLOGICAL IMPLICATIONS

The survey questionnaire that was chosen was consistent with other effectual research methods which use behaviours as their unit of analysis and which are the preferred method of data collection by the FPI. This study sought to explain the behaviours of professional financial planners as experts in their field under conditions of uncertainty. The professional financial planner - chosen as the level of analysis to create a new dialogue in effectuation research - was a successful strategy as it achieved its intended outcome.

It also provided reliable and validated research instruments to measure effectual behaviours, effectual networks, value co-creation, co-created markets opportunities and effectual growth opportunities. This enabled a path analysis that yielded reliable statistical models which evidenced the mediating role of effectual networks and co-created market opportunities in co-creating growth opportunities.

This study also provided the unique context of the South African financial services industry to test the theory of effectuation, entrepreneurial marketing and service science. No other empirical study has been conducted in this context, and this study serves to enrich the generalisability of these theories.

The unique design of the questionnaire used, including its structure and items, was carefully crafted from primary and secondary theories of CE, effectuation, entrepreneurial marketing and service science with due regard to the purpose of this study. The reliability of the item scale enables its reuse in different contexts.

Despite the FPI being representative of professional financial planners in the life assurance industry in South Africa, this survey could have been cast wider to include other institutes that had similar experts among their ranks. This could have compensated for the small sample size that was realised during the progress of the study.

Lastly, despite using several experts to vet and propose changes to the survey items used, the quality of the questionnaire could have been improved through a pilot group of professional financial planners. This could have mitigated the possible difficulty with interpreting the questions and potential response fatigue, resulting in a larger sample size.

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7.5 MANAGERIAL IMPLICATIONS

The empirical findings of this study provide practical implications for the pedagogy of CE. In addition, this study's findings provide unique implications for the application of corporate effectual behaviours on the level of the effectuators, entrepreneurial firm, market and regulator where co-created growth is the common aspiration.

7.5.1 Implications for the Pedagogy of Corporate Entrepreneurship

The intersection of effectuation, entrepreneurial marketing and service science has yielded new insights for the application of effectual behaviours found in uncertain contexts. Their impact on social, value and opportunity fabrics has empirically yielded the concepts of effectual networks, value co-creation, co-created market opportunities and co-created growth opportunities.

This study's findings enable educators and researchers to emphasise the mediating role of effectual networks when using value co-creation to co-create market opportunities. In addition, the co-dependencies of value co-creation and effectual networks in co-creating market opportunities, empirically shown in this study, give birth to a new focus on the co-creating-growth landscape in research and CE education.

In addition, effectuation pedagogy should not be limited to using the dimensions of available means, partnerships, affordable-loss, contingencies and control to create outcomes of products, firms and markets. Adding the dimensions of value co-creation, effectual networks and co-created market opportunities would enrich learning interventions to co-create growth opportunities.

7.5.2 Implications for the Corporate Entrepreneur

The mediating roles of effectual networks, value co-creation and co-created market opportunities in creating outcomes of co-created growth opportunities introduce new dimensions to effectual CE behaviours. In uncertain and value-centred contexts, CE-determinant behaviours of innovativeness and proactiveness and attitudes of risk-taking that are directed to acting on social, value and opportunity fabrics can effectually co-create market and growth opportunities.

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This fresh perspective on directing corporate entrepreneurs' co-creation behaviours toward effectual networks, value co-creation and market opportunities – as complementary to effectuation outcomes of directing behaviours towards new markets, products and firms in uncertain contexts – can move practitioners towards more successfully co-created growth opportunities. The transformation process of co-creating new realities through this perspective emphasises the importance of marrying CE and effectual behaviours in the corporate entrepreneur.

7.5.3 Implications for the Entrepreneurial Firm

The empirical outcomes of this study, introduces a framework to give effect to the expected outcomes of the CE strategies of innovation, corporate venturing and strategic renewal in an uncertain context. The role of the corporate firm in mediating the behaviours of innovativeness and proactiveness and attitudes of risk-taking – through entrenching firm processes of management support, work discretion, rewards and reinforcement, time availability and organisational boundaries – can now be housed within a coherent mediating framework of value co-creation, effectual networks and co-created market and growth opportunities.

The conceptual internal framework defined by effectual networks, internal and external to the firm, value co-creation driven actions and aspirations - led by co-created market opportunities - creates the required effectual orientation to co-create growth opportunities necessary for firms' survival. This creative framework adds to understanding business models in uncertain contexts. The new effectual framework introduced by this study encourages a shift in focus from new products and firms to value co-creation and co-created market opportunities to co-create market and growth opportunities.

Lastly, professional service firms are heterogeneous and current categories created by Von Nordenflycht (2010) may have subcategories that have unique growth measures of performance. The sample of professional financial planners that completed this study's questionnaire have a growth in back-office staff as their unique measure of superior performance. Growth in support structures in the form of back-office staff is thus a critical factor for superior performance for professional financial planners. Each subcategory of

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professional service firms could potentially have its unique measure performance specific to their created effectual networks, value co-creation and market opportunity framework.

7.5.4 Implications for Markets and Regulators

The creation of new markets are outcomes of the effectual corporate entrepreneurial process. Market transformation actors, be they corporate entrepreneurs or firms, use various behaviours and strategies in different contexts to create specific performance outcomes. Specific to an uncertain context, market and regulator behaviours play a critical role in facilitating or constraining co-creation behaviours of firms and corporate entrepreneurs.

Market structures and regulations that encourage the formation of effectual networks, value co-creation and co-created market opportunities would allow for the rapid formation of co-created growth opportunities for all market actors. On the other hand, market structures and regulations that constrain the formation of effectual networks, value co-creation and co-created market opportunities would constrain co-created growth opportunities and wealth creation.

In conclusion, to co-create growth opportunities, corporate entrepreneurs, firms, market players and regulators have to collectively focus on effectual networks, value co-creation and co-created market opportunities. The co-creation process is driven by corporate entrepreneurs; the entrepreneurial firms are the facilitators and the markets and regulators are the enablers.

7.6 CONCLUSION

Future research should focus on using this study's findings as scaffolding to further examine its application in comparative studies and other professional service firms. The marriage of effectuation, entrepreneurial marketing and service science has given birth to behaviours of effectual networks, value co-creation, co-created market opportunities and co-created growth opportunities. The creation and empirical relationships of these concepts have advanced research in CE and effectuation and evidenced an empirical application of theorising in social science studies.

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This study provided a unique context to explain the corporate entrepreneurial behaviours of professional financial planners like Kobus Kleyn and Logan Naidu, as experts in their field, under conditions of uncertainty. It yielded reliable and validated research instruments to measure effectual behaviours, effectual networks, value co-creation, co-created markets opportunities and effectual growth opportunities. This enabled a path analysis that yielded reliable statistical models which evidenced the interdependence of value co-creation and effectual networks and the mediating role of effectual networks between co-created market and growth opportunities.

The intersection of effectuation, entrepreneurial marketing and service science has yielded new insights for pedagogy, corporate entrepreneurs, entrepreneurial firms, markets and regulators into the application of effectual tools to social, value and opportunity fabrics. The resultant shift in focus regarding effectual corporate entrepreneurial outcomes – from new products to value co-creation, from new firms to effectuation networks and from new markets to co-created market opportunities – and as mediators of co-created growth opportunities. Lastly, this research has introduced a novel dialogue of effectuation in professional service firms and collective satisfies the scientific agenda of advancing the body of knowledge in CE, effectuation, entrepreneurial marketing and service science research.

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9 APPENDICES

9.1 APPENDIX A: LIST OF EFFECTUAL EMPIRICAL STUDIES

Empirical Studies of Effectual Behaviours, Effectual Networks, Value Co-creation, Co-created Market Opportunities and Effectual Growth Opportunities

	Author	Effectual Behaviours
	Agogué, Lundqvist and Williams Middleton (2015)	
Who was measured?		Thirteen student teams in Sweden
What was measuret?		Output diagrams
How was it measured?		Likert-scale survey
	Alsos *et al.* (2014)	
Who was measured?		Study 1: 179 entrepreneurs; Study 2: 257 limited liability corporations in Norway
What was measured?		Entrepreneurial behaviours
How was it measured?		Seven-point Likert-scale survey
	Alsos *et al.* (2016)	
Who was measured?		Three hundred and fifty new firms in Norway
What was measured?		Influence of social identity of entrepreneurial behaviours
How was it measured?		Seven-point Likert-scale survey
	Appelhoff *et al.* (2016)	
Who was measured?		Founding team of 114 German ventures
What was measured?		Entrepreneurial behaviours of teams
How was it measured?		Survey using Brettel's measures
	Berends *et al.* (2014)	
Who was measured?		Process events
What was measured?		Decision-making entrepreneurial behaviours in 352 events in a product innovation process
How was it measured?		Sequence of goal setting, idea formation and resource commitments in events within product development process
	Blauth, Mauer, and Brettel (2014)	
Who was measured?		Two hundred and nineteen product development employees in German product and service firms
What was measured?		Creativity in new product development decision-making behaviour
How was it measured?		Seven-point Likert-scale survey

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	Brettel *et al.* (2012)	
Who was measured?		Four hundred technology-based R&D managers
What was measured?		Entrepreneurial decision-making behaviours
How was it measured?		Six-point Likert-scale survey
	Cai, Guo, Fei and Liu (2017)	
Who was measured?		Founders and managers of Chinese start-ups
What was measured?		Firm-level decision-making behaviour
How was it measured?		Five-point Likert-scale survey (Chandler *et al*., 2011)
	Chandler *et al.* (2011)	
Who was measured?		Three hundred and seven new ventures in four industries (two separate samples of founders of young start-up firms, 111 and 196)
What was measured?		Firm decision-making behaviour
How was it measured?		Two five-point Likert-scale surveys
	Da Costa and Brettel (2011)	
Who was measured?		Fifty-six corporate employees at a multinational firm
What was measured?		Individual decision-making behaviour
How was it measured?		Six-point Likert-scale survey adapting version of Brettel *et al*. (2012)
	De la Cruz, Jover and Gras (2018)	
Who was measured?		Two hundred and seventy-one Spanish student entrepreneurs
What was measured?		Individual decision-making behaviour
How was it measured?		Five-point Likert-scale survey – items based on the Chandler *et al.* (2011) scale
	Deligianni, Voudouris and Lioukas (2015)	
Who was measured?		One hundred and twenty-nine Greek new ventures
What was measured?		Firm-level decision-making behaviour
How was it measured?		Five-point Likert-scale survey (Chandler *et al.,* 2011)
	Dew, Read, Sarasvathy and Wiltbank (2009)	
Who was measured?		Twenty-seven expert entrepreneurs and 37 MBA students (novice entrepreneurs)
What was measured?		Individual decision-making behaviour
How was it measured?		Verbal protocol analysis of transcripts from think-aloud experiment related to business start-ups
	Dew, Read, Sarasvathy, Wiltbank (2015)	
Who was measured?		Four hundred and twelve founder/entrepreneurs
What was measured?		Expertise by applying control and prediction strategies in developing an opportunity
How was it measured?		Seven-point Likert-scale scenario-based survey

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	Dutta and Gwebu (2015)	
Who was measured?		One hundred and sixty-four students at a large public university in the United States of America
What was measured?		How entrepreneurs (behavioural) intention develops
How was it measured?		Survey
	Dwivedi and Weerawardena (2018)	
Who was measured?		Five hundred and seven social purpose organisations
What was measured?		Firm-level behavioural orientation
How was it measured?		Survey using newly developed measures for social entrepreneurship context; five items
	Engel, Dimitrova, Khapova and Elfring (2014)	
Who was measured?		Ninety-three business students with no prior entrepreneurship experience
What was measured?		Individual decision-making behaviour
How was it measured?		Controlled experiment using Wiltbank *et al.* (2009) measures with 14 items (six for predictive logic and eight for non-predictive logic)
	Engel *et al.* (2017)	
Who was measured?		Twenty-eight entrepreneurs with varied backgrounds
What was measured?		Individual decision-making behaviour
How was it measured?		Mixed methods; verbal protocol following the Dew *et al.* (2009a) methodology
	Faiez and Boujelbène (2012)	
Who was measured?		Seven 'effectual' entrepreneurs
What was measured?		Effectual network components
How was it measured?		Surveys
	Futterer, Schmidt and Heidenreich (2018)	
Who was measured?		One hundred and twenty-eight corporate ventures
What was measured?		Individual decision-making behaviour in innovative corporate venturing
How was it measured?		Five-point Likert-scale survey using Brettel *et al.*'s (2012) items
	Gabrielsson and Politis (2011)	
Who was measured?		Two hundred and ninety-one founding chief executive officers (CEOs) in Sweden across different industries
What was measured?		Career motives in individual decision-making behaviour
How was it measured?		Eight-item Likert-scale survey measure
	Galkina and Chetty (2015)	
Who was measured?		Seven cases of Finnish small and medium-sized enterprises (SMEs) aspiring to enter the Russian market.

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What was measured?		Corporate/individual decision-making behaviour when networking during internationalisation
How was it measured?		Qualitative; interview and archival-data multiple case study approach
	Galkina and Lundgren-Henriksson (2017)	
Who was measured?		Three media firms in Finland
What was measured?		Firm-level behaviour in foreign market entry
How was it measured?		Qualitative; longitudinal case studies, based on interviews
	Ghorbel *et al.* (2017)	
Who was measured?		Twelve effectual entrepreneurs
What was measured?		Individual entrepreneurial opportunity based decision-making behaviour
How was it measured?		Cognitive map and Matrix-based Multiplication Applied to a Classification (MICMAC) method
	Guo *et al.* (2016)	
Who was measured?		One hundred and eighteen internet new ventures in China
What was measured?		Individual resource bundling decision-making behaviour for new venture growth
How was it measured?		Likert-scale survey using Chandler *et al.*'s (2011) measures
	Harms and Schiele (2012)	
Who was measured?		Sixty-five finalists of the German "Entrepreneur of the Year" contest in 2010
What was measured?		Individual decision-making behaviour in international entry
How was it measured?		Five-point Likert-scale survey using Chandler *et al.*'s (2011) measure.
	Hayton, Chandler and DeTienne (2011)	
Who was measured?		One hundred and eighty-three firms in the medical devices and electronic measuring devices industry.
What was measured?		Corporate family and non-family decision-making behaviour in new venture creation processes
How was it measured?		Survey using multi-item measures
	Ilonen, Heinonen and Stenholm (2018)	
Who was measured?		Forty-nine student entrepreneurs
What was measured?		Individual decision-making behaviour in new venture creation
How was it measured?		Five-point Likert-scale survey (Chandler *et al.,* 2011)
	Jisr and Maamari (2017)	
Who was measured?		Three hundred and thirty-one employees in Lebanese service firms
What was measured?		Tacit knowledge
How was it measured?		Survey based on items in Durand and Coeurderoy (2001)
	Laskovaia, Shirokova and Morris (2017)	

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Who was measured?		New ventures (3411) in 24 different countries
What was measured?		Firm decision-making behaviour
How was it measured?		Five-point Likert-scale survey (Chandler *et al*., 2011); reduced number of items
	Mainela and Puhakka (2009)	
Who was measured?		Nine international Polish joint venture managers
What was measured?		Individual decision-making behaviour
How was it measured?		Questionnaire
	Mthanti and Urban (2014)	
Who was measured?		Ninety-four senior managers in South African high-technology firms
What was measured?		Individual decision-making behaviour and firm performance
How was it measured?		Seven-point Likert-scale survey (Chandler *et al.,* 2011)
	Murnieks, Haynie, Wiltbank and Harting (2011)	
Who was measured?		Sixty venture capitalists in the United States
What was measured?		Individual decision-making behaviour
How was it measured?		Conjoint analysis of decision-making experiments based on Sarasvathy (2001a, b) and Wiltbank *et al.* (2006)
	Parida, George, Lahti and Wincent (2016)	
Who was measured?		Pilot test with seven academic researchers, six CEOs) and 104 Swedish start-ups
What was measured?		Firm decision-making behaviour in new venture sales
How was it measured?		Seven-point Likert-scale survey (Chandler *et al.,* 2011)
	Politis (2008)	
Who was measured?		Two hundred and thirty-one Swedish entrepreneurs (CEOs) of two-year-old firms (101 novice entrepreneurs and 130 habitual entrepreneurs)
What was measured?		Individual decision-making behaviour
How was it measured?		Four-item effectuation measure based on Sarasvathy (2001a, b) on five-point Likert-scale survey with newly developed measures
	Politis, Winborg, and Dahlstrand (2012)	
Who was measured?		Sixty-five graduate student entrepreneurs and 86 “incubator entrepreneurs” at a university incubator for at least three months; 151 student entrepreneurs; 174 nonstudent entrepreneurs
What was measured?		Resource logic
How was it measured?		Five-point Likert-scale survey
	Politis, Winborg and Dahlstrand (2012)	
Who was measured?		Sixty-five graduate student entrepreneurs and 86 “incubator entrepreneurs” at a university incubator for at least three months; 151 student entrepreneurs and 174 on-student entrepreneurs

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What was measured?		Individual decision-making behaviour
How was it measured?		Five-point Likert-scale survey – newly developed measures
	Qureshi and Mahdi (2014)	
Who was measured?		Sixty-three graduates from a top business school in Pakistan
What was measured?		Individual decision-making behaviour on start-up intention
How was it measured?		Newly developed survey; 11 items based on ideas in Sarasvathy (2001a, b)
	Read, Song, and Smit (2009b)	
Who was measured?		Meta-analysis of 9897 new ventures
What was measured?		Corporate decision-making behaviour on venture performance
How was it measured?		Meta-analysis
	Roach, Ryman and Makani (2016)	
Who was measured?		Senior managers in 169 United States electronic product manufacturing-based SMEs
What was measured?		Corporate decision-making behaviour. Business model innovation decisions
How was it measured?		Survey using newly developed measures with 13 items Effectuation measures adapted from Chandler *et al.* (2011), Brettel *et al.* (2012) and Read *et al.* (2009a, b)
	Smolka *et al.* (2018)	
Who was measured?		1453 student entrepreneurs from 25 countries from Global University Entrepreneurial Spirit Students' Survey (GUESSS) database
What was measured?		Individual decision-making behaviour on venture performance
How was it measured?		Seven-point Likert-scale survey using adapted version of Chandler *et al.*'s (2011) measures
	Shirokova, Osiyevskyy, Morris and Bogatyreva (2017)	
Who was measured?		Student entrepreneurs (2179) from 26 countries using the GUESSS database
What was measured?		Individual decision-making behaviour
How was it measured?		Survey using Chandler *et al.*'s (2011) measures
	Velu and Jacob (2016)	
Who was measured?		Corporate decision-making behaviour. Business model innovation decisions
What was measured?		One hundred and eleven trading platforms that represented the relationships between business owners/managers' business model innovation and competition
How was it measured?		Survey based on level of business model innovation. Loose proxy of entrepreneurs as owner-managers
	Villani *et al.* (2018)	
Who was measured?		Nascent United States entrepreneurs (1214) (PSED II data)

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What was measured?		Individual decision-making behaviour on venture performance
How was it measured?		Survey using new items adopted to follow spirit of Chandler *et al.* (2011)
	Werhahn *et al.* (2015)	
Who was measured?		Four hundred and twenty-one firms from the member register of German Chamber of Commerce and Industry
What was measured?		Individual and corporate decision-making behaviour as strategic direction
How was it measured?		Eighteen items seven-point Likert-scale survey using newly developed measures
	Wiltbank, Read, Dew and Sarasvathy (2009)	
Who was measured?		One hundred and twenty-one business angel investors (1038 total new venture investments)
What was measured?		Individual decision-making control behaviour on new venture investment performance
How was it measured?		Fourteen-item seven-point Likert-scale survey built around an entrepreneurial scenario

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9.2 APPENDIX B: CONSENT FORM

Dear participant

The FPI in conjunction with the University of Pretoria's Faculty of Economic and Management Sciences is conducting research to assess the impact of effectually co-creating new markets and opportunities in unpredictable contexts among professional financial planners (seen as expert corporate entrepreneurs). This research specifically targets professional financial planners with 10 or more years practice in the financial services industry experience and that have founded at least one practice.

For the purpose of this study:

- **Effectuation theory explains that in uncertain contexts with no specific goals, entrepreneurs create networks that expand their resources and converge constraints to create new markets.**
- **Markets include elements of demand, supply and institutions that are custodians of industry practices.**
- **Co-created opportunities are developed through newly (re)formed markets together with co-created value propositions.**
- **Co-creation are interactive processes between willing resource integrators that mutually create value through collaboration.**
- **Opportunities are market imperfections.**

Please note the following:

- This is an anonymous electronic survey as your name will not appear on the questionnaire. The answers you give will be treated as strictly confidential as you cannot be identified in person based on the answers you give.
- Your participation in this study is very important to us. You may, however, choose not to participate and you may also stop participating at any time without any negative consequences.
- Please answer the questions in the attached questionnaire as completely and honestly as possible. This should not take more than 10 minutes of your time.
- The results of the study will be used for academic purposes only and may be published in an academic journal. We will provide you with a summary of our findings on request.

Please contact my study leader, Professor J. van Vuuren on 083 271 0020 or jurie.vanvuuren@up.ac.za if you have any questions or comments regarding the study.

In research of this nature the study leader may wish to contact respondents to verify the authenticity of data gathered by the researcher. It is understood that any personal contact details that may be provided will be used only for this purpose, and will not compromise your anonymity or the confidentiality of your participation.

If you have any further comments, you can contact Mr. S. Adam (96273055) on Cell: 082 828 7742 or email: shahed.adam@vodamail.co.za.

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9.3 APPENDIX C: RESEARCH INSTRUMENTS

QUESTIONNAIRE

This questionnaire is designed to obtain feedback from you on your behaviours when creating a market and opportunities for your practice. The results from this survey will be used to determine whether professional financial planners effectually co-create new markets and opportunities to co-create growth for their practices. Markets include elements of demand, supply and institutions that are custodians of industry practices. Opportunities are market imperfections. Co-created growth will be determined through growth in your client base, strategic partnerships, revenues, assets under management and staff.

Taking part in this survey is completely voluntary and anonymous. The questionnaire consists of eight (8) sections. The total questionnaire should take no more than 10 minutes of your time. Your co-operation is appreciated.

When evaluating a question, please answer the question from your own perspective.
Place tick the appropriate box/circle where applicable or complete where required.

Thank you for taking the time to complete this survey. Should you have any questions, please feel free to contact:

Shahed Adam: 082 828 7742 or Shahed.adam@vodamail.co.za.

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SECTION A: SCREENING QUESTIONS

1. I give my consent to participate in the study on a voluntary basis.

   If yes please continue, if no, thank you for your willingness to participate.

Yes	
No	

2. By completing this questionnaire, you give consent that your responses can be used for academic purposes?

   If yes please continue, if no, thank you for your willingness to participate.

Yes	
No	

3. Are you a professional financial planner in the life assurance industry?

   If yes please continue, if no, thank you for your willingness to participate.

Yes	
No	

4. Have you founded at least one financial planning practice in the life assurance industry?

Yes	
No	

SECTION B: BIOGRAPHICAL DETAILS

1. What is your gender?

G1	Male	
G2	Female	

2. What is your age?

A1	Younger than 30 years	
A2	30 years or older but younger than 40 years	
A3	40 years or older but younger than 50 years	
A4	50 years or older but younger than 60 years	
A5	60 years or older	

3. What is your home language?

L1	Afrikaans	
L2	English	
L3	Nguni (Zulu, Xhosa, Swati, Ndebele)	
L4	Sotho (Sepedi, SeSotho, Tswana)	
L5	Venda/ Isonga	
L6	Other, please specify	

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5. What is your highest level of education?

E1	Never matriculated	
E2	Matric certificate	
E3	Diploma	
E4	Bachelor's degree	
E5	Post graduate degree	
E6	Professional qualification	

6. What is your marital status?

M1	Single	
M2	Married	
M3	Widowed	
M4	Divorced	
M5	Separated	
M6	Domestic partnership	

7. How many years have you been practicing as a professional financial planner in the life assurance industry?

P1	___ Yrs.

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SECTION C: EFFECTUATOR (THE EXPERT CORPORATE ENTREPRENEUR)

On a scale of 1 to 5 where 1 = Strongly Disagree, 2 = Disagree, 3 = Neither Disagree nor Agree, 4 = Agree and 5 = Strongly Agree, please indicate the extent to which you agree with each of the following statements.

		 Strongly Disagree Strongly Agree				
EN1	I considered who I am, what I know well and who I know when co-creating a market for my practice.	1	2	3	4	5
EN2	My friends, family or other contacts from my personal or professional networks are strategic and pre-commit resources to my practice that I would otherwise have to pay for when co-creating a market for my practice.	1	2	3	4	5
EN3	I am careful not to commit more time, effort or money than I could afford to lose, when co-creating a market for my practice.	1	2	3	4	5
EN4	When co-creating a market for my practice, unpredictable challenges are expected. I exploit these contingencies through experimentation and by being flexible.	1	2	3	4	5
EN5	I use my professional body for assistance in co-creating a market for my practice.	1	2	3	4	5
EN6	I prefer to be in control when the future is unpredictable.	1	2	3	4	5

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SECTION D: NEW MARKETS (EXPANDING RESOURCES AND CONVERGING CONSTRAINTS)

On a scale of 1 to 5 where 1 = Strongly Disagree, 2 = Disagree, 3 = Neither Disagree nor Agree, 4 = Agree and 5 = Strongly Agree, please indicate the extent to which you agree with each of the following statements.

		 Strongly Disagree Strongly Agree				
NM1	I use my personal network to expand my resources (new clients, technology, investments or expertise) to co-create new markets for my practice.	1	2	3	4	5
NM2	My personal network creates converging constraints (conditions, expectations or commitments) that forces me to co-develop goals with them.	1	2	3	4	5
NM3	I use my expanding resources (new clients, technology, investments or expertise) and converging constraints (conditions, expectations or commitments) from my personal network to co-create new markets for my practice.	1	2	3	4	5
NM4	I use my professional body to help expand my resources (new clients, technology, investments or expertise) to co-create new markets for my practice.	1	2	3	4	5
NM5	My professional body creates constraints (conditions, expectations or commitments) that forces me to co-develop goals with them.	1	2	3	4	5
NM6	I use my expanding resources (new clients, technology, investments or expertise) and converging constraints (conditions, expectations or goals) from my professional body to co-create new markets for my practice.	1	2	3	4	5

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SECTION E: CO-CREATED VALUE PROPOSITIONS

On a scale of 1 to 5 where 1 = Strongly Disagree, 2 = Disagree, 3 = Neither Disagree or Agree, 4 = Agree and 5 = Strongly Agree, please indicate the extent to which you agree with each of the following statements.

When creating my value proposition, I engage with partners in my personal and professional network to:		 Strongly Disagree Strongly Agree				
VP1	Consider how they want to experience the value my services or solutions will create for them.	1	2	3	4	5
VP2	Determine what is the value that any quality aspects of my services or solutions will create for them.	1	2	3	4	5
VP3	Determine what is the value that any innovative features of my services or solutions will create for them.	1	2	3	4	5
VP4	Determine what is the value that any of their personal preferences for my services or solutions will create for them.	1	2	3	4	5
VP5	Determine whether the value my services or solutions will create for them is priced reasonably and affordably.	1	2	3	4	5
VP6	Determine what are the mutual benefits that my value proposition will be created for all parties involved.	1	2	3	4	5
VP7	Determine what will create a hassle-free value exchange.	1	2	3	4	5

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SECTION F: CO-CREATED OPPORTUNITIES

On a scale of 1 to 5 where 1 = Strongly Disagree, 2 = Disagree, 3 = Neither Disagree or Agree, 4 = Agree and 5 = Strongly Agree, please indicate the extent to which you agree with each of the following statements.

		 Strongly Disagree Strongly Agree				
COP1	I *first* co-create a market before co-creating an opportunity for my practice.	1	2	3	4	5
COP2	I *first* co-create an opportunity before co-creating a market for my practice.	1	2	3	4	5
COP3	The value that my services and solutions create, is determined in a particular context.	1	2	3	4	5
COP4	The value that my service and solutions create, is derived from my clients' experiences of my service and solutions.	1	2	3	4	5
COP5	I use electronic media when co-creating opportunities.	1	2	3	4	5
COP6	I prefer face to face interactions when co-creating opportunities.	1	2	3	4	5

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SECTION G: CO-CREATED MARKETS AND OPPORTUNITIES

On a scale of 1 to 5 where 1 = Strongly Disagree, 2 = Disagree, 3 = Neither Disagree or Agree, 4 = Agree and 5 = Strongly Agree, please indicate the extent to which you agree with each of the following statements.

		Strongly Disagree → Strongly Agree				
COMO1	I use my networks' expanded resources (new clients, technology, investments or expertise) to co-create new markets for my practice.	1	2	3	4	5
COMO2	I use my networks' converging constraints (conditions, expectations and goals) to co-create new markets for my practice.	1	2	3	4	5
COMO3	I develop my value proposition by determining the value that will be created when my clients experience my services and solutions.	1	2	3	4	5
COMO4	I develop my value proposition by considering the context within which that value will be created.	1	2	3	4	5
COMO5	I co-create new opportunities through co-creating new markets and value propositions.	1	2	3	4	5
COMO6	Co-creating markets and opportunities grows my practice.	1	2	3	4	5

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SECTION H: CO-CREATED FIRM GROWTH MEASURES

Please share the effect that co-creating markets and opportunities have had on your practice over the last 2 years. Your responses are anonymous and will be kept confidential.

		2 yrs. ago	Currently
S1	Size of your client base		
S2	Number of strategic partnerships		
S3	Net commission (Rs)		
S4	Value of assets under management (Rs)		
S5	Number of Representatives (Reps) on your licence		
S6	Number of back-office staff		

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10 ABBREVIATIONS AND ACRONYMS

Table 100: Abbreviations Used in This Document

Abbreviation	Meaning
AGFI	Adjusted Goodness of Fit
CE	Corporate Entrepreneurship
CFA	Confirmatory Factor Analysis
CB-SEM	Covariance-Based Structural Equation Modelling
CEO	Chief Executive Officer
CFI	Comparative Fit Index
CFP®	Certified Financial Planner
CMIN/df	Chi-Square/Degrees of Freedom
CR	Critical Ratio
df	Degrees of Freedom
EFA	Exploratory Factor Analysis
EO	Entrepreneurial Orientation
FPI	Financial Planning Institute
FSCA	Financial Sector Conduct Authority
GFI	Goodness of Fit Index
GOF	Goodness of Fit
GUESSS	Global University Entrepreneurial Spirit Students' Survey
IFSB	International Financial Planning Standards Board Ltd
KMO	Kaiser-Meyer-Olkin
MICMAC	Matrix-based Multiplication Applied to a Classification
MDRT	Million Dollar Round Table
NFI	Normed Fit Index
PCA	Principal Components Analysis
R&D	Research and Development
RMSEA	Root Mean Square Error of Approximation
SE	Standard Error
SME	Small and Medium-sized Enterprise

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ViU	Value-in-Use
$\chi 2$	Chi-square

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