The Relationship between Business Incubator Services and the Psychological Capital of Tenants

Alison Ollerenshaw

BA, GradDipAppSci (Prof Psych), MAppSci.

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Centre for eResearch and Digital Innovation

School of Health and Life Sciences

Federation University Australia

PO Box 663

University Drive, Mt Helen, Ballarat VIC 3350

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Statement of Authorship and Originality

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Student:

Date: 31 December 2019

Supervisor:

Date: 31 December 2019

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Abstract

Business incubators (BI) provide a supportive environment for new tenant businesses to grow to independence. Incubators offer characteristic services including (a) space, physical resources, and infrastructure; (b) business support services, (c) networking; and, (d) structured selection, entry, and exit. Despite the global growth in incubator facilities, complemented by extensive research, knowledge gaps remain. Little research has examined the relationship between the characteristic services at incubators and tenants' psychological capital; a higher-order construct representing an individual's positive psychological state of development that includes hope, efficacy, resilience, and optimism. Preliminary examination of the characteristic services at business incubators show analogies with interventions for developing psychological capital. Two research studies were designed to examine these relationships. In the first study, survey ($n = 30$) and interview data ($n = 12$) were collected from incubator tenants to examine the existence of a relationship between the four characteristic services at business incubators and tenants' psychological capital, their hope, efficacy, resilience, and optimism. The survey data confirmed the existence of a relationship between three incubator services – space, physical resources, and infrastructure, business support services, and networking – and tenants' psychological capital. Tenants' narrative experiences confirmed that these same three incubator services support tenants' hope, efficacy, resilience, and optimism. This finding implies that the three incubator services contribute to, and augment tenants' positive psychological states, which is then manifest in their positive behaviours and attitudes towards their business. To further elucidate these relationships a second study was conducted. Data from surveys ($n = 75$) and interviews ($n = 28$) with incubators managers also confirmed that space, physical resources, and infrastructure, business support services, and networking were analogous with methods that support tenants' hope, efficacy, resilience, and optimism. These findings infer that incubator

managers are not only instrumental in delivering these three characteristic services at incubators but are integral in optimising these services to benefit tenants' hope, efficacy, resilience, and optimism. This current research provides robust evidence that three characteristic services at incubators are associated with tenants' psychological capital, hope, efficacy, resilience, and optimism. These research findings are novel, and the implications for the incubator industry wide-ranging, with evidence indicating that the three characteristic services at incubators are analogous with interventions that support tenants' psychological capital, and that incubator staff are integral to the delivery of these characteristic services. New directions for the incubator industry are proposed that include establishing a consistent approach to delivering the characteristic services at incubators that support incubator tenants' businesses, and their positive psychological development.

Chapter 1: Introduction

1.1 Overview

The concept of psychological capital has received considerable research attention, particularly over the last two decades, exemplifying the new wave of interest in positive psychology (F. Luthans, Youssef-Morgan, & Avolio, 2015). Defined as "one's positive appraisal of circumstances and probability for success based on motivated effort and perseverance" (F. Luthans, Avolio, Avey, & Norman, 2007, p. 550), psychological capital enables individuals to focus on their goals, despite challenges, and to view their objectives in a positive light, while staying focused despite set-backs.

Psychological capital examines "who you are" and "who you are becoming" (F. Luthans, Avey, Avolio, Norman, & Combs, 2006, p. 388) by focusing on the individual and their outputs (Lorenz, Beer, Putz, & Heinitz, 2016). It encapsulates developing the best that an individual can be, by drawing upon positive, internal resources that can be used and adapted to enable success (F. Luthans, Avey, Avolio, & Peterson, 2010; F. Luthans, Luthans, & Luthans, 2004; F. Luthans, Youssef, & Avolio, 2007).

Established from a strong theoretical foundation, and supported by rigorous and robust research, psychological capital represents the synergy between the four core positive constructs of hope, efficacy, resilience, and optimism (F. Luthans et al., 2015). Together, they comprise the resources that foster and support psychological capital and the control, approach, and pursuit towards goals (F. Luthans & Youssef-Morgan, 2017). As a measurable and malleable higher order construct, psychological captial manifests in wide-ranging ways, to positive effect (F. Luthans et al., 2015). Much of the foundational research into this construct has been contextualised to workers in organisational settings. This reflects the lens through which psychological capital has been focused: on organisational psychology, within the scope of positive organisational scholarship.

The extensive body of published research offers compelling evidence for the relationship between psychological capital and desirable workplace behaviours and attitudes (e.g., F. Luthans, 2012; Memili, Welsh, & Luthans, 2013; S.J. Peterson, Luthans, Avolio, Walumbwa, & Zhang, 2011). Such evidence further elevates interest in this construct, and in fostering an individual's state of positive psychological growth and optimal human functioning, for personal and organisational development, gain and success (F. Luthans & Youssef-Morgan, 2017).

Psychological capital has been widely examined within the organisational context. The powerful, protective qualities of this construct on individuals has led to its examination and application in other settings (e.g., Çimen & Özgan, 2018; Datu, King, & Valdez, 2016; Nielsen, Newman, Smyth, Hirst, & Heileman, 2017; Rew, Powell, Brown, Becker, & Slesnick, 2017) with the evidence continuing to indicate the positive impacts of psychological captital across different populations and contexts. This work offers extended evidence of the importance that this pervasive, positive construct has on broader wellbeing in other important life domains.

Although the application of psychological capital within different contexts and population cohorts is developing, this remains an area that is open to further exploration. One area in which there is an emerging body of evidence is in the application of psychological capital in examining entrepreneurs and understanding their intentions towards their business, and associated outcomes (e.g.,Contreras, de Dreu, & Espinosa, 2017; Hasan, Hatidja, Nurjanna Guampe, & Gempita, 2019; Jensen & Luthans, 2006). Overall however, there is a dearth of research examining this concept within settings that have been established to accommodate and support new businesses, and entrepreneurs. One of the most dominant, and globally widespread of these settings is business incuabtors. Business incubators are facilities where entrepreneurs and new business owners are supported in their early stages of

development with the aim of fostering business growth and independence, and driving regional economic development.

The growth in business incuabtors reflects the wide interest and importance of these facilities. In these envrionments, where the interrelationship between individual goals, professional development, and business targets are critical for optimal personal and professional outcomes, developing an understanding of their impact on the psychological capital of tenants[1] in these facilities is imperative. An examination of psychological capital among nascent businesses and entrepreneurs within business incubators provides a new lens from which to examine this important construct. Such an examination is critical to gaining a unique understanding of the manifestation of psychological capital for business owners and entrepreneurs in these structured and supportive envrionments.

1.2 Business Incubators

Entrepreneurs and small business owners experience a range of challenges as they establish new enterprises. These include contextual and situational factors (Zahra, Wright, & Abdelgawad, 2014), influenced by the entrepreneur's personal experiences, skill set, and circumstances (Lamine, Mian, & Fayolle, 2014; Mazzarol, Volery, Doss, & Thein, 2014; Miller & Le Breton-Miller, 2017; Soetanto, 2017). Business incubators are facilities that address the needs of nascent businesses, supporting their growth within a safe, protected environment that fosters business independence and self-sustainability (Aernoudt, 2004; Bliemel, Flores, Hamilius, & Gomes, 2014; Robinson & Stubberud, 2014).

While there are a multitude of definitions for business incubators, none has been universally accepted, in part due to the breadth of research incorporating a broad set of

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[1] For this research, participants of business incubator programs are referred to as "tenants". The term tenants, within the incubator context, refers to participants of business incubator programmes, including new business owners, entrepreneurs and the like. In the USA, tenants are often referred to as 'incubatees'.

incubator concepts, qualities, and features (Hausberg & Korreck, 2018). A recent systematic

literature review (Hausberg & Korreck, 2018) provides two definitions encompassing both a

broad and a specific description. Broadly, "business incubating-organisations" are those

facilities that support new business growth as its central purpose (Hausberg & Korreck,

2018). Specifically, business incubators "are business-incubating organizations that support

the establishment and growth of new businesses with tangible (e.g. space, shared equipment,

and administrative services) and intangible (e.g. knowledge, network access) resources

during a flexible period and are funded by a sponsor (e.g. government or corporation), and/or

fund themselves taking rent (or less frequently equity) from incubatees" (Hausberg &

Korreck, 2018, p. 13).

Consistent with this understanding of incubators is the International Business

Innovation Association; the peak global network of incubators, accelerators, and other

enterepreneurship centres. It describes incubator programmes as the exchange of membership

fees for physical space (office/desk); where tenants usually apply to join the incubator and

abide by the policies set forth by the incubator which usually comprise agreed goals with

timely graduation from the incubator (up to three years) (International Business Innovation

Association, 2017). Importantly, incubator tenants receive a programme of services that

ususally includes "mentoring, education/training, and informal learning opportunities.

Incubators also host events to provide networking and learning opportunities for both

member companies and the local community" (International Business Innovation

Association, 2017, p. 1).

Established in the USA during the late 1950s, business incubators emerged during an

era of revival for new ideas and innovation (Shepard, 2013). The first generation of business

incubators offered shared, low-cost office space for new businesses. Tenants at incubators

benefitted from "economies of scale" having access to physical infrastructure (e.g., meeting

rooms; car parking) while sharing overhead costs (Bruneel, Ratinho, Clarysse, & Groen, 2012, p. 111).

The range of services offered at business incubators has expanded over time as is evident with the introduction of new operational structures and services during the second (1980s and 1990s) and third (since 2000) incubator generations (Shepard, 2013). These standardised systems for operation, and for tenant support, comprised the appointment of executive and advisory boards, operational managers, and staff and various business services such as coaching and mentoring (Bruneel et al., 2012; Shepard, 2013).

Many business incubators today have adopted collaborative models of operation. Partnerships now exist between incubators and the private and public sectors, and with governments and universities (McAdam, Miller, & McAdam, 2016). In the USA, most incubators are either mixed-use incubators or technology-focused incubators (National Business Incubation Association, 2015a; Shepard, 2013), and most operate as not-for-profit entities (Tavoletti, 2013).

It is estimated that there are around 7000 incubators worldwide (National Business Incubation Association, 2015a) most of which are firmly established throughout the western world, especially in the USA and Europe. They are however also being established in new, growth economies (Owusu-Manu, Afrane, Badu, Edwards, & Brown, 2013; Setyawan & Suyundi, 2014; Tang, Baskaran, Pancholi, & Lu, 2013) having become an accepted mechanism for supporting regional and economic development, with wide ranging objectives. These include entrepreneurship growth, increased jobs, wealth and income creation, regional knowledge expansion, skills creation, and network building (Ayatse, Kwahar, & Iyorsuun, 2017; Fernandez Fernandez, Blanco Jiménez, & Cuadrado Roura, 2015; Isabelle, 2013; National Business Incubation Association, 2015b; Tang et al., 2013; Tavoletti, 2013).

Emerging from the traditional incubator model are newer organisational forms for supporting entrepreneurship including virtual incubators, online matching platforms, makerspaces, seed accelerators, and super hubs (e.g., International Business Innovation Association, 2017; Webb, 2016). Innovation, and the constant wave of new technologies and trends represent a significant change and direction for start-up businesses; this requires the incubator industry to respond to these substantive changes to ensure ongoing support for businesses within these off-shoot, incubator facilities (Galbraith, McAdam, & Edward Cross, 2019).

Despite the increasing variety and type of incubator models, the provision of services to support tenants at incubators continue to be a unique and enduring legacy intended to foster and accelerate entrepreneurs within an "entrepreneurial culture" (Ayatse et al., 2017, p. 3; Redondo-Carretero & Camarero-Izquierdo, 2017) comprising a "collegial climate" (Al-Mubaraki & Busler, 2010, p. 2). Furthermore, these services are considered critical to the early development of businesses, increasing their chances of long-term business survival (Bergek & Norrman, 2008; Robinson & Stubberud, 2014; Tavoletti, 2013) at a time when businesses are most vulnerable and apt to fail (Apa, Grandinetti, & Sedita, 2017).

1.3 Business Incubator Services

Research has identified that incubators offer a vast array of services (e.g., Al-Mubaraki & Busler, 2010; Bruneel et al., 2012) but that a core set of characteristic services are widely available at most business incubators. These include infrastructure and physical resources, low cost rental, business support services, and access to networks and networking (Bruneel et al., 2012; Rubin, Aas, & Stead, 2015). It is these services that are considered to be a unique feature of incubators: "…the distinctive features of incubation are a very mixed revenue stream, strong encouragement of peer-to-peer networking, addressing multiple needs

of new ventures without prioritising just one, and offering continual exposure to the

incubation environment and services" (Dee, Livesey, Gill, & Minshall, 2011, p. 12).

These characteristic services not only contribute to the incubator tenants' experiences,

but buffers them from the challenges that can often disrupt new and small business

development (Roseira, Ramos, Maia, & Henneberg, 2014). The incubator thus complements

the skills and assets that tenant-entrepreneurs already possess (van Weele, van Rijnsoever, &

Nauta, 2017). Utilising the support dimensions available at incubators offers multiple benefits

for tenants by increasing business survival, enabling financial growth, establishing new

employment opportunities, and building networks (Ayatse et al., 2017). The provision of

services for tenants is thus a core feature of these facilities. It has been proposed that the

contribution of these services is influenced by their value-add with value emanating from the

service provision (innovation/knowledge-based), the methods used, the facilitation of these

services (such as networking) within the incubator, and the relationship that the incubator has

to its immediate environment and broader region (Fernandez Fernandez et al., 2015).

An industry report emanating from the USA suggests the following services influence

the performance of tenants at incubators: (a) training; (b) facilitating opportunities for

investment; (c) developing partnerships with local universities; (d) support and assistance

with production and development; and, (e) the provision of mentoring (Lewis, Harper-

Anderson, & Molnar, 2011). Integral to the successful implementation of many of these

services are incubator managers (Lewis et al., 2011).

Four services (to be henceforth referred to as the "characteristic services" of business

incubators) have been widely examined in the research and represent the "supply side of

business incubation" (Bruneel et al., 2012, p. 114) with these services having been developed

over time. The four characteristic services within incubators are (a) space, physical resources,

and infrastructure; (b) business support services; (c) networking; and, (d) structured selection, entry, and exit.

1.3.1 Space, Physical Resources, and Infrastructure

The physical amenities available to tenants are an essential feature of incubators. The provision of a desk and office space was introduced during the first generation of incubators (Ratinho, Harms, & Groen, 2013; Theodorakopoulos, Kakabadse, & McGowan, 2014) and are frequently complemented by adjunct services that includes administrative support, access to meeting rooms, car parking, and internet access (Al-Mubaraki & Busler, 2010; Ratinho et al., 2013). Traditionally, incubators offer low-cost rent or leasing arrangements for tenants, thus reducing their financial overheads while simultaneously accessing the physical resources necessary to support and enable new businesses to grow (Bruneel et al., 2012; Hackett & Dilts, 2004).

Studies have shown that the incubator amenities are beneficial to tenant-businesses. The "sharing of localities" at incubators is both important and advantageous for tenants, reducing their financial overheads through a shared model of resources which facilitates knowledge exchange and experience between tenants (Bergek & Norrman, 2008, p. 21). Research also provides evidence that incubators engender tenants with greater legitimacy in their own business as its grows and gains market recognition (Monsson & Jørgensen, 2016). Access to office space and reduced costs are also highly influential for tenants as they establish and grow their business, providing a key incentive for moving businesses to an incubator (Kemp, 2013). Affordable space and the facilities at incubators are perceived by tenants to be both important and effective services relating to the incubator (Abduh, D'Souza, Quasi, & Burley, 2007).

The physical location of an incubator offers additional benefits to tenants. Proximity of the incubator to the tenants' homes and to other business related services is important

(Kemp, 2013). The convenience and location of the incubator to public infrastructure (roads; airports) is another advantage identified by tenants when establishing themselves at an incubator (Burnett, 2009).

1.3.2 Business Support Services

Business support services were introduced during recent incubator generations (Bøllingtoft, 2012; Hackett & Dilts, 2004) and describe the delivery of business support, expertise, and business development practices for tenants, exemplified through activities such as mentoring, coaching, and training (e.g., Bacalan et al., 2019; Ratinho et al., 2013). It can include specialised services considered vital for business success such as marketing, accounting, and financial support (Lewis et al., 2011), and the provision of related information and advice pertaining to research and development, funding, and networking (Theodorakopoulos et al., 2014).

The demand and provision of services available at incubators is influenced by the needs of tenants within these facilities (Al-Mubaraki & Busler, 2010). Research evidence collected from incubator managers suggests that incubators offer an extensive range of business activities to meet the needs of tenants (Al-Mubaraki & Busler, 2010). Business marketing, help with business, developing connections with strategic partners, and networking were found to be services in high demand by incubator tenants (Al-Mubaraki & Busler, 2010).

Furthermore, business support has been found to necessitate "knowledge-sharing", for business development, and financial advice (Robinson & Stubberud, 2014). Business assistance and advice also contributes to tenants' business and revenue growth, raising financial capital, and forming connections (Ayatse et al., 2017). Both general and specific types of business support services have a positive influence for tenants, increasing opportunities for knowledge gain and guidance in both practical matters and complex,

strategic matters (Monsson & Jørgensen, 2016). In technology-focused incubators, the

provision of information about the market was considered integral to the support for tenants

in their early stages of development (Rubin et al., 2015).

Research identifies that tenants place great importance on the business assistance they

receive at the business incubator, suggesting that this contributes to their business growth

(Kemp, 2013). The role of the business incubator manager in building the business

knowledge and optimising business outputs is highly valued by incubator tenants (Kemp,

2013), with the quality and delivery of the assistance provided to tenants influenced by the

attributes and leadership styles of incubator managers (A. J. Ahmad & Thornberry, 2018).

1.3.3 Networking

Networking is a core characteristic of business incubation (Bergek & Norrman, 2008;

Monsson & Jørgensen, 2016; Shepard, 2013). The provision of networking opportunities for

tenants within, and external to the business incubator develops tenant expertise and provides

exposure to business support and activities (Bergek & Norrman, 2008; Bøllingtoft, 2012;

Hackett & Dilts, 2004; Peters, Rice, & Sundararajan, 2004). Networking also extends to the

collaborations of key partners, such as tertiary institutions (Lewis et al., 2011). Having a

competent business incubator manager can assist with building the networking relationships

between tenants, which also contributes positively to the success of business incubators

(Theodorakopoulos et al., 2014). Incubator managers are important in directing and fostering

the interactions between tenants particularly as the proximity between tenants at incubators

does not guarantee that potential connections will occur (Redondo-Carretero & Camarero-

Izquierdo, 2017). When connections and networking between tenants are established the

research evidence suggests that this is beneficial for tenants.

Networking facilitates knowledge generation for new businesses (Bruneel et al., 2012;

Fang, Tsia, & Lin, 2010; Pettersen, Aarstad, Høvig, & Tobiassen, 2016; Rubin et al., 2015;

Zhang, Wu, & Zhoa, 2016), providing tenants with access to new ideas and resources, enhancing credibility and reputation, and facilitating knowledge exchange (Roseira et al., 2014; Schwartz & Hornych, 2010). The direct and indirect networking between tenants offers unique benefits relating to business operations that is highly valued by tenants during the early stages of business formation (Rubin et al., 2015). Networking has also been found to enhance tenants' social capital (Scillitoe & Chakrabarti, 2005) and to develop their capabilities in specific fields leading to enhanced tenant satisfaction with the incubator (Fang et al., 2010). Furthermore, networking is another popular reason why tenants move to an incubator, mitigating feelings of isolation for tenants who had previously been operating their business from home (Burnett, 2009).

Internal networking of tenants within incubators, sometimes referred to as peer-to-peer networks (Dee et al., 2011), offers many benefits. It represents one of the most common forms of interaction for tenants and contributes valuable knowledge flow (Schwartz & Hornych, 2010), including shared knowledge about the general business experiences of tenants and their key business milestones (Pettersen et al., 2016). Friendship, solidarity, personal attention, and trust are important factors when establishing the immediate and longer term relationships between tenants (Redondo-Carretero & Camarero-Izquierdo, 2017). Peer-to-peer networking can also be enhanced by the physical space at the incubator, in which communal spaces encourage tenants to connect with one another (Dee et al., 2011).

External networking for tenants with organisations and associations outside the incubator has been found to be useful in providing tenants with additional information and essential sources of knowledge (Pettersen et al., 2016), and in facilitating access to resources (Ayatse et al., 2017; Petrucci, 2018). "Network mediation" – connecting tenants with others both internal and external to the incubator – can bridge the knowledge gaps of tenants as they establish their new venture (Bergek & Norrman, 2008).

1.3.4 Structured Selection, Entry, and Exit

Operational policies around tenant selection, entry into the incubator, and exit from the incubator – including tenant graduation from the incubator – are key contributors to the success of business incubators (Bergek & Norrman, 2008; Hackett & Dilts, 2004; Theodorakopoulos et al., 2014). Such processes facilitate the timely graduation of tenants from business incubators, and maximises the likelihood that tenants will fully utilise the business support services available at the incubator (Bruneel et al., 2012). This service entails the screening and selection of tenants prior to their admittance to the business incubator, and usually involves an agreement outlining the duration that tenants can remain within the business incubator (Bøllingtoft, 2012). Selection of tenants joining an incubator is a core component associated with the business incubation model (Bergek & Norrman, 2008, p. 23).

Studies show that successful business incubators are those where tenants have been selected based on their "cultural homogeneity" – their cultural fit to the incubator environment and its tenants – within the facility, and of their chances of business success (Lewis et al., 2011). Selecting tenant-businesses with a natural "fit" to the local region is also expected to contribute to the regional economy, over time (Tavoletti, 2013). It has been proposed that when the objectives of the tenants and the incubator are compatible, higher rates of tenant-graduations occur (Peters et al., 2004). The process of selecting tenants to join incubators ensures that the services available at incubators meets the requirements of its tenants (Dee et al., 2011).

Exiting or graduating tenant-businesses from the incubator is another important operational process that facilitates ongoing tenancy opportunities for new businesses, once existing tenanted businesses leave the incubator (Dee et al., 2011). Studies have shown that prolonged tenancy beyond the time stipulated for graduation can jeopardise business survival when tenant-businesses leave the incubator (Ayatse et al., 2017). Furthermore, extending

tenancy to businesses once they have reached their maximum potential and business maturity can lead to their over reliance on the incubator and an inability to acknowledge their achievements (Guceri-Ucar & Koch, 2016). Tenant/business performance reviews conducted at incubators may also inform tenant graduation, or prompt the premature exiting of tenants from an incubator when performance measures are not met (Dee et al., 2011; Peters et al., 2004).

Selection and exit is akin to a "management tool" that optimises the chances of success of both the incubator, and the tenants' business. It can be used to tailor services available to tenants which increases the chances of tenants using them, while also graduating from the incubator in a timely manner. Traditionally, the impact or role of selection and exit is not examined in relation to tenant value but rather, is used to gauge an incubator's value as an outcome measure of an incubator's success (Ayatse et al., 2017). Despite this, structured selection, entry, and exit is an important feature of incubators with the research evidence discussed above highlighting that this service assists tenants to utilise the other key incubator services, ensuring their timely graduation.

In summary, an analysis of the available literature has shown that the characteristic services at incubators differentiate them from other entrepreneurship centres. Although the four services described do not capture the extensive range of services across all incubators, they encapsulate the characteristic elements available at most incubators which have been consistently identified by peak incubator and research organisations (e.g., International Business Innovation Association, 2017; UBI-Global, 2019; United Kingdom Science Park Association, 2015). These services have been extensively researched and identified as supporting tenants to enhance their knowledge, skills, and behaviours towards their business in positive ways. Managers are employed to operationalise business incubators, providing protocols for the selection (and exiting) of tenants, and sharing their business knowledge with

tenants (Bruneel et al., 2012; Shepard, 2013). Evidence shows business managers are broadly influential in the delivery of the characteristic services at incubators.

1.4 Incubator Managers and the Delivery of Characteristic Services at Incubators

Managers at business incubators play a critical role in operationalising incubators and driving the provision and quality of incubator services for tenants (e.g., Redondo & Camarero, 2017). Studies have consistently demonstrated that incubator managers support tenants by, for example, fostering the interactions between tenants (e.g., Redondo-Carretero & Camarero-Izquierdo, 2017), facilitating networking opportunities between tenants (e.g., Apa et al., 2017; Tottenham & Sten, 2005), providing advice (e.g., Monsson & Jørgensen, 2016), and generating new knowledge for tenants (e.g., Bruneel et al., 2012). A competent incubator manager can facilitate tenant relationships and contribute positively to the success of business incubators (Theodorakopoulos et al., 2014).

Incubator managers play an essential role in the successful implementation of services offered to tenants at incubators (Lewis et al., 2011). Researchers have recommended that the scope of their role should include (a) selecting suitable tenants to the incubator; (b) determining the duration for which tenants can remain within an incubator programme; and, (c) regularly monitoring the financial and related activities within an incubator (Lewis et al., 2011, p. 12).

The published research indicates that the role of managers also extends to the delivery of many of the characteristic incubator services, and the quality of support provided to tenants. For example, incubator managers influence the delivery of networking; a core characteristic service offered at incubators. Studies have shown that incubator managers act as intermediaries in building tenant networks: They provide a crucial, dual role in fostering business and social networks at incubators, they assist with mediating tenant relationships, and validating tenants-own business through association with the incubator and its reputation

(Apa et al., 2017). Incubator managers are influential in developing and building strong relationships with their tenants (A. J. Ahmad, 2014), ensuring that knowledge and information can be effectively imparted. Evidence suggests that building social relationships amongst tenants can be facilitated through management-organised events that enable tenants to share knowledge and is considered effective for tenants when building business relationships (Apa et al., 2017). Incubator managers are also integral in the formation and nurturing of collaborations both within and external to the incubator, enhancing business connections for tenants and between tenants (Apa et al., 2017; Meyer, Meyer, & Kot, 2016; Tottenham & Sten, 2005).

Studies show that managers influence both the delivery of other core incubator services, and the quality of the services being delivered. Managers can greatly enhance the business services offered to tenants through the frequency of counselling "interactions" between the incubator manager and the tenant (Scillitoe & Chakrabarti, 2010). In the Scillitoe and Chakrabarti study, counselling refers to the direct interaction that occurs between the incubator manager and the tenant/new business, providing assistance through the sharing of knowledge and resources between the two parties. Their research identified that the frequency of interactions between tenant and manager enables managers to better understand and identify the business needs and assistance required by tenant-businesses.

The role of managers in delivering business services has been assessed as having a positive influence on tenants. Kemp (2013) identified business incubator managers as being integral to building tenant's business knowledge and in facilitating optimal business outputs while also being highly valued by incubator tenants (Kemp, 2013). Likewise, the provision of services by in-house staff at the incubator is positively related to tenant-client performance (Lewis et al., 2011).

Incubator managers also have the capacity to influence the quality of support that tenants receive within the incubator. Research evidence highlights that incubator managers must establish robust, high quality relationships with their tenants and that the strength of these human relationships are instrumental to the process of incubation (A. J. Ahmad & Ingle, 2011, p. 639). Incubator managers who commit time to fostering relationships with their tenants have the greatest impact within an incubator (Rice, 2002). This impact is further enhanced by those managers who interact with tenants on a continuous, rather than ad hoc basis (Rice, 2002).

The published research suggests that the attributes of the manager influence the assistance provided to tenants. In one study (Redondo & Camarero, 2017) the quality of the services provided to tenants was influenced by the entrepreneurial experience of managers. Specifically, incubator managers with previous entrepreneurial experience were more effective in delivering business assistance to tenants, and were more influential in their capacity to effect personal and business assistance and networking for tenant-businesses (Redondo & Camarero, 2017). It was therefore posited that the influence of managers with entrepreneurial experience was greater and more effective than managers with no entrepreneurial experience (Redondo & Camarero, 2017).

Another important role attributed to managers at incubators is in establishing trusted relationships. Managers are integral to establishing the trust that tenants have within their incubator, and in their relationship with tenant-businesses at the incubator (Vedel & Gabarret, 2014). Managers are also instrumental in establishing trust between tenants at the incubator (Redondo-Carretero & Camarero-Izquierdo, 2017). The trust that managers engender encourages tenant-to-tenant engagement at the incubator. The progression of the supported trust building then facilitates and strengthens networking and social interactions between tenants (Tottenham & Sten, 2005), fostering mutual support and empathy amongst tenants

(McAdam & Marlow, 2007). Interventions that foster relationships between tenants are often facilitated by managers through the activities they implement (A. J. Ahmad, 2014; A. J. Ahmad & Thornberry, 2018). These have been found to consolidate and enhance the physical proximity of tenants and encourage the formation of relationships between them (Redondo-Carretero & Camarero-Izquierdo, 2017).

Establishing trusted relationships at incubators is essential in these heavily constructed environments where there is the potential for conflict, suspicion, and distrust between tenant-businesses and where tenants perceive other tenants as potential competitors, particularly where they share similar business markets (McAdam & Marlow, 2007). The managers' role in building trust is thus essential in facilitating strong, mutually supportive networks between tenants within incubators (Schwartz & Hornych, 2010; Tottenham & Sten, 2005).

Consequently, integral to exploring and understanding the characteristic services offered at incubators is exploring and understanding the role of the manager in supporting service provision. Reviewing the available literature provides clear evidence that incubator managers are influential in the delivery and quality of services to tenants at incubators. They are critical in creating an environment for tenants that embodies trust, collaboration, interaction, and social networks that support and nurture new business. Their capacity to understand the needs of tenants, to implement the necessary supports and impart knowledge to aid tenants as they grow their business is a strong theme across the published literature. The review of literature has therefore highlighted two important and interrelated themes that inform and shape the context for emerging incubator research: (a) the centrality of characteristic services to successful outcomes for incubator tenants, and (b) the role and experience of incubator managers.

1.5 Gaps in the Business Incubator Research

The published literature examining business incubators is vast. Despite this, the lack of a unanimous definition of incubation complemented by a multitude of industry typologies and criteria have produced a vast body of heterogeneous research about fragmented topics which prevents generalisable insights about the industry (Albort-Morant & Ribeiro-Soriano, 2016; Hausberg & Korreck, 2018). It is proposed that today's incubator research suffers from a lack of consistent theoretical direction, despite more recent attempts to overlay different theoretical lenses to this area of study (Albort-Morant & Ribeiro-Soriano, 2016; Sagath, van Burg, Cornelissen, & Giannopapa, 2019).

More specific concerns raised by some researchers suggests that the scope of incubator research: (a) suffers from a breadth in focus (Mian, Lamine, & Fayolle, 2016); (b) has been examined using applied research frameworks that are often informal and anecdotal (Albort-Morant & Ribeiro-Soriano, 2016); and, (c) lacks a systematic approach to understanding incubator performance (Bergek & Norrman, 2008; Ratinho et al., 2013). There is also a dearth of research focusing on tenants, and how incubation influences them, and their entrepreneurial success (Hackett & Dilts, 2004; Isabelle, 2013; Shepard, 2013).

Furthering this confusion is the categorisation of incubators which tends to incorporate a broad set of defining features that include aims and objectives, their overarching model of sponsorship, corporate structure, and/or service provision (Essig, 2014). The multi-faceted nature of incubators, their models, mechanisms, and approaches have given rise to an array of incubator typologies (Pauwels, Clarysse, Wright, & Van Hove, 2016). Likewise, the diverse set of goals under which many incubators have been established reflects the breadth of incubator types (Tavoletti, 2013). The scope and diversity of categorisation has resulted in a lack of clarity to sufficiently define and guide research in this complex and diverse industry.

Importantly, there has been minimal research examining the wellbeing of tenants within the incubator environment. A small body of research has examined how the services offered at business incubators can enhance the business outcomes of tenants. For example, incubator research has examined the impact of networking in developing social capital (Fang et al., 2010; Scillitoe & Chakrabarti, 2005). Some researchers have also called for better understanding about the mental preparedness of tenants to drive their own business and how incubators can support this (Shepard, 2013).

Given the centrality of tenants within incubators, a review of the literature shows there has been limited research undertaken to explore the impact that incubators have on tenants. Furthermore, there is an obvious shortfall in the incubator research preventing understanding of the impact of incubators on tenants, in general, and on their positive psychological state of development, in particular. A new direction is needed that examines the influence that incubator services have on tenants positive psychological state of development, which may better support them as they pursue their new businesses.

A recent investigation by Ford (2015) suggests that incubators offer psychological benefits to tenants, by influencing their psychological capital. Ford's work offers an introduction to psychological capital within the incubator "space". This presents an important new lens through which an incubator tenant's positive psychological state of development can be examined. Empirical research is now needed to elucidate this area of research. The present research offers a new conceptualisation for incubator research by examining whether incubator services are associated with increases in psychological capital and support the constructs of hope, efficacy, resilience, and optimism.

1.6 Psychological Capital

Psychological capital describes the positive approach to psychology for individuals within the organisational context (F. Luthans et al., 2015), representing "a positive appraisal

of one's own capability or ability to overcome obstacles with sustained effort and perseverance" (Harms, Vanhove, & Luthans, 2017, p. 79). Psychological capital focuses on questions of "who you are" and "who you are becoming" (F. Luthans, Avey, et al., 2006, p. 388) and on developing the best that you can be by drawing upon positive, "internal resources" that enable success (F. Luthans et al., 2010; F. Luthans et al., 2004; F. Luthans, Youssef, et al., 2007).

As identified earlier, psychological capital is a multidimensional construct, derived from four positive psychological constructs of hope, efficacy, resilience, and optimism. Collectively, these constructs are referred to as the "HERO within", thus reflecting the core constructs (Hope; Efficacy; Resilience; Optimism) of psychological capital and the "HERO that lies within us" (F. Luthans, 2012, p. 7). These constructs combine to form a "synergistic effect" (F. Luthans et al., 2015, p. 252), interacting with the other constructs to facilitate greater outputs (effort; behaviour) than each of the constructs alone (Dawkins, Martin, Scott, & Sanderson, 2013). Together, they represent the characteristics and drivers that can lead individuals towards becoming the best, most capable self (Youssef-Morgan & Luthans, 2014). While psychological capital is a distinct concept, it includes elements that are analogous with other capitals (including human capital and social capital) such as knowledge, skills, education, and networks (F. Luthans et al., 2015, p. 6).

Each of the HERO within states show convergent and discriminant validity but it is psychological capital, as a higher order construct, that better predicts behaviours and attitudes than the individual states (B. C. Luthans, Luthans, & Avey, 2014). Psychological capital enables the individual to review and update their situation and goals, to overcome obstacles, and to succeed and achieve new goals (F. Luthans et al., 2015). Psychological capital relies on cognition and appraisal of situations for positive achievement. It is defined as "an

individual's positive psychological state of development" (F. Luthans et al., 2015, p. 2) that

manifests itself in the following ways:

1. Having the confidence (self-efficacy) to adopt and implement steps to be
   successful at activities that are challenging;

2. Having a positive approach (optimism) that leads to success both with current
   and future tasks and activities;

3. Being focused on goals yet having the capacity to re-orientate pathways towards
   a particular goal (through hope) that will enable them to be successful;

4. Rebounding from problems and set-backs enabling the ability to strive to
   achieve and even exceed beyond set goals (resilience) (F. Luthans et al., 2015,
   p. 2; Youssef-Morgan & Luthans, 2014).

Extensive research evidence attests to the role and influence of psychological capital.

A meta-analysis of psychological capital research found evidence that psychological capital

is related to job satisfaction, workplace commitment, and psychological wellbeing while at

work and was also associated with positive workplace behaviours (Avey, Reichard, Luthans,

& Mhatre, 2011). Others have also found that psychological capital is positively related to job

satisfaction (F. Luthans, Avolio, et al., 2007), job/work engagement (Guido, Consiglio,

Luthans, & Borgogni, 2018; Lorenz et al., 2016), perceptions of work engagement (Boamah

& Laschinger, 2015; Bonner, 2016), desirable worker behaviour, including organisational

citizenship behaviours (Avey, Luthans, & Youssef, 2010), positive psychological approaches,

including thriving at work (Paterson, Luthans, & Jeung, 2014), job performance as rated by

managers (Guido et al., 2018; F. Luthans, Avey, Clapp-Smith, & Li, 2008; F. Luthans,

Avolio, Walumbwa, & Li, 2005; S.J. Peterson et al., 2011), reducing negative attitudes and

behaviours in stressful work environments (Estiri, Nargesian, Dastpish, & Sharifi, 2016;

Laschinger & Fida, 2014), and, employee creativity (Yu, Li, Tsia, & Wang, 2019). Research

also suggests that an individual's perceptions of the support they received within their workplace is associated with elevated psychological capital and has a positive impact on workplace performance (F. Luthans, Norman, Avolio, & Avey, 2008).

Psychological capital is also related to other positive psychological constructs including wellbeing, proactive attitude, gratitude (Lorenz et al., 2016), psychological wellbeing (Avey, Luthans, Smith, & Palmer, 2010), and positive mental health (Krasikova, Lester, & Harms, 2015). The study of psychological capital has expanded to other contexts with different population cohorts, including school students, school teachers, mental health professionals, tertiary students, and at risk youth, with similar positive effect (e.g., Bissessar, 2014; Boamah & Laschinger, 2015; Çimen & Özgan, 2018; Datu et al., 2016; Dello Russo & Stoykova, 2015; Kalman & Summak, 2017; Koller & Hicks, 2016; Nielsen et al., 2017; Rew et al., 2017; Selvaraj & Bhat, 2018). In studies involving entrepreneurs, emerging research indicates that psychological capital is associated with entrepreneurial success (Baluku, Kikooma, & Kibanja, 2016), self-perceptions of authentic leadership (Jensen & Luthans, 2006), and entrepreneurial intentions (Contreras et al., 2017). Entrepreneurial psychological capital has also been found to predict courage, employee growth, and life satisfaction (Bockorny, 2015). Recently, psychological capital been examined with farmer-entrepreneurs to inform the development of typologies that will guide farmer-entrepreneurship, and capacity building (Chipfula & Wale, 2018).

This body of evidence establishes the relationship between psychological capital and various factors influencing wellbeing. This has prompted research into interventions to support and enhance psychological capital. These are closely aligned with interventions that support hope, efficacy, resilience, and optimism.

1.7 Theoretical Foundations of Psychological Capital

Psychological capital has a strong theoretical foundation. With its roots in positive organisational behaviour and scholarship (F. Luthans, 2002; F. Luthans & Avolio, 2009), it is measureable, has been extensively researched, and as a state-like construct it can be manipulated, developed, and improved (Youssef-Morgan & Luthans, 2014, p. 182). Likewise, each HERO within construct has a unique theoretical framework (F. Luthans, Avolio, et al., 2007, p. 545) further supporting the theoretical strength that underpins psychological capital (F. Luthans et al., 2015).

Positive organisational scholarship examines positivity in the organisational setting and is the collective term under which positive organisational behaviour and psychological capital are grouped (F. Luthans et al., 2015). Both represent the "mechanisms" for implementing, conceptualising and measuring positive organisational scholarship (F. Luthans et al., 2015).

Luthans and colleagues have contributed significantly to the current body of research into psychological capital, proposing that the interaction between the four positive HERO within states provides evidence that supports resources theory (F. Luthans et al., 2015; F. Luthans & Youssef, 2009). Resources theory provides insights into the individual's wellbeing through the acquisition, maintenance, and retention of resources that contribute to and support wellbeing (Avey, Luthans, Smith, et al., 2010). It describes how positive resources, such as hope, efficacy, resilience and optimism, are associated with long term positive outcomes. Resources contribute both to positive acquisition, as well as outcomes. Psychological capital is characterised by the combination and synergy of the four HERO within constructs to enhance one's cognitive appraisal of available resources. This can lead to positive outcomes and wellbeing; it is therefore closely connected to psychological capital (Avey, Luthans, & Youssef, 2010).

The theory of resources that has been proposed by Hobfoll (1989, 2002), posits that an individual's positive wellbeing is influenced by their collective resources (physical, personal, conditions, energies) which they can access, and also acquire (Culbertson, Mills, & Fullagar, 2010). Individual resources constitute the elements that represent a larger, collective set of resources, providing an understanding for an individual's motivations and decisions when resources are under threat or compromised. Resources such as psychological capital represent the synergy between the primary constructs of hope, efficacy, resilience, and optimism, providing the core elements required to enable an individual to respond, adapt, and develop positive outcomes (F. Luthans et al., 2015). For example, individuals can adapt and achieve success both as a means of protecting resources, and acquiring new ones (F. Luthans et al., 2015).

Analogous with this theory, psychological capital occurs when the HERO within states manifest as an integrated resource enabling the individual to manage and adapt their resources and respond (such as when their resources may be threatened) to achieve positive outcomes (F. Luthans et al., 2015, p. 30). The synergy that occurs enables the individual to respond, manage and adapt their resources – even when faced with challenges – and to pursue goals to achieve positive outcomes (F. Luthans et al., 2015, p. 30). An individual's personal resources are thus of particular importance in the workplace setting, providing a cache of resources from which an employee approaches and effectively responds and adapts to their environment (Avey, Luthans, Smith, et al., 2010).

Fredrickson's Broaden and Build model proposes that positivity facilitates and broadens the relationship between cognitions and outcomes thus enabling the building of personal and enduring physical, social and psychological resources (Cohn & Fredrickson, 2009; F. Luthans et al., 2015, p. 7). As an individual builds and develops their repertoire of cognitions and responses, a positive, upward spiral occurs (Cohn & Fredrickson, 2009).

Positive experience assists in developing psychological resources, such as psychological capital, which are then utilised, for example, to solve problems (F. Luthans, Youssef, & Rawski, 2011). Positive experience provides a foundation for building more psychological resources required to meet new challenges and providing the foundation for heightened cognitive skills that can lead to better problem solving (F. Luthans et al., 2011, p. 336).

1.8 The HERO Within Constructs

1.8.1 Hope

Hope is "a thinking process that involves an agency and pathways for one's goals" (C.R. Snyder, Cheavens, & Sympson, 1997, p. 107). It is a high-level, essential, and self-directed motivation that supports wellbeing (C.R. Snyder et al., 1997) by propelling an individual towards achieving positive outcomes and/or avoiding negative ones (C.R. Snyder, Feldman, Taylor, Schroeder, & Adams, 2000).

Hope comprises two reciprocal and essential cognitive processes: "pathways" and "agency" (F. Luthans & Jensen, 2002; C.R. Snyder et al., 2000). Pathways assists in planning for desired goals and generating additional directions – back up pathways – when problems arise during goal attainment (F. Luthans, 2002; F. Luthans et al., 2004; C.R. Snyder, 2000). Agency represents an individual's resolve and motivation to pursue and achieve goals (F. Luthans et al., 2004; C.R. Snyder, 2002; C.R. Snyder et al., 1997; C.R. Snyder et al., 2000).

Snyder's theory of hope proposes that cognition drives hope (C.R. Snyder, 2002). Positive emotions occur as a by-product of goal achievement. Subsequently, cognitive and emotional assessments direct an individual towards hopefulness and their current and future goals (C.R. Snyder et al., 2000).

As with each of the other HERO within states, hope is trait-like and state-like and is influenced by specific situations (Snyder et al., 1997) and is thus open to development and change over shorter time periods (F. Luthans et al., 2015). This is essential for psychological

capital in which hope (as well as efficacy, resilience, and optimism) is capable of being manipulated, managed, and enhanced through intervention (F. Luthans, 2002; F. Luthans & Jensen, 2002).

Individuals with high hope have a clear direction for goal achievement, readily formulating and utilising new pathways for goal achievement (C.R. Snyder et al., 1997), and view set-backs as potential challenges. Within the workplace, employees with high hope are skilled at identifying pathways for achieving work-related goals (Friend, Johnson, Luthans, & Sohi, 2016). They predict workplace performance, over time (S. J. Peterson & Byron, 2008), and exhibit positive work-related attitudes and behaviours, including, satisfaction, happiness, and commitment (Youssef & Luthans, 2007). Hope has a moderately positive impact on workplace performance, workplace commitment, wellbeing, and job satisfaction (Reichard, Avey, Lopez, & Dollwet, 2013).

Interventions for developing hope include solutions-based training and guided imagery for goal success, positive feedback which is solutions focused yet realistic in its expectations, and mentoring towards goals and addressing challenges (F. Luthans & Jensen, 2002). Within the workplace, strategies include developing both pathways and agency thinking to assist with goal-directed pathways, of "contingency planning" for alternative pathways to goal attainment when challenges arise, and using available assets to remain goal focused (F. Luthans et al., 2015). Techniques to foster hope are associated with approaching attainable yet challenging goals in which cognition, effort, and motivation are needed for goal success. Effective goal setting for improved performance and positivity can be fostered using various techniques. This includes "stretch goals" where the individual sets themselves a larger goal that extends their existing capabilities and overcome hurdles, or "stepping" where substantive goals are deconstructed into smaller more obtainable goals that can lead to sustainable goal-approach behaviours (Youssef-Morgan & Sundermann, 2014, p. 465).

Mental rehearsal can support individuals to rehearse for and assume new pathways for goal attainment, when faced with potential barriers (Youssef-Morgan & Sundermann, 2014). Other methods that support goal attainment associated with hope include establishing rituals to remain focused on goals, setting rewards to reinforce positive behaviours associated with goals, and the provision or access to resources to enable pathways development (F. Luthans et al., 2015).

1.8.2 Efficacy

Efficacy refers to an individual's perceptions about the likelihood of goal success and is synonymous with an individual's confidence, persistence, and conviction in their ability to initiate actions that lead to desired outcomes (F. Luthans et al., 2015). Influenced by self-motivation to achieve goals, despite set-backs, efficacy is a powerful human driver enabling an individual to extend control over their thoughts and behaviours, and to influence and control events around them (Bandura, 1993, p. 118).

The Social Cognitive Theory contributes substantially to the current understanding of efficacy (Bandura, 1977, 1997, 2012). An individual's belief in their efficacy guides how they feel and think, their behaviour, and their motivation (Bandura, 1993). Accordingly, efficacy influences the directions and perseverance of individuals to achieve success which is influenced by having the necessary skills and abilities, and is guided by sufficient "incentives" and information (Bandura, 1977, p. 194). Thus, self-efficacy integrates the complexities of the environment by drawing upon them and effectively using one's cognitive, social, and behavioural abilities to determine actions that meet various needs (Bandura, 1982).

Five cognitive processes support efficacy and assist with its development. Each of these cognitive processes increase the chances of success in meeting current and future goals whereby success fosters efficacy and vice versa (F. Luthans et al., 2015):

1. Symbolising. The capacity to mentally imagine or visualise a model. Symbolising builds confidence by providing direction with planning current and future actions.

2. Forethought. This enables the planning of future activities based upon anticipated performance and predicted outcomes and consequence. Past experiences are essential in supporting and predicting the likelihood of future success.

3. Observation. This, together with modelling, provides assistance with understanding and predicting future actions and consequences. Within the workplace, staff may learn which actions and behaviours lead to positive outcomes by observing others, such as their managers.

4. Self-regulation. This enables self-set goals and performance standards which are continually assessed to ensure optimal performance towards goals.

5. Self-reflection. Reflection and learnings of past activities including failures or successes provide insights that direct new and future goals and challenges (F. Luthans et al., 2015).

Together with cognition, efficacy helps regulate motivation and forethought to guide actions associated with the anticipation of expected outcomes. It requires the individual to establish actions for guiding cognitive motivation (Bandura, 1993). Accomplishment with past performance effectively develops efficacy which is informed by individual experience and mastery (Bandura, 1977). Successful, past performance thus facilitates the development of an individual's expectations for future success.

Self-efficacy exhibits both state and trait characteristics (Bandura, 1997) although it is considered to be more state-like in its composition, requiring active assessment of the current situation for goal attainment. Research identifies that belief in one's own self-efficacy

influences cognitive and behavioural impacts associated with personal empowerment and that a sense of control over cognitions associated with self-efficacy can reduce negative thoughts and negative emotions (Ozer & Bandura, 1990).

Studies from organisational settings indicate that an employee's efficacy is related to positive workplace outcomes and with effective workplace behaviours and techniques such as goal setting, job satisfaction, and effective functioning in other aspects of life, including health and psychosocial wellbeing (F. Luthans et al., 2015). Self-efficacy is influential in guiding an individual's intentions towards entrepreneurship (Boyd & Vozikis, 1994), and is also associated with venture growth (Baum & Locke, 2004). Research also suggests that entrepreneurial self-efficacy can be positively influenced by external factors, such as mentoring (St-Jean, Radu-Lefebvre, & Mathieu, 2018).

Mastery and experiencing success is an effective mechanism for building efficacy and developing one's perceptions and interpretations of specific events (F. Luthans et al., 2015; Youssef-Morgan & Sundermann, 2014). It can be fostered through setting realistic tasks or mini goals that will lead to probable success (rather than failure) thus, gradually building an individual's self-confidence in their abilities and eventually mastering more complex goals (F. Luthans et al., 2015). Building efficacy can also be developed though modelling and imitating the desired behaviours of others, which in turn strengthens an individual's confidence in their own abilities (F. Luthans et al., 2015; Youssef-Morgan & Sundermann, 2014). Similarly, vicarious learning and observation (supported by peer-mentors) has been found to support the development of employee self-efficacy, through mastery (B. C. Luthans et al., 2014; Youssef-Morgan & Sundermann, 2014).

Physiological and psychological states also impact on efficacy (Youssef-Morgan & Sundermann, 2014). Negative arousal and positive arousal, for example, workplace stress or positive motivational speeches, may dampen or stimulate the energy and motivation

associated with the five cognitive processes for efficacy (F. Luthans et al., 2015). Social

persuasion in the form of positive feedback from others and their belief in an individual's

capabilities, can also foster self-confidence (Youssef-Morgan & Sundermann, 2014).

1.8.3 Resilience

Resilience is defined as "the capacity of a dynamic system to adapt successfully to

disturbances that threaten system function, viability, or development" (Masten, 2014, p. 6). It

represents an individual's experience of overcoming adverse life experiences. Resilience

occurs when both adversity and positive adaption are present (Masten, 2001). It is

representative of normal, healthy human functioning (Southwick, Bonanno, Masten, Panter-

Brick, & Yehuda, 2014) and is a catalyst for personal growth and development (F. Luthans et

al., 2015).

The conceptualisation of resilience in psychological capital identifies that adverse

events potentially challenge and extend the individual, thus providing an opportunity for

individual growth, success, and fulfilment (F. Luthans et al., 2015). Resilience can be a

positive, proactive process facilitating personal growth, with challenges contributing

cumulatively to resilience (F. Luthans et al., 2015, p. 151).

Internal and external factors influence and shape responses to adversity (Garcia-Dia,

DiNapoli, Garcia-Ona, Jakubowski, & O'Flaherty, 2013). Hope, efficacy, and optimism for

example, are considered assets to resilience together with a range of internal and external

factors that protect against the stress or adversity being experienced. Internal factors include

maturity, access to available resources, personality, and temperament, alongside the other

psychological capital states (hope, efficacy, optimism) (Garcia-Dia et al., 2013; F. Luthans et

al., 2015). External factors, such as family and friends, are also assets that provide the

scaffolding for developing resilience and buffering against adversity (Garcia-Dia et al.,

2013).

The experience of resilience leads to a range of outcomes that can precipitate personal growth and understanding, greater psychological control, and strength or adjustment that influences how the individual integrates with their environment and copes with adversity through healthy functioning (Bonanno, 2004; Garcia-Dia et al., 2013). Research shows that resilience influences positive workplace outcomes and enhances and supports employees (B. Ahmad, Latif, Bilal, & Hai, 2019; Ang et al., 2018). Resilience is particularly important for individuals in work environments that are challenging and demanding (F. Luthans et al., 2015; McGarry et al., 2013) and has been associated with reductions in employee turnover intentions (Davies, Stoermer, & Fabian, 2019), and employee burnout (Mealer et al., 2012). While there is consensus that resilient employees are beneficial within the workplace, only a few studies have examined the factors that enhance the resilience of workers (King, Newman, & Luthans, 2016).

Resilience is a construct that has been examined both as a trait and a state. As a state construct, resilience is considered dynamic, fluctuating over time (more so in children than in adults), and in response to external circumstances in the environment (Fletcher & Sarkar, 2013). The dynamic, state-like construct of resilience is consistent with the positive approach. It focuses on the positive outcomes after adversity and where resilience changes over time and in response to external circumstances in the environment (Fletcher & Sarkar, 2013). Psychological capital supports a state-like composition of resilience that can be manipulated through intervention and training (F. Luthans, Volelgesang, & Lester, 2006).

Interventions for developing resilience include coaching to build resilience (Grant, Curtayne, & Burton, 2009), and training sessions that are focused on resilience-building (Robertson, Cooper, Sarkar, & Curran, 2015; Vanhove, Herian, Perez, Harms, & Lester, 2016). Systematic analyses of research into employees' resilience (Robertson et al., 2015;

Vanhove et al., 2016) reveal that training may enhance resilience within the workplace (Robertson et al., 2015) but that benefits can diminish over time (Vanhove et al., 2016).

Within the workplace, a range of initiatives for developing worker resilience have been identified. It has been proposed (B. C. Luthans et al., 2014) that activities that develop physical and psychological wellbeing develop resilience. This occurs by directly supporting and developing an individual's personal assets (and is an asset-focused strategy) and of strengthening personal assets (such as networks), while avoiding negative situations that lead to adverse experiences. Other techniques for building resilience include developing social supports at work, establishing flexible work-place engagement practices and flexible work practices to foster work-life balance, and to establish workplace systems that respond quickly to employee adversity (Bardoel, Petit, De Cieri, & McMillan, 2014). Similarly, exploring and developing an individual's awareness of their positive characteristics (internal; external) – the skills, abilities, and the strong social connections of individual workers – is important in developing resilience in the workplace (F. Luthans et al., 2010).

Informed by the work of Masten, Cutuli, Herbers, and Reed (2009) three strategies have been identified to build resilience by both supporting the development of assets, and addressing and mitigating risks (F. Luthans et al., 2015; C.M. Youssef-Morgan & Sundermann, 2014). These are:

1. Asset-focused strategies. These entail developing assets that lead to positive outcomes. Social capital, human capital, and psychological capital are all examples of such assets developing an individual's knowledge and skills (F. Luthans et al., 2015). Communication, social support, and mentoring are methods that can enhance resilience (Youssef-Morgan & Sundermann, 2014).

2. Risk-focused strategies. These involve managing, rather than avoiding risk, and developing risk management approaches (such as mentoring and training in

response to potential risks) (F. Luthans et al., 2015, p. 157). Examining one's

assets in relation to the risk at-hand and planning to effectively utilise one's

assets to mitigate risk can assist with this; interventions that involve coaching

and mentoring can foster these strategies (Youssef-Morgan & Sundermann,

2014).

3. Process-focused strategies. These include identifying processes and skills to

properly manage and overcome potential risks. Past experience is important in

identifying, choosing, and developing a plan to overcome and maintain an asset

to meet challenges (F. Luthans et al., 2015; Youssef-Morgan & Sundermann,

2014).

1.8.4 Optimism

Optimism is a "positive explanatory style" that occurs when positive events are

attributed to personal, consistent, and permanent causes and where negative events are

dismissed as temporary, external, and situation specific (F. Luthans & Youssef-Morgan,

2017, p. 342; F. Luthans & Youssef, 2007). The theoretical foundation for optimism (and

pessimism) is the expectancy-value model where motivation towards a goal, and the value

attributed to the goal, guides behaviours (Carver, Scheier, & Segerstrom, 2010). Expectancy

is therefore aligned to confidence and achieving success, thus propelling an individual

towards their goals (Carver et al., 2010). Optimism is also aligned with an individual

explanation of situations and events, their interpretation, causes, and situational factors as

reflected in the work of Seligman (1998). Both theoretical perspectives for optimism have

been integrated into the broader study of optimism pertaining to psychological capital and

positive organisation behaviour (F. Luthans & Youssef-Morgan, 2017).

Developed by Carver, Scheier, and colleagues (Scheier & Carver, 1985; Scheier,

Carver, & Bridges, 1994), dispositional optimism assumes that individuals remain goal

focused, despite significant challenges. This is based on the proviso that expectations are consistent, and the eventual outcomes are favourable and successful (Scheier et al., 1994). Within psychological capital, optimism enables an individual to conduct a realistic assessment for success and determine the mechanisms required for this, and to be flexible in these mechanisms for goal achievement (F. Luthans et al., 2015). This is manifest by being self-disciplined, by analysing past events and planning contingencies to support prevention (F. Luthans et al., 2015).

Within the workplace, optimism is widely regarded and is associated with behaviours that are highly valued at the organisational level. This includes being highly motivated, being hard working, setting goals, and implementing strategies for success, despite possible setbacks (F. Luthans, 2002). In workplace and training environments that present greater challenges and increased chances of failure, optimists were more successful and were more likely to remain within their roles despite experiencing challenges (Forgeard & Seligman, 2012). Highly optimistic individuals are also more persistent in their goals, experience greater levels of subjective wellbeing, have better coping skills, and are unlikely to adopt negative coping strategies (Carver et al., 2010). Optimism can also facilitate expectancy alongside the commitment required for, and progress towards, goal achievement (Monzani et al., 2015).

Originally, optimism was considered relatively unchanging, and more trait-like (Carver et al., 2010) but evidence now suggests it also shares state-like qualities (F. Luthans et al., 2010). Specifically, optimism changes across situations and does not show stability, over time. "Flexible optimism" offers a realistic understanding of optimism, especially in the workplace setting (F. Luthans & Youssef, 2007, p. 332). Flexible optimism describes the capacity for an individual to acknowledge their positive achievements and to acknowledge, accept, and assume responsibility when more challenging events and situations arise (F. Luthans & Youssef, 2007).

As a state-like construct (as well as also sharing trait-like qualities), optimism can be developed in the workplace using approaches that are realistic and flexible. Techniques that have been found to be effective include:

1. Reflections and leniency to the past. This provides a realistic approach to viewing past events. Positively reviewing past events within a realistic context enables positive strategies to cope with problems, "positively reframe set-backs" without laying blame or preventing goal progression.

2. Appreciation for the present. This enables current situations to be assessed positively rather than focusing on, and being overcome by negative thoughts.

3. Seeking future opportunities. This technique comprises a realistic understanding of the past and present, and enables future activities to be reviewed in a more positive light, directing one's behaviours accordingly (F. Luthans et al., 2015; Youssef-Morgan & Sundermann, 2014).

Future opportunities and challenges are viewed more constructively through an optimistic mindset (Youssef-Morgan & Sundermann, 2014). The social network and supports such as mentoring, coaching, role models, peer support, and friendship can reduce pessimism and negativity and support "positive developmental processes" (F. Luthans et al., 2015, p. 135). Positive self-talk can also assist with the appreciation of the present and opportunity seeking for the future. Self-talk enables individuals to adopt a positive approach by making cognitive decisions towards positive rather than negative attributions (Youssef-Morgan & Sundermann, 2014).

In summary, the constructs of hope, efficacy, resilience, and optimism are well developed and derived from strong theoretical bases. Each has a unique role in influencing an individual's positive psychological state of development in relation to goal directed motives, behaviours and learnings. Interventions assist in developing the HERO within, in the

organisation setting. This offers an important foundation from which psychological capital is derived and their interventions are developed. Extensive research has been conducted that attests to the impact of psychological capital on wellbeing, in general, and in the workplace specifically. This evidence, to be discussed in the subsequent sections, provides the impetus for interventions associated with the specific development of psychological capital.

1.9 Interventions for Psychological Capital

Research provides compelling evidence for the impact of psychological capital on positive behaviours, attitudes, and performance outcomes. Consequently, attention has turned to interventions for enhancing psychological capital. Many researchers recognise the value of psychological capital interventions within the workplace to advance wellbeing and happiness of workers, and to improve workplace productivity (Culbertson et al., 2010; Harty, Gustafsson, Bjorkdahl, & Moller, 2016; Hsu, Wang, Chen, & Dahlgaard-Park, 2014; Li et al., 2014).

Psychological capital, and the HERO within constructs, exhibit qualities that are both state-like and trait-like. State-like constructs are open to change and development – which can be manipulated or guided by interventions – that enable individuals to direct their attitudes and behaviours towards desired outcomes (F. Luthans et al., 2015). Psychological capital demonstrates relative stability over a long period of time (up to six months) yet is malleable enough to be altered through intervention, and able to be controlled by the individual (F. Luthans & Youssef-Morgan, 2017). Consequently, interventions for psychological capital are focused on developing and building expertise and strength across the four HERO within constructs of hope, efficacy, resilience, and optimism.

Luthans and colleagues have developed and trialled the Psychological Capital Intervention (F. Luthans, Avey, et al., 2006; F. Luthans et al., 2010; F. Luthans, Avey, & Patera, 2008). This intervention comprises brief training to develop psychological capital

through short exercises involving individual and group activities using writing, discussion, and reflection. These intervention strategies support each of the HERO within states and the overarching construct of psychological capital (F. Luthans, Avey, et al., 2006; F. Luthans et al., 2010). Youssef-Morgan and Sundermann (2014) proposed that interventions supporting the development of hope, efficacy, resilience, and optimism in the workplace should meet four criteria. Specifically, the intervention must (a) lead to positive change; (b) only be implemented to alter state-like characteristics that can be manipulated through intervention; (c) be different to, and extend current interventions; and, (d) be of greater benefit and exceed the cost.

Broadly, the interventions for developing psychological capital include the setting of goals, developing pathways, mental rehearsal for goal approach and attainment contextualised to each of the identified pathways, and pre-planning in anticipation of overcoming barriers in pursuit of these goals (F. Luthans & Youssef-Morgan, 2017). As one core construct is developed through intervention, so too, the other constructs are also enriched, fostering the synergy between the constructs that represents psychological capital (F. Luthans, Avey, et al., 2006; F. Luthans & Youssef-Morgan, 2017). Interventions typically include:

1. Hope. Setting work-related, meaningful and somewhat challenging goals. Techniques to support agency and pathways thinking is developed by practicing multiple pathways generation to goal achievement and identifying potential hurdles. Group discussion and feedback assisted in the generation of new, alternative pathways.

2. Efficacy. Practicing strategies for goal achievement such as stepping and setting small goals to achieve substantive goals. This is shared with the larger group. This assists in developing mastery for goal pursuit which is further perpetuated

through vicarious learning and observing the broader group discuss goal success and goal mastery. Emerging positive expectations foster emotional arousal which is reinforced by social persuasion from peers within the group, and the facilitator, who provides support for goal setting and timelines for goal achievement.

3. Optimism. This occurs when considering multiple pathways for goal achievement, and finding ways to overcome potential hurdles. This fosters positive expectation which is further reinforced through observation of others as they identify pathways and plan for goal success. This leads to increased optimism.

4. Resilience. Building resilience is fostered through the generation of resources. Individuals identify their own unique assets (skills; social connections; expertise) that can be utilised to achieve their goals and assist with establishing techniques to avoid challenges or preventing them from escalating into an issue. Developing techniques to address the cognitions and emotions that occur during adverse situations provides the foundation for developing resilience and overcoming adverse situations (F. Luthans, Avey, et al., 2006; F. Luthans et al., 2010; F. Luthans et al., 2015).

While this overview captures central elements, it is acknowledged that there are other factors and strategies that can support psychological capital. For instance, a positive organisational environment that imbues positive employee behaviours and attitudes arising through the development of an individual's psychological capital can assist in nurturing this construct (Hasan et al., 2019; F. Luthans & Youssef-Morgan, 2017; Youssef-Morgan & Sundermann, 2014).

Collectively research attests to the value of psychological capital interventions (e.g., Harty et al., 2016; F. Luthans, Avey, et al., 2006; F. Luthans et al., 2010). Trials with tertiary students and managers led to participants displaying higher levels of psychological capital after receiving the intervention (Dello Russo & Stoykova, 2015; F. Luthans et al., 2010). Similarly, when introduced with at-risk youth, to improve their short term goals and reduce risky health behaviours, positive outcomes were also recorded (Rew et al., 2017). Findings were also replicated using an online version of the psychological capital intervention, suggesting that psychological capital can also be enhanced through online intervention (F. Luthans, Avey, & Patera, 2008). It is thus proposed that interventions increase psychological capital development by about 2%; an increase that has been deemed to be statistically significant (F. Luthans et al., 2015).

In summary, psychological capital is an important construct representing the positive approach by which individuals collectively utilise their internal resources to achieve success. Applied within the workplace, psychological capital has been developed from a strong theoretical basis representing the synergy between the constructs of hope, efficacy, resilience, and optimism. There is also evidence that psychological capital can be enhanced through intervention drawing upon, developing, and extending existing methods of intervention for individual constructs of hope, efficacy, resilience, and optimism. The strength of this construct as a mechanism for supporting improved outcomes for individuals, within organisational settings, clearly indicates the potential application for this approach, for tenants within business incubators.

1.10 Psychological Capital Interventions and Business Incubator Services

Published research offers broad insights about the value of business incubators for business growth and entrepreneurial success. However, research focusing on the individual psychological factors of tenants within incubators has been largely neglected, despite initial

research discussion and evidence suggesting that psychological capital is associated with

entrepreneurship (Bockorny, 2015; Contreras et al., 2017; Hasan et al., 2019; Jensen &

Luthans, 2006; Pease & Cunningham, 2016).

With its strong theoretical foundation within the workplace, psychological capital has

broad application to other settings, including business incubators. Recently, Datu et al. (2016)

applied their research of psychological capital to the school setting in which they claim strong

similarities exist between the formal workplace setting and schools. Similar justification can

be applied to research examining psychological capital with incubator tenants. Incubator

tenants are task orientated, requiring similar manifestations of psychological capital for

success. Furthermore, the structured environment of incubators, much like workplaces and

schools, are settings where psychological capital can be nurtured to enable positive outcomes.

The theoretical implications and research evidence highlighted so far indicates the

significant contribution of psychological capital and the constructs of hope, efficacy,

resilience and optimism. Business incubators provide a location where there is much

opportunity for tenant development and growth, aided by the characteristic services at

incubators. These compelling reasons provide the rationalisation for examining the

relationship between incubators and their role in supporting tenants' psychological capital.

Primarily, inspection of the characteristic services offered at incubators are analogous with

interventions that support the development of the HERO within constructs, and psychological

capital. There is much potential to expand the research of psychological capital to a different,

yet relevant and transferable setting, such as incubators, with the focus on tenants'

psychological capital.

To date, only one known study has examined the relationship between business

incubators and their impact on psychological capital. Ford (2015) explored, among other

things, how an incubator serves the psychological needs of tenants by examining whether the

incubator is a source for psychological capital for tenants. Based on interview data collected

from entrepreneurs ($N = 12$), inferences were made that business incubators "facilitate

positive interactions and the ensuing psychological capital" (p. 13). Consequently, Ford

recommended introducing new incubator curriculum and events for tenants developed from a

psychological framework and "dedicated to hope, motivation, resilience, optimism or self-

efficacy as they relate to new venture building" (p. 12). Ford subsequently proposed that

psychological capital and other positive psychological states could assist in connecting

potential tenants to the incubator by suggesting that "incubators leverage the incubator as a

resource for psychological capital in marketing and communication messages" (p. 13).

Ford's (2015) research, while not applying the standard, quantitative measure of

psychological capital does offer preliminary insights that support the need to explore the

potential role and impact of business incubators on the psychological capital of tenants. The

present study however extends the focus and direction of research to explore the tentative

predictions about the relationships between characteristic services at incubators and tenants

psychological capital. Exploration of these relationships, offering a new and important

conceptualisation, will assist in identifying and describing how the four characteristic

services at incubators potentially manifest and influence the psychological capital of

incubator tenants.

Space, Physical Resources, and Infrastructure

A review of the published findings presented to this point indicates that space,

physical resources, and infrastructure at incubators appear analogous with interventions that

support tenants' hope and efficacy. Interventions for hope require the setting of work-related,

meaningful and somewhat challenging goals, of planning for contingencies when challenges

present themselves, and identifying multiple pathways for goal achievement (F. Luthans et

al., 2010; Youssef-Morgan & Sundermann, 2014). The physical environment at the incubator,

which include a range of amenities, may assist tenants to determine and establish their business goals and direct their pathways and actions towards goal attainment. This shares broad similarity with hope and finding suitable pathways to approach and succeed at goals.

Interventions for developing efficacy focus on confidence building which can be enhanced through positive physiological and emotional arousal (Youssef-Morgan & Sundermann, 2014). The space, physical resources, and infrastructure may assist with developing tenant efficacy. Specifically, the physical space and infrastructure at the business incubator has the potential to engender positive physiological and emotional arousal in tenants, evidenced in the research of Monsson and Jørgensen (2016), where tenants gain business legitimacy by being at the incubator. Given these strong emergent indicators it is proposed that the positivity that tenants experience from the physical setting at the incubator may help to energise and motivate them in their own capabilities for achieving success with their business goals, thus developing confidence. These insights provided the basis for an initial research conceptualisation within which it is proposed that there is a relationship between the space, physical resources, and infrastructure at incubators and tenants' hope and efficacy. This relationship is shown in Figure 1.
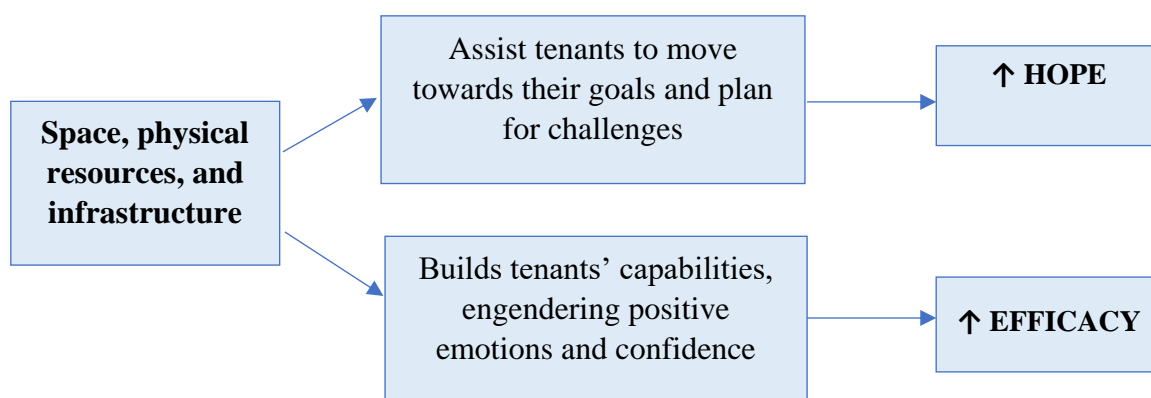
Figure 1. Proposed relationship between space, physical resources, and infrastructure and tenants' hope and efficacy.

Business Support Services

    Business support comprises the delivery of services – including mentoring, coaching, training activities, and planning in business development practices – to support tenants to grow their business. The provision and range of available business support services to tenants is similar to the interventions used to develop the four constructs comprising psychological capital: hope, efficacy, resilience, and optimism. For example, interventions for hope require the setting of work-related, meaningful and somewhat challenging goals, of contingency planning, and mental rehearsal (F. Luthans et al., 2010; Youssef-Morgan & Sundermann, 2014). Mentoring, coaching and training is a feature of business support services available at incubators. This has the potential to assist tenants to identify and set their goals, to plan for challenges, and to switch to alternative pathways for goal achievement, enabling them to remain focused on goal attainment. Positive feedback is another technique that supports hope, and has the potential to be incorporated in the mentoring and training offered to tenants through the business services at incubators.

    Interventions for developing efficacy focus on confidence building, often through performance success. Mastery and success can be achieved through modelling, observation, and vicarious learning (B. C. Luthans et al., 2014; F. Luthans et al., 2015; Youssef-Morgan & Sundermann, 2014). Other techniques to support goal mastery include positive feedback and observing and imitating others' success which can facilitate positive emotional arousal (F. Luthans et al., 2010). Business support services available to tenants at incubators comprise techniques analogous with developing efficacy associated with psychological capital. For example, coaching and training represent forms of modelling, and learning through positive emotional arousal (F. Luthans et al., 2010). Learning from others who are successful, such as from those individuals providing training and coaching, assists with developing efficacy (Youssef-Morgan & Luthans, 2014), enabling the regulation of motivation and behaviour

associated with goals. Furthermore, social persuasion can foster self-confidence and can be manifest in the positive feedback from others and their belief in an individual's capabilities (Youssef-Morgan & Sundermann, 2014). Similarly, positive feedback may be inherent in the one-on-one mentoring or coaching associated with the delivery business support services and this may help develop tenants' self-efficacy.

Interventions for fostering resilience are aimed at understanding, developing, and building an individual's unique assets and resources, and addressing cognitions and emotions when adverse situations arise (F. Luthans et al., 2010; F. Luthans et al., 2015; Youssef-Morgan & Sundermann, 2014). Techniques that support resilience, such as planning for, and managing, adverse situations by effectively utilising one's assets to address risks and challenges, may be provided to tenants through the business services and mentoring offered at incubators. Communication, social support, and mentoring are methods found to enhance individual assets that can improve resilience (Youssef-Morgan & Sundermann, 2014).

Business support services are also similar to interventions that support optimism. These interventions include reflections (and leniency) of the past, positive awareness of the present and seeking new opportunities to overcome challenges for the future (F. Luthans et al., 2015, p. 253). The social network and supports available through mentoring and coaching, and role models, can reduce pessimism and support "positive developmental processes" (F. Luthans et al., 2015, p. 135). It is posited that optimism may thus be supported through building optimistic appraisal and understanding through the delivery of mentoring and coaching inherent with business support services at incubators. The proposed relationship between business support services at incubators and tenants' hope, efficacy, resilience, and optimism is presented in Figure 2.This figure captures the next level of conceptualisation of
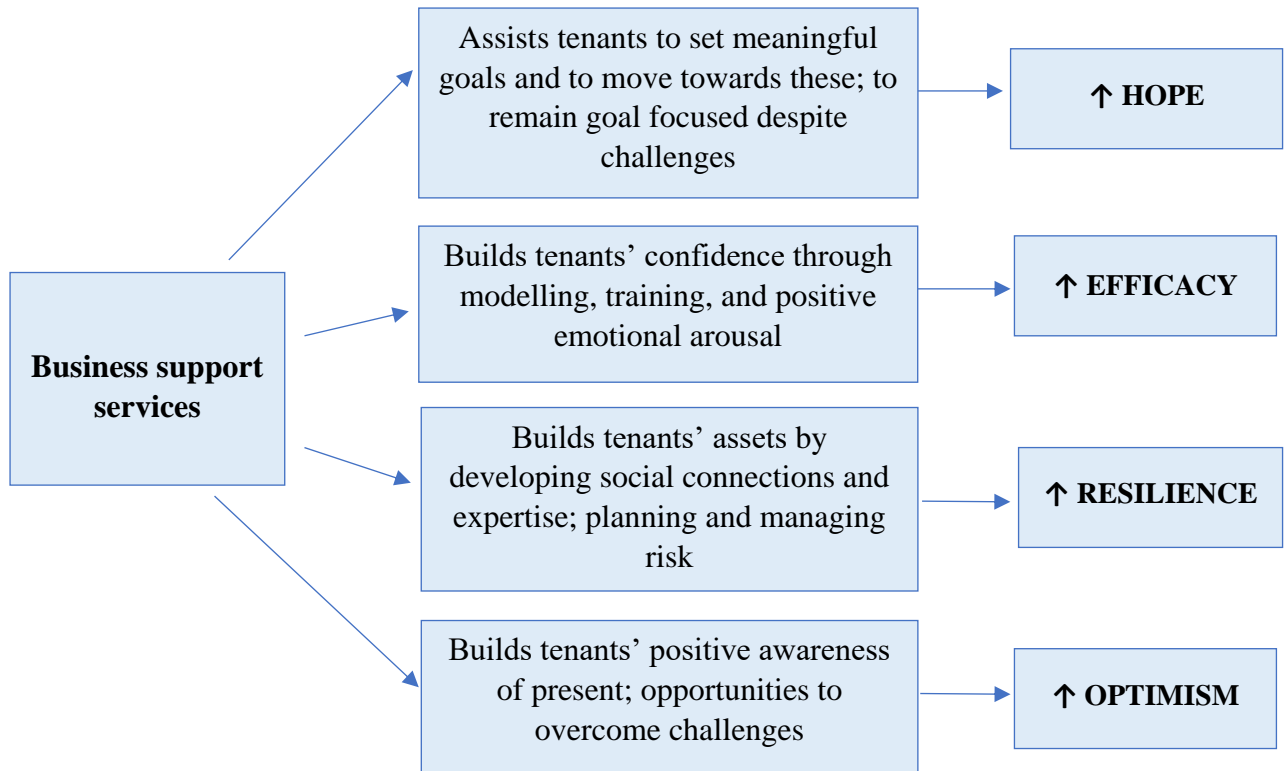
Figure 2. Proposed relationship between business support services and tenants' hope, efficacy, resilience, and optimism.

linkages between interventions provided at business incubators and the building of the HERO within elements.

Networking

Networking is a critical feature of most business incubators and appears to share similarities with techniques to develop tenant's efficacy for psychological capital. Traditionally, interventions for developing efficacy focus on building confidence associated with performance success (F. Luthans et al., 2015). Mastery and success can be achieved through vicarious observation, modelling, and imitation and is influenced by positive physiological and psychological arousal (B. C. Luthans et al., 2014; F. Luthans et al., 2010; Youssef-Morgan & Luthans, 2014). The peer mentors for incubator tenants – comprising the internal network of fellow-tenants, and members of the immediate incubator network – have the potential to develop and support efficacy. Modelling successful goal-directed behaviour

through the vicarious learning from the successes of other tenants, and of social persuasion, through positive emotional arousal and feedback, can increase one's own confidence.

Developing skills to understand personal assets, and addressing the cognitions and emotions that occur during adverse situations is often used to support resilience. Establishing networks for tenants within and external to the business incubator can assist in building tenants' assets and resources, such as social capital. This can support and buffer tenants from adverse experiences, thus building their resilience, and psychological capital (F. Luthans et al., 2010; F. Luthans et al., 2015).

Networking may also assist in building tenants' optimism. Social networks and supports such as mentoring, coaching, role models, peer support, and friendship can reduce pessimism and negativity and support "positive developmental processes" (F. Luthans et al., 2015, p. 135). The internal peer network at incubators has been found to engender knowledge sharing, friendship, and access to resources for tenants at incubators. The strength of these networks – the social and professional interactions with other tenants – may enable tenants to reflect, realistically, on past activities. It is therefore proposed that this could provide them with a more positive approach in reflecting on past activities as they approach future goals and address challenges. The proposed relationship between networking at incubators and the constructs of efficacy, resilience, and optimism is presented in Figure 3.

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                    ┌─────────────────────┐
              ┌────▶│ Builds tenants'     │         ┌──────────────┐
              │     │ confidence through  │────────▶│ ↑ EFFICACY   │
              │     │ peer observation,   │         └──────────────┘
              │     │ modelling and       │
              │     │ vicarious learning  │
              │     └─────────────────────┘
┌────────────┐      ┌─────────────────────┐
│            │      │ Builds tenants'     │         ┌──────────────┐
│ Networking │─────▶│ personal assets     │────────▶│ ↑ RESILIENCE │
│            │      │ through social      │         └──────────────┘
└────────────┘      │ connections and     │
              │     │ expertise;          │
              │     │ buffering adversity │
              │     └─────────────────────┘
              │     ┌─────────────────────┐
              │     │ Builds tenants'     │         ┌──────────────┐
              └────▶│ realistic, positive │────────▶│ ↑ OPTIMISM   │
                    │ understanding for   │         └──────────────┘
                    │ past and guides     │
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                    │ peer support        │
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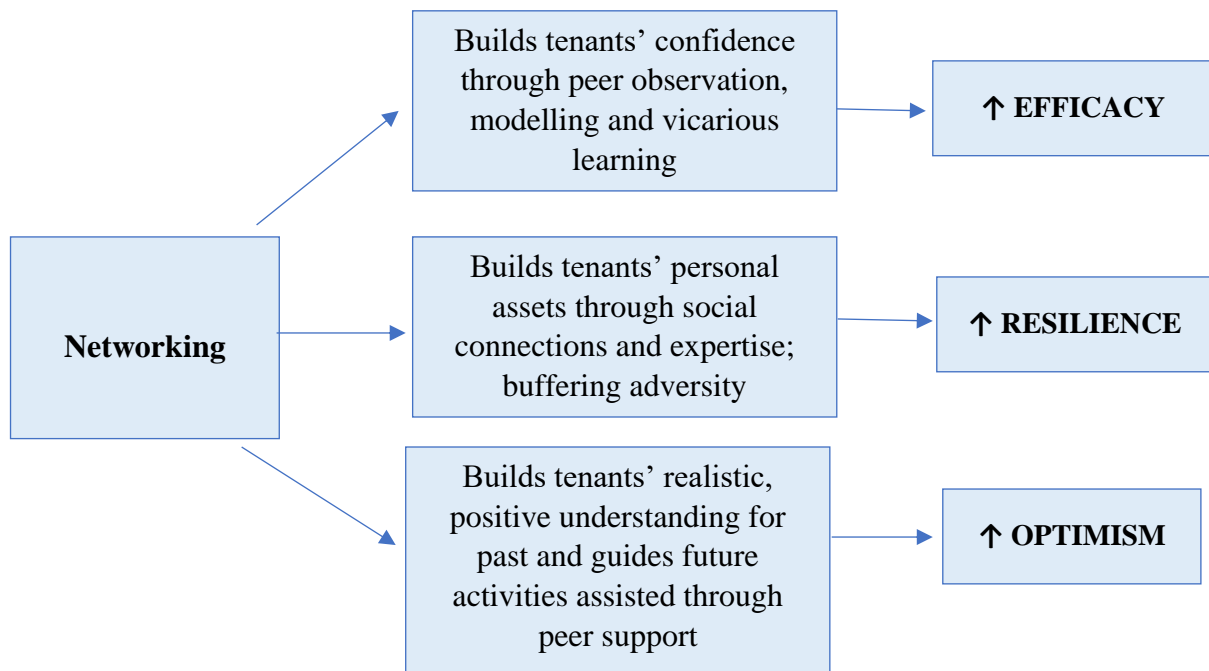
Figure 3. Proposed relationship between networking and tenants' efficacy, resilience, and optimism.

Structured Selection, Entry, and Exit

Screening and selection of tenants prior to their admittance to the business incubator and agreement about the duration that tenants will remain within the business incubator facilitates the timely graduation of tenants from business incubators, and increases their utilisation of the business support services offered at the incubator. This service may assist with developing psychological capital, hope and optimism.

Interventions supporting the development of hope are focused on goal development and goal directed pathways where techniques for contingency planning are encouraged (F. Luthans et al., 2010; F. Luthans et al., 2015). Having a structured selection, entry, and exit strategy can assist tenants to plan for and set their goals and associated pathways for their business. Specifically, having a specified timeline for remaining at the incubator could assist tenants to remain goal focused using resources, such as timelines and progress updates, towards goal direction and attainment. This may also foster mental rehearsal for goal approach and enable potential business obstacles to be anticipated within the context of the

time they can remain a tenant at their incubator. Mental rehearsal is a technique that supports

hope by enabling individuals to rehearse various scenarios associated with goal achievement

and to thus plan for new, alternative pathways to achieve goals when challenges occur

(Youssef-Morgan & Sundermann, 2014).

Similarly, interventions for developing optimism occur through positive expectancy

(F. Luthans et al., 2010). Having a structured selection, entry, and exit process from the

incubator could facilitate tenants' realistic expectations for success in relation to their future

goal pursuits, influenced by the timelines for remaining within the business incubator. It is

therefore suggested that contextualising the boundaries associated with incubator tenancy

could enable tenants to focus on the opportunities available to them at the incubator, and of

fostering positivity. The proposed relationship between structured selection, entry, and exit

plans at incubators and the constructs of hope and optimism is presented in Figure 4.
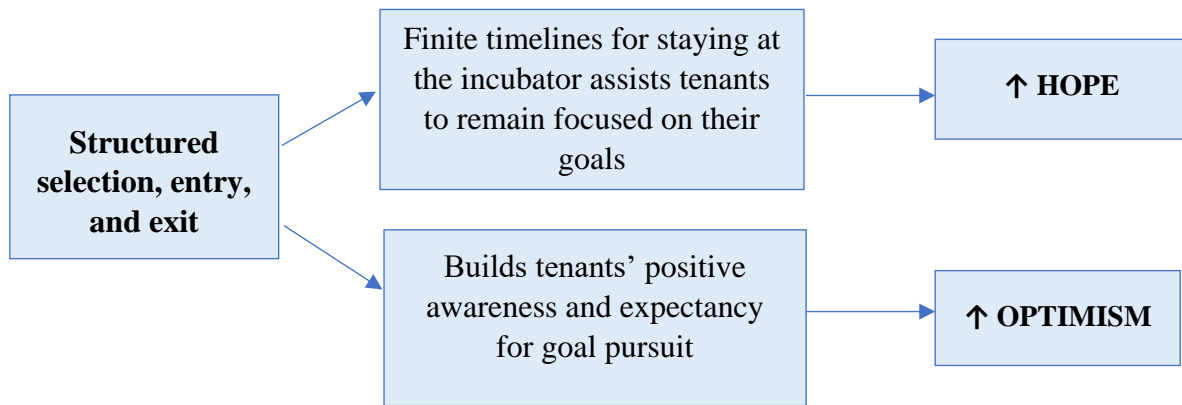
Figure 4. Proposed relationship between structured selection, entry, and exit and tenants'
hope and optimism.

Summary

The preliminary examination of each of the characteristic services at business

incubators identifies close analogies between these and the interventions for developing the

constructs of hope, efficacy, resilience, and optimism that comprise psychological capital.

The proposed relationships between each characteristic service and the four HERO within

constructs are presented in the following Table.

Table 1

The Proposed Relationships between Business Incubator Characteristic Services and

Interventions for Developing Hope, Efficacy, Resilience, and Optimism

Business incubator characteristic services	HERO within construct			
	Hope	Efficacy	Resilience	Optimism
Space, physical resources, and infrastructure	✓	✓		
Business support services	✓	✓	✓	✓
Networking		✓	✓	✓
Structured selection, entry, and exit	✓			✓

While each of these concepts has been proposed individually to this point, it is critical

to explore them collectively. Consequently an overarching model has been developed which

has integrated each of the previously presented conceptualisations. This integration enables

the examination of the combined model that investigates the relationships between incubator

characteristic services and interventions, which has been presented in Table 1. The

overarching conceptualisation to be tested through this research, and outlining the proposed

relationships, is depicted in Figure 5. The model is informed by the current literature about

incubator services and draws upon the theoretical underpinnings of each of the HERO within

constructs, and psychological capital. Review and analysis of the published literature reveals

that there is limited research into the relationship between business incubator services and

tenants' positive psychological state of development. This current research study is focused

on examining whether the conceptualisation of the relationships proposed between incubator

services and tenants' hope, efficacy, resilience, optimism, and psychological capital, is

supported.
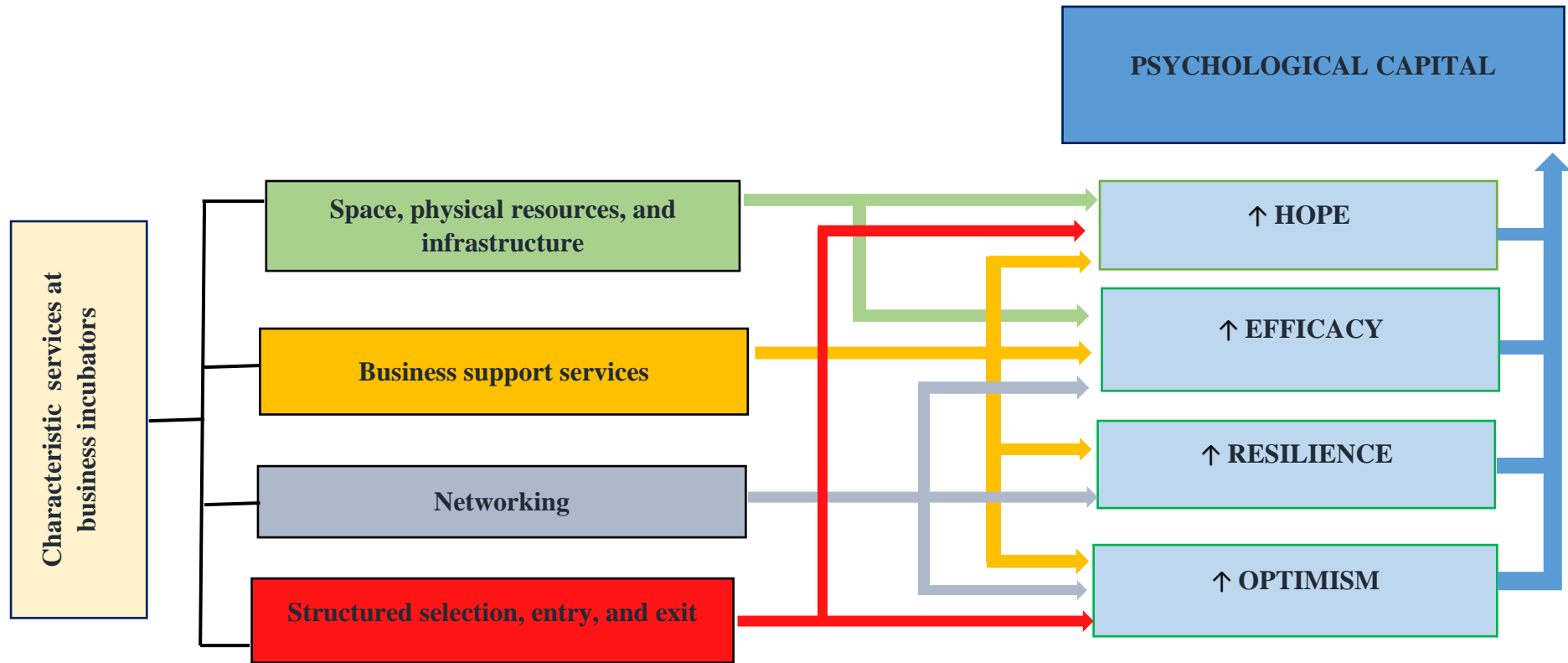
Figure 5. Conceptual model of the hypothesised relationships between the four characteristic services at incubators and tenants' hope, efficacy, resilience, optimism, and psychological capital.

1.11 Rationale and Aims of this Research

Extensive research has been conducted to broadly examine business incubators and the incubator industry. Characteristic services at incubators have been introduced with wide ranging benefits for tenant businesses, and local regional economies. The incubator research has however been siloed, focusing largely on the incubator operations and outcomes.

Preliminary examination of the four characteristic services at business incubators suggest that they share similarities with interventions that support the constructs of hope, efficacy, resilience, optimism, and psychological capital. This conceptualisation has been developed into a model which outlines the analogies between the four characteristic services of business incubators and the intervention strategies that support hope, efficacy, resilience, optimism, and psychological capital. This model is tested within the current research study. The conceptualisation offers new direction for incubator research with cross-disciplinary research that is founded on the strong theoretical underpinnings of psychological capital.

The published research identifies that incubator managers play an important role in the provision of services, and supports for incubator tenants. The centrality of managers within the incubator provides them with a unique perspective of how, and in what ways, the characteristic services available at the incubator influence and support tenants' hope, efficacy, resilience, and optimism, and potentially the psychological capital of tenants within the incubator environment. The nature and strength of the trust and relationships that they establish with tenants highlights that they have the potential to offer new insights about the role of incubator services in supporting hope, efficacy, resilience, and optimism.

As identified, research to test the validity of this model and to explore the premise that relationships exist between the characteristic services of business incubators and tenants' hope, efficacy, resilience, optimism, and their psychological capital is now required. A robust research framework was subsequently developed to shape and inform the proposed research.

Qualitative and quantitative data was collected from both incubator tenants and managers to examine the proposed relationships between the characteristic services at incubators and the constructs of psychological capital, and hope, efficacy, resilience, and optimism. To this end, a comprehensive research design investigated:

1. The existence of a relationship between the characteristic services of business incubators and tenants' hope, efficacy, resilience, optimism, and psychological capital.

2. Whether the relationship between the four business incubator characteristic services and the constructs of hope, efficacy, resilience, and optimism comprising psychological capital is reflected in tenants' narrative experiences.

3. Whether a relationship exists between the characteristic services of business incubators and tenants' positive psychological constructs of hope, efficacy, resilience, and optimism from the perspective of incubator managers.

Two studies were undertaken to test the conceptualised model. A research design incorporating a mixed methods approach was adopted offering a holistic research approach with the potential to generate deeper understandings to inform the research questions (Creswell, 2014) and to bridge the limitations that exist when only using one theoretical research perspective (Creswell & Plano Clark, 2018). Both survey and interview data were collected from incubator tenants and managers.

Study one investigated the existence and direction of the relationship between the four characteristic services of incubators and tenants' psychological capital and their hope, efficacy, resilience, and optimism. Interviews with tenants were undertaken to facilitate a deeper understanding of tenants' experiences at the incubator. This approach was adopted in order to gain new and subjective insights into the individual experience (Frels & Onwuegbuzie, 2013). This first study is unique as it is the first study to examine the

relationship between the business incubator characteristic services and tenants' hope, efficacy, resilience, and optimism that together and, in synergy, contribute to psychological capital.

A second study explored whether a relationship existed between the characteristic services at business incubators and tenants' hope, efficacy, resilience, and optimism, from the perspective of incubator managers. This study examined the narrative perceptions of incubator managers about the direct and indirect contribution that incubator services have on supporting tenants broadly, and the constructs that underpin psychological capital, specifically hope, efficacy, resilience, and optimism. Data was collected from incubator managers using an online survey and semi-structured interviews. A diagram representing this research design and incorporating both studies to test the conceptual model is presented in Figure 6.

The current research was designed to contribute new knowledge about the impact of the characteristic services of business incubators as potential interventions for tenants' psychological capital. These investigations will inform the incubator industry about the type of services that support and develop tenants' psychological capital. This research will also extend the current research into psychological capital by examining whether the incubator environment enhances tenants' psychological capital, both from the perspective of tenants, and that of incubator managers. The research has the potential to contribute important new insights about whether a relationship exists between incubator services and tenants' psychological capital, providing preliminary directions around how to better support incubator tenants' psychological capital. This in turn will assist and guide mangers to implement and prioritise services within incubators to enhance the tenant experience, leading to potentially improved business and performance outcomes.
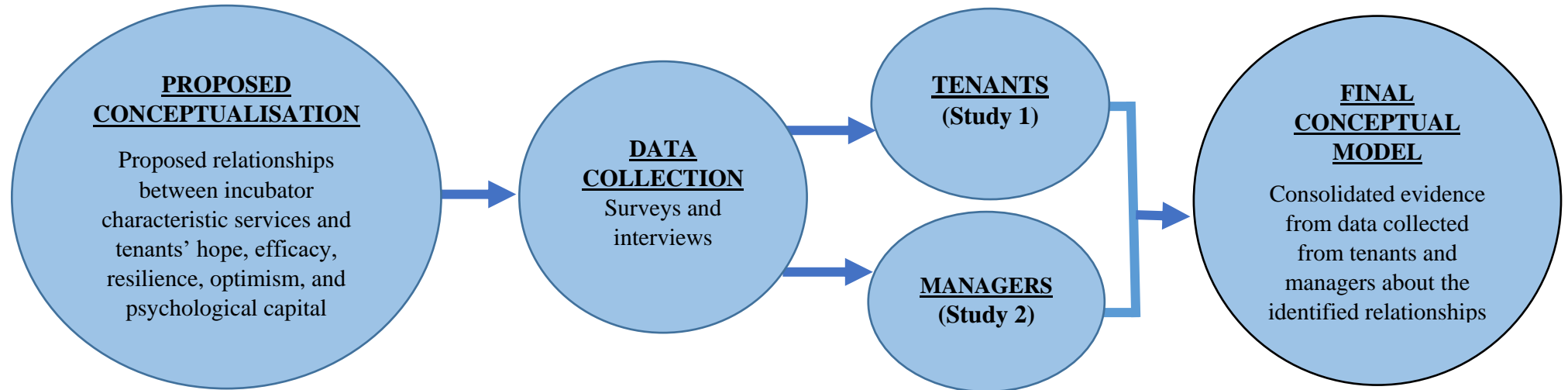
Figure 6. Plan of research to test the proposed relationships between the characteristic services at incubators and tenants' hope, efficacy, resilience, optimism, and psychological capital.

Chapter 2: Study 1

2.1 Overview

As identified, psychological capital is an important internal resource representing the positive appraisal of one's own capabilities and of sustained effort and perseverance despite inevitable obstacles, to enable success (Harms et al., 2017; F. Luthans et al., 2010; F. Luthans, Youssef, et al., 2007). Extensive research and theory attests to the veracity of this construct and its component parts; the four positive constructs of hope, efficacy, resilience, and optimism. Evidence clearly shows that, in synergy, these represent the higher order construct of psychological capital (Avey, Luthans, & Jensen, 2009).

The impact of psychological capital on positive and desirable workplace behaviours and attitudes has been widely established (e.g., Avey et al., 2011; Bonner, 2016; Guido et al., 2018; Paterson et al., 2014). Research into the application of psychological capital within other settings and population cohorts has also commenced, with similar, positive outcomes (e.g., Boamah & Laschinger, 2015; Datu et al., 2016; Kalman & Summak, 2017; Krasikova et al., 2015; Nielsen et al., 2017; Rew et al., 2017; Selvaraj & Bhat, 2018). Research, for example, has examined the relationships between psychological capital of entrepreneurs (Baluku et al., 2016; Bockorny, 2015; Chipfula & Wale, 2018; Contreras et al., 2017; Jensen & Luthans, 2006), however less is known about its application to entrepreneurs in different settings.

As previously detailed, business incubators are facilities that support nascent businesses and entrepreneurs to develop their businesses within a supportive environment comprising characteristic services that aid business development for sustained business growth and independence (Bliemel, Flores, Hamilius, & Gomes, 2014; Robinson & Stubberud, 2014). Despite the global popularity of business incubators and their contribution to regional economic development (e.g., Ayatse et al., 2017; Isabelle, 2013; Tavoletti, 2013),

there is a dearth of research examining their relationship, and that of the four characteristic services, on tenants' positive psychological state of development.

Closer inspection of the four characteristic services at incubators – space, physical resources, and infrastructure, business support services, networking, and structured selection, entry, and exit – suggests they are analogous to interventions that support hope, efficacy, resilience, and optimism. These assertions, however, are untested.

Robust research is now required to investigate the relationship between the four characteristic services at incubators and tenants' psychological capital. A conceptual model (refer to Figure 5) has been developed outlining the various predictions about the relationship between the four characteristic services at incubators and tenants' psychological capital and their hope, efficacy, resilience, and optimism.

2.1.1 Aim and Hypotheses

This current study aimed to investigate the existence of a statistical relationship between the characteristic services of business incubators and tenants' psychological capital and their hope, efficacy, resilience, and optimism. Based on the conceptualisation and subsequent modelling being tested in this study, it was hypothesised that:

1. The four characteristic services of business incubators (space, physical resources, and infrastructure; business support services; networking; structured selection, entry, and exit) will be related to tenants' psychological capital.

2. Space, physical resources, and infrastructure, business support services, and structured selection, entry, and exit offered through business incubators will be related to tenants' hope.

3. Space, physical resources, and infrastructure, business support services, and networking offered through business incubators will be related to tenants' efficacy.

4. Business support services and networking offered through business incubators will be related to tenants' resilience.

5. Business support services, networking and structured selection, entry, and exit offered through business incubators will be related to tenants' optimism.

In addition to statistical testing, this current study examined the relationship between the business incubator characteristic services and tenants' hope, efficacy, resilience, and optimism, as reflected in the narrative experiences of tenants. Data was collected from tenants using semi-structured interviews to gauge their experiences and perceptions of the characteristics incubator services in supporting the constructs of hope, efficacy, resilience, optimism, and psychological capital.

2.2 Methods

2.2.1 Participants

Thirty tenants (50% male; 50% female) aged from 19 years to 78 years ($M = 46.30$; $SD = 14.16$) completed the survey developed for the study. Most participants (90%; $n = 27$) held a tertiary degree and had operated their business for an average of 6.45 years ($SD = 5.03$). Participants were from Australia ($n = 13$; 43.3%), USA ($n = 11$; 36.7%) and the UK ($n = 6$; 20%), and on average, had been at their incubator for 4.10 years* ($SD = 3.91$). Participants came from incubators in urban ($n = 18$; 60%) and regional ($n = 12$; 40%) locations, mostly at "public, not-for-profit" facilities ($n = 14$; 46.7%) or university affiliated entities ($n = 8$; 26.7%). Four participants (13.3%) were in profit-based entities. Another four participants (13.3%) were unsure of the funding model of their incubator.

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Note. The duration that tenants remain within an incubator is usually 3-5 years (Dee et al., 2011). Tenancy greater than five years is unusual and suggests non-traditional tenancy arrangements are available at some incubators for tenants participating in this study.

Twelve survey respondents (males, $n = 5$; females, $n = 7$; Age: $M = 46.25$ years; $SD = 14.91$) also participated in an interview. Interview participants had operated their business for an average of 4.12 years ($SD = 2.88$) and had been located at the incubator for an average of 2.66 years ($SD = 2.62$). Interviews were conducted with participants in Australia ($n = 6$; 50%), USA ($n = 4$; 33%), and the UK ($n = 2$; 17%).

Sampling procedure

A list of contact details (name of organisation and email address) of peak incubator associations internationally was compiled. Contact details for peak incubator organisations were identified from publicly accessible directories, available on the International Business Innovation Association website (https://inbia.org/services/resources/), and via an internet search. Incubator peak organisations were only contacted if their website was written in English. The inclusion criteria for participants in this study was being aged 18 years or older and being a tenant located in a business incubator.

A database for individual incubators was compiled using publicly accessible directories, available from the International Business Innovation Association website and from the National Endowment for Science, Technology, and the Arts in the UK (www.gov.uk/government/publications/business-incubators-and-accelerators-the-national-picture). Relevant, published reports were reviewed as an additional method of identifying individual incubators. An extensive internet search for business incubators was also conducted by country, and state-by-state, for the USA. The database comprised the following information: Name of incubator, key contact person (CEO and/or manager, if available), website address, physical address and email address.

In October 2017, 50 emails were sent to peak organisations. This included 31 emails sent to peak incubator associations in 23 countries informing them of the research and requesting assistance to contact business incubators through their membership network. A

further 19 emails were also sent to peak incubator organisations in the USA. In total, staff from nine of the 50 organisations responded to the email.

Between October and December 2017 and March and October 2018 emails were sent to staff at incubators notifying them of the research and requesting assistance to distribute the research invitation to tenants at their facilities. Reminder emails about the research were sent in November 2017, and January and February 2018. The response from incubator staff to the emails, at both time points, is presented in Table 2. The researcher also telephoned and/or visited incubators in Victoria, Australia. A map of the incubators contacted for this research, by country, is available at: http://data.cerdi.edu.au/business_incubator.php

Table 2

Number of Emails Sent to Incubators and the Number of Incubators Confirming Circulation of the Invitation to Tenants, by Country.

Country	Total incubators contacted		Incubators circulating invitation to tenants		
	n (%)			*n* (%)	
	Time 1	Time 2	Time 1	Time 2	Total
Australia	51 (6.2)	38 (5.6)	3 (10.0)	5 (20.8)	8 (14.8)
Canada	13 (1.6)	9 (1.3)	0 (0)	1 (4.2)	1 (1.9)
Denmark	4 (0.5)	4 (0.6)	0 (0)	1 (4.2)	1 (1.9)
Ireland	21 (2.5)	20 (3.0)	1 (3.3)	0 (0)	1 (1.9)
New Zealand	21 (2.5)	16 (2.4)	0 (0)	0 (0)	0 (0)
Singapore	12 (1.5)	0 (0)	0 (0)	0 (0)	0 (0)
UK	194 (23.6)	175 (26.1)	10 (33.3)	8 (33.3)	18* (33.3)
USA	506 (61.6)	408 (61.0)	16 (53.4)	9 (37.5)	25* (46.2)
TOTAL	822 (100)	670 (100)	30 (100)	24 (100)	54 (100)

Note. Time 1 = Initial emails were sent to incubators during October and November 2017; Time 2 = Reminder emails sent to incubators in November 2017, January and February 2018.

*Two incubators from the UK and the USA sent the invitation to tenants at both Time 1 and 2.

Twenty-nine tenants located at four incubators were contacted directly by the researcher following advice provided by business incubator managers/staff. Contact email addresses for these tenant-businesses were publicly listed on each of the four incubator websites.

Staff from 36 incubators contacted the researcher to decline the invitation to circulate the invitation to participate in the research. Various reasons for declining participation in this research were cited, including:

1. Facility is not classified as an incubator ($n = 10$)

2. The incubator had a policy not to circulate material to tenants from a third party ($n = 7$)

3. The incubator had disbanded, or did not have any tenants ($n = 7$)

4. The incubator recently opened ($n = 5$)

5. The incubator would not participate for undisclosed reasons, or was unable to participate in the research ($n = 4$)

6. Incubator had or was already participating in other research ($n = 3$).

2.2.2 Materials

Email Invitation (Peak Incubator Associations). An email was sent to peak business incubator associations in Australia and internationally. The email introduced the research and outlined the scope of the study and its potential outcomes. An overview of the tasks that incubator tenants would complete as participants of the research was provided. The ethics approval number was included in the email along with the contact details of the researchers. The email requested assistance from the peak incubator association to contact members of their business incubator network about the research. The plain language information statement was attached to the email. A copy of the email invitation is included in Appendix A.

Email Invitation (Incubator Managers/Senior Staff). An email was sent to managers and staff at individual incubators. It introduced the research and the research team and described the study, outlining its scope and potential outcomes. An overview of the tasks that incubator tenants would be asked to complete as participants of the research was provided. The ethics approval number was included in the email along with the contact details of the researchers.

In the email, incubator staff were asked for assistance in contacting tenants at their incubator about the research. Attached to the email was a letter of invitation (the cover letter) to tenants, and the plain language information statement. A copy of the invitation to incubator managers is included in the Appendix B.

A second email was sent to incubators as a reminder. This email was updated in January 2018, following changes made to the study and incorporating broader strategies inviting study participation. A copy of the updated email is included in Appendix C.

The plain language information statement was attached to the email to incubator managers. It provided further information about the research and details about the proposed research activities to be undertaken by tenants participating in the research.

Cover Letter (Incubator Tenants). The cover letter prepared for incubator tenants invited their participation in the research. The letter, which was written on university letterhead, outlined the purpose of the research and the tasks (online survey; interview) participants would be requested to complete for this research. The letter also specified the time commitment involved in participating in this research. The plain language information statement was attached to the cover letter providing tenants with further information about the research. A copy of the cover letter is included in Appendix D.

The tenant letter of invitation was updated in January 2018, following changes to the study (a longitudinal component of the study was originally proposed but was later removed

due to low rates of participation) and incorporating broader strategies inviting study

participation (a YouTube video was developed). A copy of the updated letter is included in

Appendix E.

Plain Language Information Statement. The plain language information statement

provided comprehensive information about the research, including who was conducting the

research and the purpose of the research. It outlined information about the methods for

collecting research data (online survey; interviews). Information was also included about the

estimated time to participate in the research, participant confidentiality, data handling, and

storage.

The plain language information statement also stated that participation in the research

was voluntary. A statement was included emphasising that the research was being conducted

independently of the incubator and incubator management, and no information about tenants'

participation or non-participation would be shared with their incubator. The contact details of

the researchers were included in the plain language information statement along with

information outlining the recommended protocols in the unlikely event that tenants became

distressed during or after participating in this research. A copy of the plain language

information statement is included in the Appendix F.

Online Survey. An online survey was administered to incubator tenants. The survey

was developed using LimeSurvey, an online, open source survey tool. The results from the

survey were hosted by Federation University. The first part of the survey asked questions

about the tenant's age, gender, level of education, and about their business, including the

duration of time they had been operating their business and the industry sector their business

was aligned with. Questions elicited information from tenants about their incubator, including

the country in which their incubator was located, the age of the incubator, its purpose, and the

funding model under which it was established. Questions about the duration of time tenants had been at their incubator and could remain at the incubator, were also included.

Responses to the demographic and incubator questions comprised Likert scales, rating scales, and drop down, response options. A small number of free text responses were included for some questions.

The second part of the survey asked tenants about the characteristic services available at their incubator. Questions were categorised into four broad categories reflecting the characteristic services available at incubators:

1. Space, physical resources, and infrastructure. Questions examined the availability, usage and importance of the incubator workspace and amenities; administrative support; technology; low cost rental; convenience of location; and other infrastructure and facilities.

2. Business support services. Questions examined the availability, usage and importance of business mentoring and coaching; business development, training and education; and specialised business supports and services.

3. Networking. Questions elicited information about the availability, usage, and importance of networking with other tenants and incubator staff for business-related knowledge exchange and support. Questions about networking with tenants for social support and networking with members of the wider business community were also asked.

4. Structured selection, entry, and exit. Questions included the availability, usage, and importance of submitting a CV and/or participating in an interview to enter the incubator; preparation of a business plan; knowing the duration of time tenants could remain at their incubator; and availability/participation in performance reviews.

Tenants were asked whether they had access to these services and facilities, and if they had, whether they had used them in the preceding six months and if so, how frequently they had used the services. Irrespective of whether the service was offered at the incubator, tenants were asked to rate the importance of the service or facility to them/their business using a 10-point rating scale (1 = *no importance* and 10 = *high importance*).

The socio-demographics and the incubator characteristics questions were developed by the researcher and were informed by the previously published research of Al-Mubaraki and Busler (2010), and Kemp (2013). The survey was also informed by the research findings outlined in Albort-Morant and Orghazi (2016), Cohen (2013), Gerlach and Brem (2015), Isabelle (2013), Monsson and Jørgensen (2016), Schwartz and Hornych (2010), Tavoletti (2013), and Roseira et al. (2014).

At the conclusion of the survey, participants were asked if they would be willing to participate in an interview. Those who agreed to participate were asked to provide a contact email address. A copy of the survey is included in the Appendix G.

Psychological Capital Questionnaire. The recognised standard measure of psychological capital (Dawkins et al., 2013) is the Psychological Capital Questionnaire (F. Luthans, Youssef, et al., 2007). The 24-item, self-report questionnaire provides a total score for psychological capital derived from six-items each that measure hope, efficacy, resilience, and optimism. The items for each of the subscales are derived from pre-existing measures (Dawkins et al., 2013) including the State Hope Scale (C. R. Snyder et al., 1996), the Role Breadth Self-Efficacy Scale (Parker, 1998), the Resiliency Scale (Wagnild & Young, 1993), and the Life Orientation Test (Scheier & Carver, 1985).

To complete this questionnaire, participants were instructed to describe how they may think about themselves right now and to rate their level of agreement and disagreement with each statement using the response categories of 1 = *strongly disagree,* 2 = *disagree*, 3 =

somewhat disagree, 4 = *somewhat agree,* 5 = *agree*, and 6 = *strongly agree*. Scores for each

item were summed, with higher scores representing higher levels of psychological capital.

The psychometric properties of psychological capital and the compositional HERO

within states have been examined in the published literature. Internal consistency for the

reliability of Psychological Capital Questionnaire and the four HERO within components of

psychological capital have been widely documented and are reported above the "minimal

conventional standard" (Dawkins et al., 2013, p. 355). The validity of the Psychological

Capital Questionnaire has also been established with evidence supporting the discriminant

validity and criterion validity, with job satisfaction (F. Luthans, Avolio, et al., 2007). External

validity has been established with psychological capital and employee's performance,

satisfaction, and commitment (F. Luthans, Norman, et al., 2008). Sampling has confirmed

additional validity, with construct validity and discriminant validity having also been

established (Görgens-Ekermans & Herbert, 2013). However, with regards the construct

validity there have been calls for continued (Dawkins et al., 2013) and more extensive

sampling (F. Luthans, Avolio, et al., 2007).

The Cronbach alphas reported in the Luthans et al.'s (2007) study for psychological

capital and each of the HERO within constructs, comprising a participant sample of tertiary

students and engineering and technical employees, reveals adequate levels of internal

consistency: Psychological capital (ranging from .88-.89); hope (range from .72-.80), efficacy

(ranging from .75-.85), resilience (ranging from .66-.71), and optimism (ranging from .69-

.79).

Adequate levels of internal consistency reliability have been documented (e.g., Avey,

Luthans, & Youssef, 2010) with similar findings confirmed in a systematic review of past

research (Dawkins et al., 2013, p. 353). Furthermore, a meta-analysis of the psychological

capital research found that nearly 80% of the studies recorded reliability estimates, with mean

reliability calculated at alpha .88 (Avey et al., 2011, p. 138). In the current study, the internal consistency of the Psychological Capital Questionnaire was conducted. The Cronbach alpha coefficients for psychological capital was .93; hope .80; efficacy .91; resilience .78, and optimism .70.

The researcher gained permission from Mind Garden, the publisher of the Psychological Capital Questionnaire, to use the measure for this research, and to administer the questionnaire online. Permission was also granted from the publishers to make minor alterations to the wording of some of the questions, to contextualise them to the business incubator domain rather than the general workplace setting. For example, the words "work" or "job" were replaced with "business incubator", "my business" or "this business". A selection of questions from the Psychological Capital Questionnaire include:

1. I feel confident to set targets/goals in my business.

2. Right now I see myself as being pretty successful at my business.

3. I always look on the bright side of things regarding my business.

Mind Garden permits only a sample of three questions from the Psychological Capital Questionnaire to be reproduced in any publication, including theses. A copy of the survey instrument utilised in this research is therefore unable to be provided as an appendix.

Interview Schedule. Semi-structured interviews were conducted with tenants using a 14-item interview schedule consisting of open-ended questions. The questions were constructed to prompt insights from tenants about their experiences at the incubator. The questions examined the potential relationship between the incubator services and the four composite constructs that comprise psychological capital, namely hope, efficacy, resilience, and optimism.

The interview schedule commenced with two general questions about the type of incubator the participants were located in and the reasons they chose to move to the incubator to grow their business. Three questions in the interview schedule asked tenants about the overall contribution and influence of the incubator on their business. A related question asked participants to assess whether locating their business to the incubator had met their expectations.

Five questions asked whether, and how, the incubator and the services offered within it, supported the development of hope, efficacy, resilience, and optimism: the constructs that together form the higher order construct of psychological capital. As shown in Table 3 the

Table 3

Questions from the Tenant Interview Schedule that Focus on Hope, Efficacy, Resilience, and Optimism

Constructs	Interview questions that focus on this construct
Hope: Being focused on goals yet having the capacity to reorientate pathways towards a particular goal that will lead to success	In what ways has the incubator supported you to identify and achieve your business related goals? (Question 4) Has being in an incubator enabled you to succeed at your business goals and to remain focused on these goals, or establish new business goals? (Question 8)
Efficacy: Having the confidence to adopt and implement steps to be successful at challenging activities	In what ways has your involvement with the business incubator influenced your confidence in your own business development? (Question 6)
Resilience: Rebounding from problems and to strive to achieve and succeed beyond set goals	Has being in an incubator influenced the way you respond to difficulties and challenges with your business? In what ways have you been supported to overcome these challenges? (Question 5)
Optimism: Having a positive approach that leads to success, both with current and future tasks and activities	Has being located in a business incubator influenced the approach and directions towards your current (and future) business activities? (Question 7)

questions elicited information about how the incubator had supported participants' business confidence (self-efficacy), and had helped them to achieve and succeed at their business goals (hope). Questions were also asked about the ways in which the approach and directions towards current and future business activities had occurred (optimism) and how past challenges have been met and overcome (resilience) for them and their business, through the incubator.

Four questions were included in the schedule about the role of the incubator managers and staff. These questions were developed to understand how staff at incubators facilitate activities and services that inform or develop tenants' hope, efficacy, resilience, and optimism. A question was included about the role that staff perform at the incubator, in relation to the services delivered to tenants. A related question asked whether tenants consider incubator staff as having a role in supporting tenants' wellbeing as they develop their business. Insights to draw upon past and current experiences when tenants may have received support for their wellbeing were invited. These questions sought to understand the perceptions that tenants have of the role and importance of incubators and staff in supporting their wellbeing, complementary or in addition to supporting their business development. A question was also asked about tenants' connections with the wider community, beyond the incubator, and what influence this may have had on them and their business. The interview schedule is included in Appendix H.

Consent. Consent was required of participants prior to completing the interview. A copy of the informed consent form is included in Appendix I.

YouTube Video. A short video of the researcher briefly explaining the research was developed for prospective research participants. The video summarised the information about the study which is contained in the letter of invitation and the plain language information

statement. The link to the video was uploaded to the social media channel YouTube:

https://www.youtube.com/watch?v=nOpyQidO5Qo

The link to the YouTube video was included in the covering email/letter to incubator tenants. The link to the video was also incorporated within the launch page of the survey. The video was prepared as an additional method of introducing the research to prospective research participants.

2.2.3 Procedure

Prior to commencing data collection the research protocol was approved by Federation University Australia's Human Research Ethics Committee (Project approval number: A17-110; Appendix J). Six ethics amendment applications were lodged with the ethics office at Federation University requesting changes to the original application. Ethics amendments were submitted for the following reasons: to modify the study instruments including the survey and interview schedule; to expand the methods for recruiting participants to the study; to include a new study cohort to enable data collection from incubator managers; to contract an external transcription service to transcribe six manager interviews; and, to extend the original timeline for data collection. Further information about these amendments and the dates of approval are presented in Appendix K.

The tenant survey was piloted prior to circulation. A pool of academics, university research staff, higher degrees by research students, incubator staff, current business incubator tenants, and lay people ($n = 18$) tested the survey. Feedback confirmed the suitability of the survey questions, the applicability of the survey for online completion, and the estimated duration for completing the survey.

Two versions of the cover letter were prepared, each containing the same information but with two different web addresses linking to two homepages for the survey. Both versions

of the survey contained the same questions and information, however the order of survey questions was reversed in one version of the survey to prevent order effects.

The email was sent first to peak incubator associations. An email was then sent to the managers and/or other staff at individual business incubators globally. Managers that agreed to assist were invited to circulate an email to tenants containing a letter of invitation and the plain language information statement, prepared by, and sent by the researcher.

The second, less frequently used method for contacting incubator tenants was by emailing tenants directly about the research. Contact details for tenants were identified using publicly accessible directories of tenants at business incubators. Staff at four incubators advised the researcher to consult the public listing of tenants on their incubator website. This enabled the researcher to make direct email contact with tenants.

Recruitment of tenants at Australian incubators followed the above procedure. Telephone calls ($n = 16$) to some incubators were made by the researcher, to confirm receipt of the email and to provide an opportunity to share further information about the study with the incubator manager and staff.

Incubator tenants received an email with the covering letter inviting them to participate in the study. The email included a link to the online questionnaire. Survey completion took on average 12.28 minutes. At the conclusion of the survey, tenants were invited to participate in a follow-up interview. Tenants who agreed to an interview were asked to provide their email address for the researcher to make contact with the participant, to arrange the interview.

Interviews were conducted with incubator tenants between December 2017 and October 2018. Seventeen survey participants indicated their willingness to participate in an interview, with a total of 12 interviews conducted with tenants. The remaining five participants either (a) did not respond to the email invitation to participate ($n = 3$), despite

sending a reminder email, or (b) were no longer available to participate in an interview, due to time constraints ($n = 2$).

When scheduling interviews, the researcher emailed participants to identify their preferred date and time and the most convenient method (telephone; face-to-face; internet using Skype) to conduct the interview. All participants were supplied with a copy of the plain language information statement, the consent form, and a copy of the interview schedule one week prior to the interview. Eleven participants returned an electronic copy of their signed consent form, via email, prior to commencing the interview. One participant provided verbal consent to participate in the study, prior to commencing the interview.

Interviews were conducted between 6am and 9pm EST (Australia) to enable participants in countries outside Australia to participate in an interview during their business hours. Two interviews were conducted using video-enabled Skype, eight interviews were conducted via telephone, and two face-to-face interviews were conducted. The duration of interview ranged between 33:25 minutes and 97:08 minutes with the average interview being 55.66 minutes duration.

All interviews were conducted by the researcher. Interviews commenced with the researcher providing participants with a brief overview of the research and confirming with participants that they agreed to the interview being audio recorded. Participants were invited, both at the start and at the conclusion of the interview, to ask questions about the research. The structure for each interview was consistent with the question order outlined in the interview schedule. Some changes to the order of questions were made by the researcher when some responses were linked to questions which would be asked later in the interview schedule.

2.2.4 Data Analysis

Survey data was entered into the Statistical Package for the Social Sciences (SPSS; Version 25). Descriptive statistics and frequency distributions were conducted. Preliminary analysis of the data was performed to ensure no violation of the assumptions of normality and linearity of the survey data. A Pearson product-moment correlation was computed to test the relationship between the total score of importance for each of the four characteristic services (and the combined total), psychological capital (Psychological Capital Questionnaire; total score) and the four sub scores for hope, efficacy, resilience, and optimism. Due to the small sample size, regression analysis was unable to be conducted.

All tenant interviews were audio recorded and transcribed verbatim by the researcher into Microsoft Word. The qualitative data from the interviews was then coded to enhance the manageability of the raw text. Coding is a recognised and widely used method of converting and transforming raw data for qualitative inquiry (Auerbach & Silverstein, 2003; Saldana, 2016). Coding is considered an integral first step in preparing data for further, more detailed analysis, offering a mechanism for making data such as interview data, more manageable (Auerbach & Silverstein, 2003). It provides the basis for identifying patterns in the data (such as similarities or differences), enabling data to be categorised for greater significance (Saldana, 2016), and providing the foundation from which constructs can be developed from the theoretical narrative (Auerbach & Silverstein, 2003).

Coding provides a structure that supports qualitative approaches comprising a theoretical framework with an analytical approach. Grounded theory is one such approach, in which a bottom-up process of coding raw data is transformed into a higher level of enhanced understanding achieved through a process involving distinct yet sequential stages (Auerbach & Silverstein, 2003). Progressive understanding of the data commenced by taking raw text and coding it into relevant text. From this point, repeating ideas are identified from the

relevant text which then enables theoretical constructs to be formed, leading to a theoretical narrative of the research (Auerbach & Silverstein, 2003).

The procedure for coding the tenant interview data in this study was consistent with the methods outlined by Auerbach and Silverstein (2003). The approach shares similarities with structural coding in which data is coded to identify key phrases or content from interviews that align with the research areas of focus. This form of coding is also well suited to semi-structured methods of data collection and hypothesis testing (Saldana, 2016).

A design framework was prepared by the researcher to assist with identifying salient ideas aligned to the research focus. The design framework for this study is presented in Table 4. This, together with the interview questions about the constructs of hope, efficacy, resilience, and optimism, provided the reference point to assist the researcher to code relevant interview data.

Table 4

Design Framework for Guiding and Consolidating Raw Data from Interviews

Methods	*Units*	*Variables*	*Thematic framework and coding approach*	*Broad research questions*
Interviews with incubator tenants (*n* = 12)	Individuals: Incubator tenants	Hope Efficacy Resilience Optimism	Resources theory Broad coding approach; Structural coding	Are the characteristic services at incubators related to tenants' hope, efficacy, resilience, and optimism: the primary constructs that comprise psychological capital?
	Business incubator services	Space, physical resources, and infrastructure; Business support services; Networking; Structured selection, entry, and exit		Which services at incubators do tenants identify as providing assistance to them/ their business? How do these services assist tenants? What other services assist tenants, and their business?

Prior to coding, the interview transcripts were read by the researcher to gain a broad understanding of the data, and the scope of ideas presented. NVivo 12 qualitative data analysis software (QSR International Pty Ltd, 2018) was used to electronically code the interview data. Memos summarising each interview were created in NVivo. Reflections, thoughts, and ideas about each participant interview were documented in these memos, providing an important, initial review of the data (Bazeley & Jackson, 2014).

The researcher commenced coding the interview material by reviewing, then selecting, and highlighting salient ideas and phrases from the qualitative data. Memos and annotations were inserted by the researcher to comment on associations and linkages in the highlighted text considered important for further review. Extraneous interview data, unrelated to the research focus, was also identified, for later review, and possible exclusion from the data coding process, thus facilitating greater data management (Auerbach & Silverstein, 2003).

A review of the highlighted ideas facilitated the next stage of coding, and the identification of all repeating ideas. Repeating ideas represent the consolidated categories comprising similar, relevant passages or text (Auerbach & Silverstein, 2003). In the NVivo application, repeating ideas are categorised into "nodes" which are similarly described as the "compartments" where selected ideas or concepts are stored (Bazeley & Jackson, 2014; Edlund, 2007). The review of ideas drawn from the study interview data facilitated the development of a preliminary set of repeating ideas, which were given simple labels. These are presented Table 5.

Table 5

Preliminary Repeating Ideas following Coding of Tenants' Interview Data

Initial repeating ideas (*n* = 27)	
Addressing challenges	Location of incubator
Administrative support	Meeting expectations
Affordable space	Networking for business opportunities
Facilities and Amenities	Observing others
Business Services	Optimism
Comfort zone	Support to achieve goals and address challenges
Gaining confidence	Reasons/incentives for entering the incubator
Becoming a mentor	Building reputation and credibility
Gaining customers	Being resilient
Disadvantages at the incubator	Developing skills
Goals	Staff support
Gratitude	Staff mentoring
Internal networking	We are supported
Isolation	

A further, detailed review of the repeating ideas was conducted ensuring that the repeating ideas were categorised appropriately, and were neither too broad nor too narrow for their categorisation. Recoding of the repeating ideas was conducted as required. Upon review and reflection some of the groups of ideas were re-categorised or added to other repeating ideas that were considered to be more appropriate. In some instances, after the researcher had reflected extensively upon the tenant narrative, additional repeating ideas were developed. At this stage, the data was reviewed by a second, experienced qualitative researcher to assess the accuracy and consistency across and within themes. The second researcher undertook a similar process to that undertaken by the principal research and independently coded the ideas within themes, for consistency and rigour. Discussion of the data and some minor

reorganisation occurred following this process. This procedure is consistent with the collaborative coding process outlined in Auerbach and Silverstein (2003). This extensive review process ensured that the principal researcher did not (a) over-interpret the findings, or (b) become influenced by any pre-existing bias.

Once this process was complete, the repeating ideas were labelled and/or relabelled. This became the master list of repeating ideas. Suitable titles were given to repeating idea, supported by quotes from tenants, extracted from the interview transcripts. These quotes complemented the titles for the repeating ideas, providing an adjunct label that evokes the tenants' subjective experience pertaining to that repeating idea. This process of labelling is recommended by Auerbach and Silverstein (2003).

From the master list of repeating ideas, common themes were then identified. Themes were derived from a detailed review of all the repeating ideas. To achieve this, the researcher undertook further analysis and review of the repeating ideas with meaningful groups of similar concepts identified; these provided the foundation for an overarching theme. Themes were given a title and labelled with a brief, broad statement.

Finally, themes were organised into constructs comprising similar theoretical concepts, adhering to the methods described by Auerbach and Silverstein (2003). This process involved reviewing and then grouping like-themes. The connections and similarities between the themes became the basis for developing new, overarching theoretical constructs, which were then labelled. The structure of the qualitative data provides a distinct, hierarchical form in which the constructs have been derived from the themes which have been informed by the repeating ideas.

2.3 Results

2.3.1 Surveys

The survey data revealed that tenant businesses come from a diverse range of industries. The most common industry categories of tenants' businesses was "communication services", "cultural and recreation services", and "health and community services". Fourteen participants employed staff within their business with staffing numbers ranging in size from 1 to 34 employees, as show in Table 6.

Table 6

Frequency and Percentage of Participants' Business by Industry and the Number of Staff they Employ

Characteristic	% (*n*)
Industry category of business (*n* = 30)	
Communication services	16.7 (5)
Cultural and recreation services	13.3 (4)
Health and community services	13.3 (4)
Education	10.0 (3)
Retail trade	10.0 (3)
Finance and insurance	6.7 (2)
Personal and other services	6.7 (2)
Accommodation, cafes, and restaurants	3.3 (1)
Construction	3.3 (1)
Property and business services	3.3 (1)
Wholesale trade	3.3 (1)
Other: Aerospace; biotechnology	10.0 (3)
Number of employees (*n* = 13)*	
One employee	23.1 (3)
Two employees	7.7 (1)
Three employees	38.5 (5)
Six employees	7.7 (1)
Fourteen employees	15.4 (2)
Thirty-four employees	7.7 (1)

Note. Fourteen participants confirmed that they employ staff in their business but only 13 participants identified the number of staff that they employ.

The majority of participants described the industry focus of their incubator as "mixed use" and prioritising business growth and entrepreneurship within the local community for "enhancing the community's entrepreneurial climate", "supporting other entrepreneurs and the community", "building/accelerating growth in local community", and "retaining business in local community". The industry focus and priorities of each tenant's incubator is presented in Table 7.

Survey data showed considerable variation in services and facilities available to tenants at their incubators, as shown in Table 8. Most tenants appear to have access to services comprising three of the core characteristic services of space, physical resources, and infrastructure, business support services, and networking.

Table 7

Industry Focus and Priorities at Tenants' Incubators (n = 30)

Incubator characteristics	% (*n*)
Industry focus	
Mixed use	60.0 (18)
Consulting and business related services	10.0 (3)
Creative industries	10.0 (3)
Research and development	6.7 (2)
Manufacturing	3.3 (1)
Technology, web related	3.3 (1)
Other	3.3 (1)
Missing	3.3 (1)
Priorities of the incubator	
Enhancing the community's entrepreneurial climate	63.3 (19)
Supporting other entrepreneurs and the community	60.0 (18)
Building/accelerating growth in local community	56.7 (17)
Retaining business in local community	56.7 (17)
Jobs creation	43.3 (13)
Diversifying the local community	33.3 (10)
Identifying local spin offs/spin out opportunities	33.3 (10)
Commercialising technologies	30.0 (9)
Revitalising a distressed neighbourhood	20.0 (6)
Generating benefits for the sponsor organisation	20.0 (6)
Moving people from welfare to work	13.3 (4)

Table 8

Frequency of Available Incubator Services for Tenants (n = 30)

Incubator characteristic services	Availability of services at incubators (*n*)		
	Yes	No	Don't know
Space, physical resources, and infrastructure			
Workspace	28	2	0
Administrative support	17	12	1
Technology	28	1	1
Low cost rental	24	6	0
Location	25	5	0
Infrastructure	18	11	1
Business support services			
Business mentoring & coaching	26	3	1
Business development, training & education	25	4	1
Specialised business supports	15	12	3
Networking			
Networking at the incubator with staff & tenants	27	2	1
Networking for social support	27	1	2
Networking with the wider business community	23	7	0
Structured selection, entry, and exit			
CV & interview	22	7	1
Business plan	16	13	1
Duration at incubator	17	11	2
Performance reviews	15	15	0

In preparation for conducting correlations, adjustments to tenants' ratings of importance for each of the four characteristic services of incubators were performed to counterbalance a zero or missing score for those participants unable to rate the importance of a service because they did not have access to it. A total score for characteristic services as the proportion of the overall score was included. For each of the four incubator characteristic services, scores of importance for each of the "sub components" were tallied and then divided

by the actual number of available services. This ensured that every participant's response on the same scale was based on the services that were actually available to them.

Prior to performing correlations on the data, a scatterplot of the variables (psychological capital; total for the four characteristic services of incubators) was conducted to screen the data and conduct an initial assessment on the distribution of the data (Pallant, 2013). This scatterplot is represented in Figure 7. The direction of the data cluster indicates a positive linear relationship exists between the data. No extreme outliers were detected in the data. The direction, linearity and spread of the data in the scatterplot satisfied the requirements to proceed with further statistical interrogation of the data (Pallant, 2013).
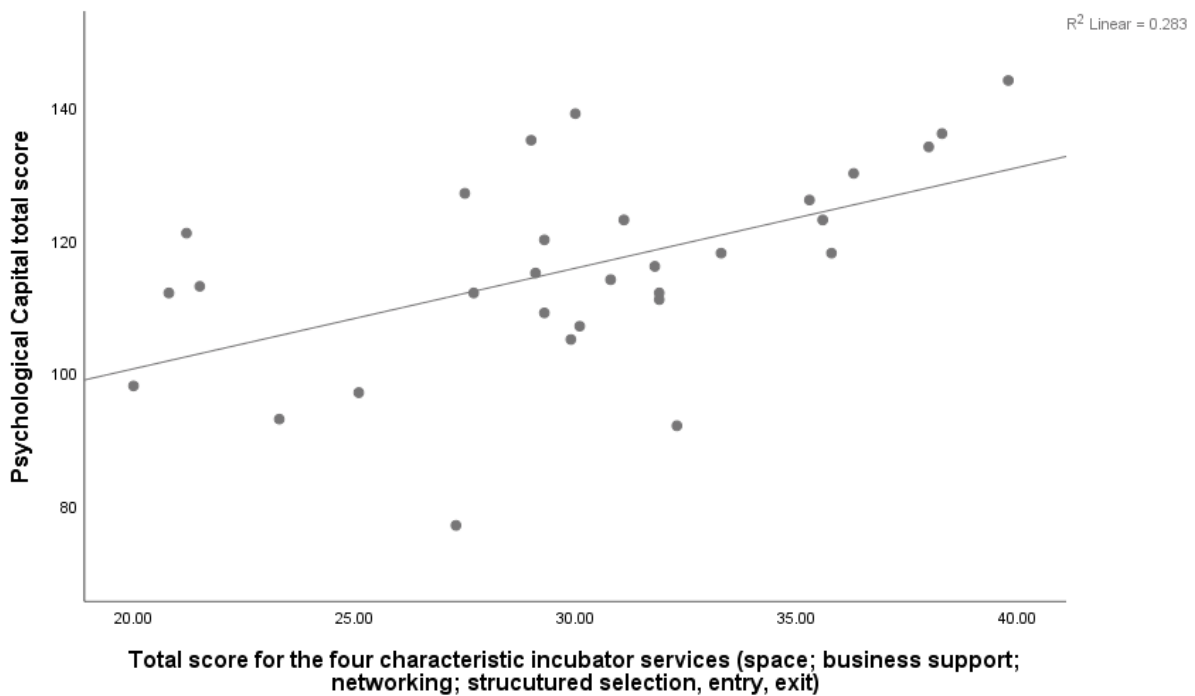
Figure 7. Scatterplot for tenants' psychological capital and total score for the four characteristic services at incubator.

The relationship between psychological capital, hope, efficacy, resilience, and optimism of tenants and the four characteristic services of business incubators was investigated using Pearson product-moment correlation. The results from this correlation is presented in Table 9. It can be seen that:

1. Higher levels of psychological capital were associated with higher ratings of importance for (a) space, physical resources, and infrastructure, (b) business support services, and (c) networking. This finding partially supports hypothesis 1.

2. Higher levels of hope were associated with higher ratings of importance for (a) space, physical resources, and infrastructure, (b) business support services, and (c) networking. This finding partially supports hypothesis 2.

3. Higher levels of efficacy were associated with higher importance ratings for space, physical resources, and infrastructure. This finding partially supports hypothesis 3.

4. Higher levels of resilience were associated with higher ratings of importance for (a) space, physical resources, and infrastructure, (b) business support services, and (c) networking. This finding supports hypothesis 4.

5. Higher levels of optimism were associated with greater importance ratings for all four characteristic services at incubators. This finding supports hypothesis 5.

Table 9

Correlations between Measures of Psychological Capital, Hope, Efficacy, Resilience, and Optimism and the Four Characteristic Services at Incubators

Scale	1	2	3	4	5	6	7	8	9	10
1. Psychological capital total	—									
2. Hope	.84**	—								
3. Efficacy	.89**	.68**	—							
4. Resilience	.89**	.64**	.73**	—						
5. Optimism	.90**	.69**	.72**	.75**	—					
6. Incubator characteristic services total	.53**	.45*	.37*	.51**	.55**	—				
7. Space, physical resources, infrastructure	.52**	.45*	.38*	.49**	.52**	.71**	—			
8. Business support services	.42*	.37*	.33	.41*	.40*	.88**	.45*	—		
9. Networking	.45*	.44*	.25	.41*	.49**	.88**	.54**	.71**	—	
10. Structured selection, entry, and exit	.36	.21	.27	.36	.39*	.76**	.46*	.55**	.53**	—

*$p < 0.05$ **$p < 0.01$.

2.3.2 Interviews

Analysis and coding of tenant interviews revealed 35 repeating ideas, categorised into 11 themes within three theoretical constructs. The themes and constructs are presented in Figure 8. Core themes are examined through closer exploration of the repeating ideas. Representative and direct quotes from tenants, captured during interviews, are used to support and contextualise the data comprising each repeating ideas.
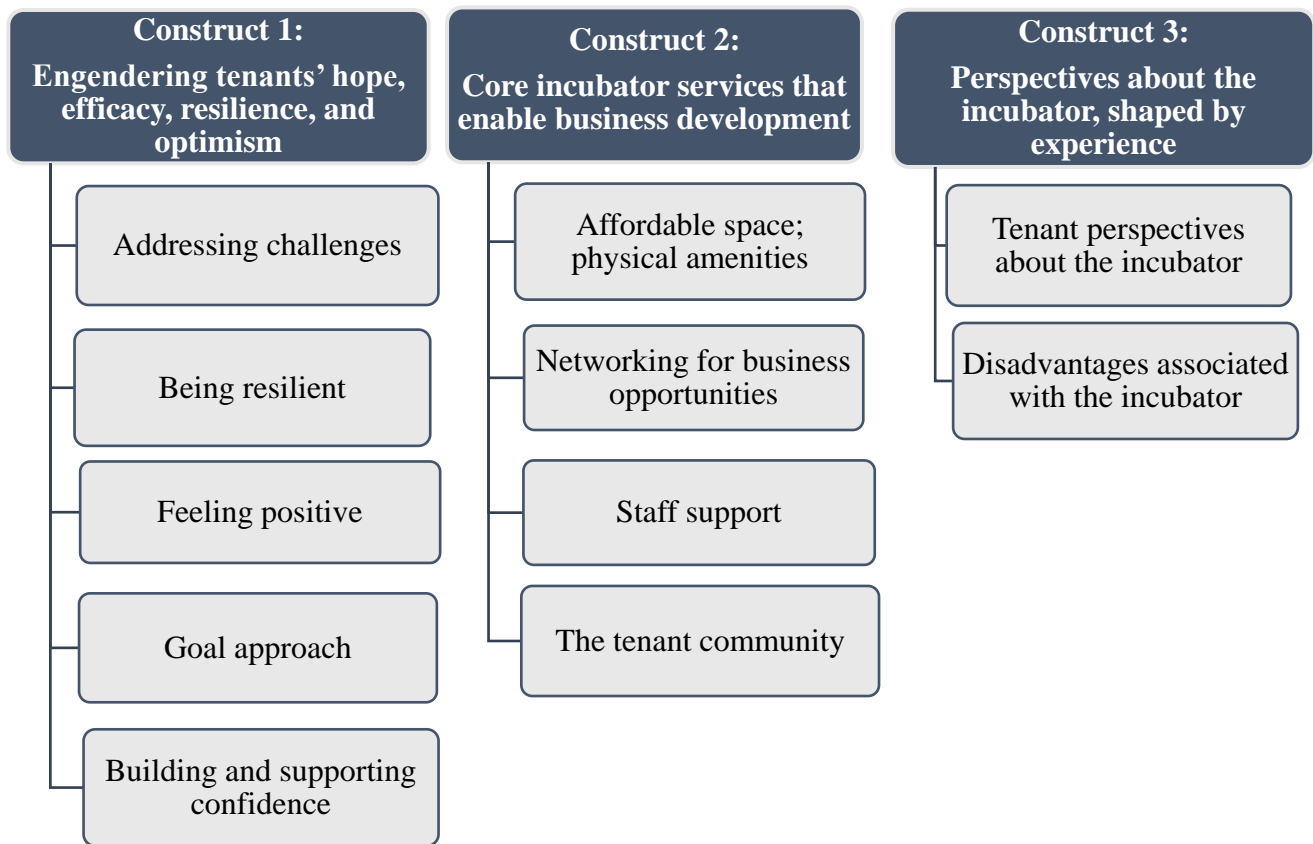
Figure 8. Constructs and themes identified through analysis of tenants' interviews.

Construct One: Engendering Tenants' Hope, Efficacy, Resilience, and Optimism

Five themes were associated with the first construct "engendering tenants' hope, efficacy, resilience, and optimism". The themes include (a) addressing challenges; (b) being resilient; (c) feeling positive; (d) goal approach; and, (e) building and supporting confidence.

This theoretical construct captures tenants' experiences at the incubator which directly and indirectly influences their perceptions, attitudes, and behaviours, representative of hope, efficacy, resilience, and optimism. Tenants reflected upon their experiences and described their approach to their business goals, and addressing the issues and challenges they encounter within their business. Tenants consistently referred to their incubators as providing them with the support and assistance to adapt and respond to their problems, to empower them to feel positive about themselves and their business, and to gain confidence in their approach and achievements with their business. Each of the themes comprising this construct are analogous with behaviours (in tenants), and interventions (through the support delivered at the incubator) that foster tenants' hope, efficacy, resilience, and optimism. This will be explored further, under each of the themes.

Theme: Addressing Challenges

The majority of tenants described experiencing a range of challenges in their business. Over half the tenants reported that potential challenges in their business had been pre-empted by the range of services and supports provided at, or facilitated by, the incubator. A quarter of the tenants referred to specific challenges they, or other tenants, had experienced in their business. They described how the incubator and the "resources" available within it – such as the incubator staff, the tenant community, or external resources that were brought in by the incubator to provide advice or practical solutions – had enabled them to resolve their problems and to continue with progressing their business. A small proportion of tenants commented that the support they received at the incubator had fostered their creativity and enabled them to be more confident in solving problems and to have a more creative focus on their business. Each of these areas, and representative evidence of the perceptions of participants relating to the ways in which support was provided to address challenges, is provided below.

Issues and problems are pre-empted (*n* = 7; 58%): *Pointing me in the right direction.*

They helped me quite a bit with the application side of things, I guess. Pointing me in the right direction, introducing me to other people who may be of benefit to my business and that sort of stuff (T_9).

…there was a business that was offering to help some of the businesses in the incubator to get their policies right, get their contracts right, giving free advice. They (the incubator) do that sort of thing which then helps the businesses in the incubator to grow (T_12).

Incubator assisted in finding a solution (*n* = 3; 25%): *One of the biggest hurdles I got through because of being here.*

If I have a specific need, I go to these people and talk to them and they try to connect me with someone through the network that could help (T_2).

Yes, getting advice was really important during that time because I was worried that I would be going down a legal path with the whole thing. It didn't go down that path but being prepared for that and knowing what I had to be careful of, prior to actually [describes specific action], I would never have known all those things had I not had the other community members here (at the incubator) and the staff, management here I would never know that…I would have walked into a minefield and blown up had I not been super careful and I was only careful because I had all the advice here. So that was one of the biggest hurdles I got through because of being here (T_8).

It may be a computer problem, a patent problem, or whatever it is, they can bring these people from the community in and then sit or work with the incubator people who need this particular help. People that are in the business community who spend time here and can help a particular company can help with a particular problem and that's across the board…(T_11).

Creativity and confidence in approaching challenges (*n* = 2; 17%): *You also feel more creative in your problem solving.*

I don't know whether this is a personal thing...but you feel less isolated; you feel better resourced…and you also feel more creative in your problem solving (T_6).

So the way you solve problems, because of this (the incubator), I do think you are a lot more open and a lot more creative. There is a lot less…can't say anxiety or stress…but a lot more open to possibilities (T_6).

We made those connections but being in that incubator made us, as a business, start thinking outside the square. Start thinking about who's in the community, what is happening in the community that we can be part of (T_7).

As can be identified in the exploration of the theme "addressing challenges", the data analysed presented a series of repeating ideas in which tenants described how they had been supported by the incubator to avoid or address challenges, and, gain confidence when approaching their business challenges. Solutions-based, goal-planning to overcome challenges is similar to interventions that support the development of hope. Rebounding from these challenges and persevering with their business goals is indicative of methods for building resilience. For some tenants, the support they receive at the incubator to approach and overcome challenges with their business was found to develop and build confidence in their own capabilities. The staff support and other specialised business support services offered at the incubator was assessed as facilitating and enhancing tenants' efficacy in their business approach.

Theme: Being Resilient

Rebounding from problems and moving forward (*n* = 6; 50%): *Better ability to problem solve and problem solve creatively and to take chances with your business.*

Half the tenants commented on how the incubator had assisted them to overcome problems and challenges in their business. Overcoming and rebounding from these problems appears to have strengthened their approach with their business. Tenants referred both implicitly and explicitly to building their capabilities with their business as a direct result of the support they received from the incubator. The provision of support given by staff at the incubator was frequently identified as integral to the assistance tenants received, as captured in the following representative statements, by participants.

They (the lawyers connected to and recommended by staff at the incubator) coached us through all the perils of establishing a business relationship with a business partner. In the end they coached us through what amounted to a separation. It turned out that ….we parted amicably but we weren't able to set up a construct for the company in terms of responsibilities and stock and how the original investments had come in and tax applications and things you just want to get started with your thing but it would have been awful if two years later we had then found out that we had all these problems and they are irreconcilable…(T_5).

(About the incubator): It builds that resilience that builds that confidence that then allows you to shoulder skills. Better ability to problem solve and problem solve creatively and to take chances with your business that can…I think now particularly the way the economy is, and the way our social-digital-everything is changing and changing so quickly, people need to take risks so they can future proof (T_6).

This theme, "being resilient", captures a series of repeating ideas where tenants described the support available at the incubator as assisting them to address and overcome problems and challenges. This is akin to strategies that enhance and build resilience. The coaching and mentoring that tenants received at the incubator appears to have been focused on developing strategies to build assets and address risks enabling tenants to avoid and/or manage these challenging situations. Furthermore, as tenants responded to, and resolved these challenges, this enabled them to remain focused on their current and future business goals.

Theme: Feeling Positive

Tenants being positive in their activities and personal perspectives relating to their businesses from their association with the incubator: (*n* = 7; 58%): *And that makes me feel really good. I didn't have it when I first started (at the incubator).*

Over half (*n* = 7; 58%) the tenants described their experiences with their business activities and business achievements in positive ways. Frequently, tenants drew parallels between these positive outcomes and the support they received at their incubator. Tenants reported directing their business activities and their approach to tasks and goals in a positive, yet realistic manner. This is captured in the following representative statements by participants.

But on a personal level, the achievements have been great for my self-esteem. I keep kicking goals and …I seem to have this thing where I keep achieving these goals even though I am not trying too hard to actually do these things. It's like with all this media, I've never actually gone to anyone else for all this stuff…it all just seems to come to me (T_8).

They (the incubator) obviously want you to succeed and in the early stages of a business you need that, you need that push. For me personally, I needed that push and that constant bombardment of information because I needed a kick and a head start and they definitely provided that quite well (T_9).

….I don't like to compare myself with them (a large global company) but I am just choosing them to compare…they have been around for so many years. What they have, I have the same exact thing. And that makes me feel really good. I didn't have it when I first started (at the incubator) (T_10).

The theme "feeling positive" shares similarities with interventions that support the development of efficacy and optimism. Tenants shared insights about their experiences at the incubator that assisted in developing their confidence in themselves and in their business product furthering their success. Performance success and the positive emotional arousal – evident in tenants reported experiences at the incubator – are recognised methods for enhancing efficacy and in developing confidence to achieve one's goals. Furthermore, the positive and realistic awareness that tenants have is representative of their optimism, exhibited in their ability to reflect on and appreciate the present and to progress towards new goals associated with business opportunities. Positive self-talk, reflecting on the past and appreciation of the present are methods used for developing optimism.

Theme: Goal Approach

Tenants reported their approach to goals in two distinct ways: the methods or services used by their incubator to support tenants' goals, and the manifestations of goal achievement. First, all but one of the tenants interviewed, described how the incubator had aided them in their goal approach. This usually comprised new, alternative, or practical methods that directly, or indirectly, supported their business goals. Second, more than half the tenants described how specific incubator supports and services had assisted them to develop their business skills. This appears to have supported tenants in ways such as consolidating or further developing their knowledge as they approach their business and associated goals.

Practical resources for growth (_n_ = 11; 92%): _They give these incubating companies all the non-physical expertise and knowledge that they need to have to grow their business._

I think the process (of being at the incubator) has helped and I think all the things we have discussed have helped us reach the goals and all of these connections in the network have helped us and we have a lot more coming and personal connections as well (T_2).

They (the incubator staff) say "for the next two months let's see – let's say I am working on getting into 10 stores – how will I be able to get those 10-stores, in the next two months? What are the things I need to do and how many of my product do I need to sell, how many accounts do I need to get?" You work on those benchmarks and you set them up and that helps because as a business owner you are so overwhelmed with all the things you are doing sometimes you just get side tracked by things and you don't even think about "oh I only get two accounts and I was meant to get 10 accounts in the last two months" because you are the one doing all the purchasing, you are the one doing the producing, you are the one doing demos. It seems if I was a much bigger company it would be a bit different but a lot of the building up has been done by me, by myself and so I benchmark…(T_10).

Another thing they do (the staff at the incubator) is help people figure out what, like the mission of the company, help with financial goals, account goals. So they help them from what it takes to run a business-side, not just providing space but what I think is the more valuable things…they give these incubating companies all the non-physical expertise and knowledge that they need to have to grow their business (T_11).

Skills development (*n* = 7; 58%): *It's like baby steps that gets you to that higher level.*

(About being located at the incubator): It's certainly helped to be more critical to our business having to explain our business in multiple arrangements during the application process to the incubator (T_1).

They ran some workshops in the beginning ... The trainer (name removed) was a very interesting fellow and he did know a lot about small business…little tax loops and things like that. He ran workshops around about every six months. I seem to remember I had been in business a little bit myself before I did one of his workshops and it was nice because it consolidated a lot of what I had been doing but then it added to it as well (T_3).

My original motivation was really just about the facilities and having permission. Knowing what I know now, there's a lot more to it. In particular, I found that the business mentoring that is provided has really been quite essential for us to succeed. Not so much in the laboratory but in terms of being able to capitalise on our successes (T_5).

It's like baby steps that gets you to that higher level and then all those things can be done by being part of <name of incubator> (T_10).

In this theme, "goal approach", tenants described the practical resources at the incubator and how these have assisted with developing skills for approaching and achieving in their business. This appears analogous to strategies that support hope and resilience. For example, the incubator resources (such as staff support, mentoring, training) available to tenants are akin to strategies that develop hope, such as goal setting and goal stretching.

Tenants similarly described developing, approaching, and attaining success in their business. Through interactions with incubator staff and their peers at the incubator, tenants are developing their assets and enhancing their business knowledge and skills. Coaching and training – such as that offered by incubator staff – can be used to effect strategies for building assets for positive outcome and building resilience.

Theme: Building and Supporting Confidence

When interviewed, tenants frequently described the benefits of, and the methods in which the incubator had assisted with building their confidence. Confidence building was associated with confidence in one's self, confidence to meet challenges, and confidence in gaining business independence and providing fellow tenants with informal business advice. The support available at the incubators, including the network, the staff, and the internal promotion of their product, appears to provide tenants a sense of confidence and pride in themselves and their business.

For all but one of the tenants, their confidence was broadly attributed to the incubator and, more specifically, the incubator staff and other tenants. Furthermore, for a third of tenants, their business confidence provided the impetus for sharing these experiences with other tenants. This is akin to an informal "peer mentor" where they impart informal support and advice to other tenants, on an ad hoc basis.

A small proportion of tenants commented on the incubator experience as having developed confidence in their own business and product, affording them a sense of autonomy, separate to, or independent from the incubator. Their reflections suggest that their own business autonomy has emerged out of the support received at the incubator.

Gaining confidence in self and business facilitated by the incubator (*n* = 11; 92%): *They boost my confidence...*

We were able to get more exposure to a wider variety of customers. They (the incubator) like to showcase our products and this gave us more confidence and made us more proud because we don't just have

external companies and potential customers giving us praise but also people who walk past our office and see our products and they get interested so we have a bit of a store-front effect and already people are telling us we are great that know us already (T_1).

I think the networking and connecting with other businesses like <name of company> or the other businesses like <name of company>, that are not as big. They boost my confidence to me (T_2).

I was confident about my skills but I didn't know how I was going to run the money side of it…so I needed to feel more comfortable about the small business model that I had, at that time, the manager <name of incubator manager> running this place and he was just brilliant as a mentor. I would say to him, just in passing, in the passageway, and I would say to <name of manger> "I've got to send out a quote" and he would say "well send it out" and I would say "I hate sending quotes" and he would assist me to see that there was nothing wrong with that (T_3).

(In commenting on the support provided by the incubator):…we wouldn't have had the confidence to try something, or we wouldn't have, outside that environment, I don't imagine (T_6).

Becoming a mentor - having the confidence to share and support other tenants and provide insights and advice (*n* = 4; 33%): *Encouraging the small businesses to hang in there.*

I think sometimes it happens spontaneously and sometimes someone will approach you with a very pointed question about…usually the pointed questions are a little bit more technical but not completely. More like: "our company has no experience with this and I am kind of embarrassed to ask anyone else. Your company does a bit of this, how do I get started?" (T_5).

I play a big role in encouraging…that's what I mean about the community encouraging the small businesses to hang in there and just concentrate on the business and not what's going on around. I think that's everywhere though…. (T_7).

Confidence through autonomy (*n* = 3; 25%): *I don't really need to go and have a chat or a heart-to-heart about things like I used to at the beginning.*

 I never wanted my business to rely on an incubator, which is the right thing, I think. I should be able to run my business independently and also use the help (at the incubator) to run my business (T_2).

It's much more relaxed now in my mind because I know how I am going to respond. I don't really need to go and have a chat or a heart-to-heart about things like I used to at the beginning (T_3).

This theme "building and supporting confidence" highlights the common experiences of tenants in establishing their business, and gaining personal confidence. The methods to support this, at the incubator, are consistent with methods that support the development of

efficacy. The ideas shared by most tenants suggests the delivery of services at incubators –

exemplified through training, coaching, positive feedback, and observation – enables tenants

to observe the positive behaviours of others. Tenants can model their own business

behaviours on this, gaining the benefits associated with positive emotional arousal and

performance success – including their own and others.

Construct Two: Core Incubator Services that Enable Business Development

Four themes were associated with this second construct, "core incubator services that

enable business development", and include (a) affordable space, physical amenities, (b)

networking for business opportunities, (c) staff support, and (d) the tenant community. Each

theme represents a service or approach incorporated into the incubator that is consistently

described by tenants as influential to them and their business. For instance, the affordability

and space available to tenants at the incubator is a practical support that is described by

tenants as enabling their business. Similarly, the support tenants received from incubator staff

extends an understanding of the breadth of the services available, and how these assist

tenants' businesses and business achievements. Networking for business opportunity, and

networking within the incubator, provides evidence of the influence that these incubator

services and features have in supporting tenants' business development through the formation

of important, professional and social relationships. Furthermore, the influence that each of

these services has on tenants and their businesses is described as supportive to tenants and

their hope, efficacy resilience, and optimism. This will be examined further for each of the

themes.

Theme: Affordable Space; Physical Amenities

The majority of tenants referred to the physical attributes of the incubator – such as

the location, space, and facilities – when describing its contribution to their business. Two

thirds of the tenants described the incubator amenities as providing practical and physical

support to operationalise their business. This included administration support, access to a workspace, and other resources that support the effective running of a business.

During the interviews many of the tenants commented on the benefits associated with having an affordable space at the incubator, along with reduced cost leasing arrangements. Tenants described the practical benefits associated with having an affordable space at the incubator. It assists to reduce their financial stress, providing some tenants with a sense of relief, gratitude, and creativity, and for some, to redirect these cost savings into other areas of their business.

Over half the tenants interviewed indicated that the physical location of the incubator was important to their business. For some, this provided new, strategic opportunities for business. Location was also identified as an enabler for tenants to connect with their clients and the wider community. Other conveniences tenants associated with the incubator location included onsite parking, and being in close proximity to home, the local business centre, and the shops.

For a small proportion of tenants, the incubator was associated with a sense of security. Tenants described the security as relating to personal safety and business security. This appears to be another important by-product associated with the physical space at the incubator. Each of these areas are captured in the following participant statements which are representative of the evidence which shaped theme development.

Amenities and facilities (*n* = 8; 67%): *Just nuts and bolts.*

I say that the printer is out of paper and they fix it. I say the phone isn't working and they say "we'll get someone onto it within the hour". I don't have to think about any of that stuff and there's a lot of it. There's actually more of that than you think there is when you first go into business, particularly in this computer age where all that technology has to work (T_3).

You have to go back to the benefits side…incubators are just essential if you want to start up the business. So that's just nuts and bolts (T_5).

All the things that they offered – great staff which helps you with marketing, administrative things, all kinds of equipment, copy machines, class rooms. This particular incubator has lots of classrooms, lots of computers…the facilities that they have and the equipment they have and the fact that they make it all available and help you with whatever issues you may have (T_11).

Affordable space (*n* = 8; 67%): *They also gave us affordable office space.*

They also gave us affordable office space, may be a third to a fourth of the cost of what we paid in <name of large city> (T_1).

And by not paying higher rent then you have more money to spend on education and training and you have more time (T_6).

They are basically allowing me to come in here and grab all the benefits, four days a week, on the highest plan, for pretty much nothing. So that's a huge help from them (T_9).

It's not financial support like they give you money. It's more what they are doing for us, to make us not worry about money so much (T_10).

Location (*n* = 6; 50%): *Location is an advantage.*

Because of the location the incubator picked is very strategic, there are suppliers, customers, partners as well as competitors and we are using the very close vicinity and we are using that close facility, weekly, at least twice where we have meetings and we walk two minutes and we go to the networking events here so the location is highly beneficial to us (T_1).

I think again location is an advantage. Close to home and close to the area you want to be working in and developing. New building, growth market area….similar professionals in the community (T_7).

The location of the building is actually quite important. It's located in the CBD, in a good end, a good part. I can go to where I need to the shops and it's close to the other businesses and it's close to my house (T_9).

This particular place is just in the middle of the city and the people who work here have such extensive reach into the business community that all those things together: location, the staff that so helpful and the leaders of this unit, they all seem to combine to make this, and I imagine any incubator, a place where people want to go and start their companies (T_11).

Security and comfort zone (*n* = 2; 17%): *You've got security.*

And physical security: the doors are good and they get locked and there are rules (T_3).

I think having a formal workspace and the amenities that go with it is really important. You've got a desk, a chair, you've got privacy, you've got security, so you can go there; you go to work and that's your office - your base (T_4).

In this theme, tenants described the physical space and amenities at the incubator as facilitating their business growth and associated activities. The provision and range of highly valued physical services appear to support tenant's efficacy and resilience, with the physical surroundings supporting tenants' positive psychological arousal and builds confidence in their capabilities, and expands their acquisition of assets. Furthermore, tenant's reported that the affordability of the incubator provided them with the financial security and practical benefits to enable them to work towards their goals. This is indicative of the construct of hope.

Theme: Networking for Business Opportunities

Two thirds of tenants reported that networking, both within and external to the incubator, was important to their businesses and provided them with new business opportunities, such as facilitating important business introductions. For a quarter of tenants, networking with other tenants at the incubator had facilitated opportunities to connect with other tenants who may become, or who had already become, potential business customers and suppliers. The reciprocal business relationships reportedly established between incubator tenants were considered beneficial. Some tenants reported that networking had also assisted with identifying potential competitors.

Networking for business opportunities (*n* = 8; 67%): *It brings accredited introductions.*

The network is so important to us because it brings accredited introductions and facilitates things with the owner of the incubator …. and this is one of our prime partners for our business as well (T_1).

And then being connected to different communities in the industry to start with. That would have taken much longer without the incubator's help and attending different businesses and programmes (T_2).

The other thing they do now is they hold, once a month, somebody knowledgeable talking about small business…so that happens once a month. It draws a reasonable crowd – and from outside the building – so it helps a little bit of a networking happening outside the walls of the incubator (T_5).

…that's what they spend a lot of time here doing is making sure there's enough networking things going on either every day, or at least weekly, that again, they can bring people from the community to interact with the people that are here and vice versa. It's a tremendous opportunity that way (T_11).

Networking with potential customers, suppliers, and competitors (*n* = 3; 25%): *I've already done some reciprocal work with people here.*

Then the types of companies that get introduced to us and walk around the incubator are super interesting. If they are not a potential customer they might be a potential supplier or competitor and all three of them we like to be aware of them and we like to engage with them and get to know one another and like renting an office in the city wouldn't give us that. This exposure is a big benefit … (T_1).

…being part of the incubator here, helped me to identify that and helped me to see – there is a book keeper here – and I was able to get feedback from other tenants who use that person and so I knew what she was like before I got her involved in my business and then she took over and it's been so much better. I am on the right path with it. So, being part of this was so good because of having that (T_8).

…I've already done some reciprocal work with people here. I have actually found other paying clients and things like that and projects that I am partnering with so it's moved quite quickly (T_9).

The theme "networking for business opportunities" enabled the building of evidence relating to the role of incubators in the provision of network opportunity. This opportunity was proven to enable an enhanced capacity to build the professional and personal assets of tenants by establishing valued, supportive connections with other businesses and tenant peers. Developing assets is a recognised strategy for developing resilience that can assist in buffering negative experiences.

Theme: Staff Support

This theme encompasses the insights and perspectives that tenants have about the incubator staff. Tenants categorised the assistance received from incubator staff into four key repeating ideas which reflect the broad and specific, personal and professional support offered to tenants by their incubator staff.

Over half the tenants reported that staff at their incubator had been instrumental in providing mentoring, and in offering other, important, unsolicited advice about their business, including acting as a "sounding board" and boosting tenants' confidence as they progress

their business. Half the tenants also identified that incubator staff had provided assistance when they had encountered a business problem. For some tenants, the advice of the incubator staff member had enabled them to remain focused on their business.

Half the tenants reported that the incubator staff had facilitated important business introductions. The comments provided new knowledge about the instrumental role of staff in expediting introductions that are valuable to tenants. A quarter of all tenants also commented on the professionalism of the incubator staff and of the skills they share. Each of these areas are captured in the following indicative statements by participants.

Advice-mentoring (*n* = 7; 58%) *The CEO is an incredible resource and an amazing wealth of information…*

I think again that being in the incubator and being able to discuss that with <name of manager> and saying to him "I think I am getting a different clientele from the ones I thought I was going to get" and he just let me bounce off him. And he would say that makes sense and say "do you want to build on that and make that happen more, or do you want to get other types of customers/clients?" (T_3)

I think we are in a good – may be a unique position – where the CEO is an incredible resource and an amazing wealth of information and he makes himself incredibly available. It must be on his calendar and he comes down, because we are physically a few hundred meters away, but he goes out of his way and visits and chats to us about ideas. He quite often just randomly comes across things that are relevant to our business and emails us through. So he is personally invested (T_6).

Those two people (senior staff at the incubator), just listen to what I am doing and offer alternatives or suggestions or experiences or putting me in touch with other people. That can address whatever concerns I have. Maybe this is turning out to be a commercial for those two guys. The staff is probably the key to the success of an incubating company (T_11).

Providing help (*n* = 6; 50%): *They are extraordinarily helpful.*

They (the incubator staff) are extraordinarily helpful but it's something that they are…they are 100% focused on your business success (T_5).

Sometimes if you have a problem, you don't know who the best person is to talk to so he (the incubator manager) is good at narrowing that down, plus he has so many contacts and experience that he can give you what he feels isn't going to waste your time or your trust (6).

When I need any particular help in any particular area I just reach out and they help me out. You don't have to have the staff or worry about building up a staff, you can concentrate more on what your business is and the things you need to do to grow it (T_11).

Introductions (*n* = 6; 50%): *They try to connect me with someone through the network that could help.*

So apart from the education, if I have a specific need, I go to these people (staff at incubator) and talk to them and they try to connect me with someone through the network that could help (T_2).

They (the incubator staff) are business-wise, literate in terms of what the community gains, so they can talk to you from first-hand experience about what happens in this town. They spend a lot of time out in the community, out in the businesses talking to these people and then sharing that with the people that are starting their businesses here (T_11).

Knowing the CEO and articulating what I do with him, on my business, valuing that input and him saying "I think you need to talk to x who is on the other side of the building". That to me has been quite valuable (T_12).

Professionalism (*n* = 3; 25%): *He's a fantastic gentleman and he really knows his stuff…*

Our incubator manager is an approachable lady; she's empathic and she's got the right personality. While she runs a tight ship, she's also got a good receptive manner (T_3).

One important thing about this incubator is that the heads of the incubator were really walking the walk. It wasn't someone who was talking to you about how it's okay if you feel uncomfortable about things …and coming down from their ivory towers. So, I am not sure if I could point to a specific way it made a difference but they were certainly leading by example (T_5).

He's a fantastic gentleman and he really knows his stuff when it comes to incubators and tenants and how to attract them, how to search them, how to take care of them, how to help them grow (T_11).

Tenants reported receiving extensive support from staff at their incubator. The mentoring offered by staff is similar to techniques that develop hope. It is positive and is directed towards solutions thus enabling tenants to remain focused on their business goals, even when they encountered challenges. Furthermore, the provision of mentoring to assist tenants to address their challenges, including the practical and emotional support to overcome hurdles, appears to have assisted them to remain focused on their business and associated goals. There is also evidence from tenants that the support they receive from staff fosters,

through mentoring, coaching, and social support, a sense of positivity that is enhancing tenants' optimism. The insights gained through analysis of the data shows that at times, it halts tenants' negative thoughts and enables them to develop a sense of positivity in where they are and what they are seeking to achieve in their business.

Theme: The Tenant Community

Tenants reported a range of benefits from the tenant community, fostered through the reciprocity and support they receive from their peer network. Three quarters of the tenants described the formal and informal networking that occurs within the incubator as being a network of support that facilitates informal advice giving, and the sharing of ideas. Over half the tenants reported observing other tenants at the incubator. They describe learning through observation, and understanding more about other tenants' businesses.

Some of the tenants commented on the camaraderie, mentorship, and trust that they have established with other tenants. This was considered another important feature of being part of the incubator network. A third of the tenants described forming friendships with other tenants at the incubator. This provided tenants with social support that is generated by the sharing of common goals for developing their own business and they described this relationship using terms such as "community" and "family". Furthermore, a small number of tenants indicated that being at the incubator had assisted in reducing the isolation they had experienced before entering the incubator, when working from their home office, or elsewhere. For one tenant, this had enabled them to gain a clearer focus on their business.

Just under a half of tenants recounted details about the formal methods and structures that staff at their incubator had introduced, enabling tenants to meet and connect with other tenants. The benefits of this are associated with problem solving through information exchange, and networking which occurs during formal and informal events held at the incubator.

Formal and informal networking for support, advice, and problem solving between tenants (*n* = 9; 75%): *There is a lot of opportunity for community networking.*

Even with the people I meet in the corridor here. Sometimes I say "hey have you got time for a coffee because I've got something I really need to talk about?" and we do that with each other and it's great. It might happen about once a month. It might be someone who says "please can we have a cup of coffee?" and there's an immediate debrief or consultation about something that's complex like that. That's lovely, it's really lovely to have that in the building (T_3).

… but there is a lot of opportunity for community networking. The whole place is designed to facilitate that. Even going to have a coffee we are forced to run into other people which allows for opportunities – even just casual conversations – we might brain storm ideas and that sort of thing (T_6).

Even sometimes just listening…somebody else will be saying "I've just got a couple of questions: I am trying to do x, y, and z, but I don't know how to do z?" And then you sometimes may not have encountered that problem or not have addressed it and it gives you an opportunity to go "so how does that apply to us?" Sometimes you don't know what you don't know. So talking about other businesses problems prompts you to widen your experience to other people (T_6).

Advantages is definitely the networking. The community of the incubator – the other tenants. The other tenants simply because we are all small businesses facing similar challenges and similar hopes and dreams. So to be able to talk to and communicate with and socialise with people and share stories, share our hopes and dreams with, share our challenges, learn off each other that was the major advantage that we left with, which was excellent (T_7).

Observing others *(n* = 7; 58%): *… being surrounded by people who are also building businesses is quite inspiring.*

This incubator is really quite focused on grooming companies to be able to stand in front of investors, such that they can graduate. It goes all the way to the core of their revenue model, that graduating companies and then back filling with bright-eyed new companies that have seen the success of the old ones is the original vision and so there is lot of focus on that but I can think of other important goals that a business should have (T_5).

I find that the support from the other tenants really good because they understand, they are in the same place…they've just gone through that issue potentially they are about to go through that issue...that's the part that I have found amazing (T_8).

I think as a small business, and you've probably heard a million times before, but being surrounded by people who are also building businesses is quite inspiring. You can see their challenges without actually, necessarily talking to them but it might be some of your challenges, so for instance, they are trying to grow or they are trying to progress and so are you because if they had, they would probably have moved out of there (T_12).

Camaraderie, mentorship, and trust in the tenant network (*n* = 4; 33%)*: Like being in a business tribe.*

It is a bit of a camaraderie in the sense …you can see others who are…nobody is making the salary they would if they left. Everybody is staring at a cash burn that is dreadful. So I think it provides a… just having folks together who are going through it with you, that's also …there's transparency in a not for profit, they are transparent also (T_5).

One business is kind of isolated so as soon as you interact with another business or another person you are then going to have bridges or things you get to figure out which is like being in a business tribe (T_6).

Everyone gets on so well here. And everyone helps each other. We celebrate things…there was a business who had kicked some sort of goal and it was great and we had the cake and invited everybody to it. It was used as an opportunity to go "hey this person has achieved this goal" and everyone was like "good on you" (T_8).

Structured networking between tenants, facilitated by the incubator (*n* = 5; 42%): *There is that nice exchange of things.*

So we will all sit around the table and go around the table and say who we are and what we do and then people will casually ask questions like "how do you get into that?", "did you have some start-up funding from the government?" Just questions like that. And someone will say "you'll have to go and apply to council" and they will say they didn't know about that and ask if they can catch up later to discuss. So there is that nice exchange of things like that (T_3).

You couldn't pay people to talk to each other…they would throw a happy hour and offer free drinks and nobody would show up. So I know that was a distress but they resolved it in part by moving to a new space, where the space itself was situated that you just can't move about during your day without interacting with people. They (the incubator) worked with an architect to ensure that that happened and they established a much more accessible…it's trivial thing…but a lunch room that didn't used to have…I don't know what they did but people didn't used to eat in the lunch room and now they do. There's now much more of a community and also, seriously, a success of architecture (T_5).

They have maybe, for sure, one afternoon where they bring all the incubator tenants and they share their experiences back and forth, over the course of a couple hours. They have lunch or they bring their snacks and everybody talks about the good and bad things that happen to them and then other people share what happened, how to solve it, or they tell them how they solved it. So there's a lot of airplay between the incubator tenants here and I think that's something that's intentional (T_11).

Friendship and social support (*n* = 4; 33%): *We've got a bit of a family here.*

… the other tenants. Just knowing that we've got a bit of a family here (T_3).

And there is no sand paper between…like when we rub up against each other I never sense friction. I

don't know whether I am just not noticing…I don't notice any friction I just notice people saying "g'day, how are you? I haven't seen you in a while. Have you been away?" There's just this lovely atmosphere. People are caring for one another (T_3).

And also the friendships that you build because you have a common goal a common something that…if you went to another building that had a whole lot of offices, everyone doing their own thing but this was goal-focused…everyone similarly had the same goal and that is to grow their business. So that was definitely a positive (T_7).

…I think the best part of it is the networking with other people. It's the variety; there's such a diverse group of people and having that is more crucial than anything else. Having that community having the people I consider to be my co-workers even though they don't work here, who are friends, even though I don't connect with them really…well a little bit I do….outside of work. It's at work I am connecting with people but I still consider them to be my friends because they are not technically my co-workers because they don't work in my business so therefore we can be friends (T_8).

I help them…we are all friends with each other and we all kind of support each other when we can (T_10).

Addressing isolation *(n = 3; 25%)*: *You feel less isolated.*

So it is very useful and so that is why we moved in but also, I suppose, having some of the facilities and other people about – I mean being at home can be incredibly lonely…(4).

I don't know whether this is personal thing...but you feel less isolated; you feel better resourced…and you also feel more creative in your problem solving (T_6).

In summary, this theme captures repeating ideas associated with reciprocity, support, and skills development as tenant's network with other tenants at the incubator. Formal and informal networking between tenants was identified as offering opportunities for modelling of successful goal-directed behaviour. Observing success through vicarious experience, and of social persuasion, positive arousal, and feedback leads to increased confidence. Confidence through performance success, for themselves and others, is akin to strategies that can develop efficacy. Similarly, through their interactions with their peer network, tenants identified they are sharing and receiving advice from other tenants about their business or problems within it, which in turn, supported and strengthened their business and the

approaches that they take. Solutions-based training from peer mentors can assist in supporting goal development and pathways for goal success, associated with hope.

The social support received within the incubator community appears to foster friendships between tenants at the incubator. Networking can build social capital and the potential to develop assets that can support resilience.

Construct Three: Perspectives about the Incubator, Shaped by Experience

In the third construct "perspectives about the incubator, shaped by experience", two themes were identified, including (a) tenant perspectives of the incubator, and (b) disadvantages associated with the incubator. The perceptions that tenants formed about the incubator appear to have influenced their own experiences. This both positively and negatively shaped and influenced tenants, and their businesses.

In the first of these themes, the general experience for most tenants, when talking about their incubator, was positive and affirming. This sense of positivity is associated with the attributes of the incubator that support tenants' businesses. This is reflected in the broader insights about what the incubator means to tenants, and how this influenced their perceptions and feelings about the incubator, and their business. Conversely, the second construct represents the experiences that tenants have had at their incubator which are considered to have disadvantaged them or their business. Some of the disadvantages reported by tenants appear to hinder or prevent the development of the hope, efficacy, resilience, and optimism.

Theme: Tenant Perspectives about the Incubator

This theme includes a range of perceptions that tenants have about their incubator. Tenants' comments were frequently contextualised to their reasons for entering the incubator, and their perceptions of operating their business from the incubator. Tenants offered various reasons for relocating their business to their incubator. These include recommendations about

the incubator, being within a professional business environment with access to support, and the physical attributes of the incubator that allow space for businesses and their staff.

Two thirds of tenants reported that the reputation and credibility of their incubator was an inducement for entering the incubator. Being at the incubator had enhanced the credibility and reputation of their own business and was perceived to increase the professionalism of their business.

A quarter of tenants referred to how the incubator had addressed and exceeded their expectations. Two tenants described being grateful to the incubator for supporting their business.

Reasons and incentives for moving to the incubator ($n = 10$; 83%): *We were looking at a better environment that would service our growth.*

This incubator was recommended to us by a company that is already in the incubator who said that this incubator will be of great support for businesses like ours (T_1).

The decision was that if we didn't (move to the incubator) we couldn't really grow and develop because it would be too difficult. We needed somewhere where we could be, and people could come and all that (T_4).

We were looking at a better environment that would service our growth because sitting on the high street doesn't do that. There's more marketing and messaging that's required to our audience to cultivate the sale, so we thought we needed an avenue that would allow us to investigate and experiment with that (T_6).

I needed to be in a professional environment where I could have staff come here (to the incubator) rather than coming to my own home. This opportunity came up so I moved out here to the incubator. It looked like it would suit our needs (T_8).

Reputation and credibility ($n = 8$; 67%): *It does give your business a professional aura.*

If we are in this incubator <name of incubator> some companies might see it as a stamp of approval that we are not only a business in a garage but actually gives us a stamp of approval that we are a genuine, good business which is worth being supported by such an agency (T_1).

I think it's important to business to come across (to the incubator)…especially coming across from home-based, I think you're also…like the people that did come and visit us, the clients, it does give your business a professional aura, which I think is important (T_7).

Yes, every time I am somewhere I tell people I am part of my incubator and they so "oh my god, that is so great and I am going to support you guys because I love what that organisation is doing". That just alone is something that is really good marketing and publicity for us actually (T_10).

Meeting expectations (*n* = 4; 33%): *It does meet and exceed our expectations so far.*

It does meet and exceed our expectations so far. We were expecting that maybe it would be attractive to be in the incubator, physically, during the time we thought we would sign up for it to get the free support, we get the money (T_1).

It's good to be there, to be part of something. I didn't have any huge expectations so I haven't been disappointed (T_4).

Gratitude (*n* = 2; 17%): *I am very grateful and thankful that I have found them (the incubator).*

Everything about this network, the facilities and the people, and the exposure these things we saw as a bonus and we are really grateful (T_1).

I am very grateful and thankful that I have found them (the incubator) and they accepted us and they provided all the support and help…(T_2).

We are supported (*n* = 2; 17%): *They were standing behind me.*

…when we moved in we have our own office space, there is cleaning, there is health and safety, there is emergency training, we have a one-month notice period for the offices. It's really a massive support for a small business to have that taken off our shoulders (T_1).

They (the incubator) were standing behind me and supporting me and now I have started that. That is a great help also (T_2).

The repeating ideas captured within this theme suggest that for some tenants their perceptions about their incubator builds their confidence, and is associated with developing their efficacy. The reputation and credibility that tenants report the incubator gives their business appears to build confidence in their own business and appears to support efficacy.

Theme: Disadvantages Associated with the Incubator

Some tenants reported various issues or disadvantages associated with their incubator. A third of tenants reported that some aspect of the incubator programme or services had

hindered their business, while other tenants reported that the level of support and the breadth of understanding by staff at the incubator was insufficient. A third of tenants commented on how incubator staff could improve and/or extend the services they provide. These suggestions were often shared by tenants in response to their dissatisfaction with the overall support they had received at their incubator. For two tenants, their relationship with the incubator staff had collapsed. These tenants attributed this to perceived differences between themselves and the incubator staff, relating to the incubator's formation and development.

Hindering business (*n* = 4; 33%): *We have wasted a lot of time.*

One of the major disadvantages is because some of the services have been provided…with no cost. We have wasted a lot of time which could damage the whole image; the whole vision….we spend time and we connect with these people…but they don't deliver, so that to me is damaging (T_2).

It would be good if more information about who else was there (at the incubator) was shared. Again, I spent a bit of time giving…offering some of my expertise to one of the other incubator companies who has now moved on and it didn't work out terribly well for us (T_4).

There's a lot stuff (at the incubator) that is all about marketing and too many workshops on that, and basically sometimes it's like, that's not what I need right now. I've done all my marketing, I've got that this and I've got that, you know? (T_7).

Lack of support – lack of understanding (*n* = 4; 33%): *Our incubator could do more…*

Having a bit more advice from them or support would be nice. Maybe a meeting about what's expected of a business plan. Even things about whether there is a better place to bank than other places (T_4).

I definitely think our incubator could do more in promoting the services, or going out in to the community, going out into, rather than staying in their box (T_6).

Because ultimately, the people who run this place don't own businesses themselves, so they don't understand. So they can go to university and they can study all this stuff but until you have your own money on the line and you're actually running a business you don't really understand how difficult it is, how emotional it is, how all things that go with it…it's one of those things (T_8).

Recommendations for improving/extending staff support (*n* = 4; 33%): *It would be great if you met regularly with them.*

It would be great if you met regularly with them and they said, "how's it going?" and "what are you doing in the businesses? Is there anything we can do to help?" (T_4).

You are there at a very, very crucial point in your business where you do need that support but also, the support that you're given, I feel very strongly about that, it should be, it's a very crucial time so the people around you, or the leadership around you or the team around you to lend you support, it's so crucial that they be the right people (T_7).

There are so many hats that you wear as a business owner and underpinning all of that is your mental health and if that's not in a good place. One of the most simple, it's the most simple thing, I really thought would happen…but may be it is naive of me to think it would happen, but I honestly felt like, when I moved in here I had a vision of it being like he/she (the incubator manager) would just walk around once a day and ask "how are you going today?" It's so important to ask people how are you or are you happy. It's such a simple question – "are you happy?" Like, nothing about your business, just "how are you?" (T_8).

Breakdown in tenant-staff relations (*n* = 2; 17%): *Management has their own agenda.*

So given the opportunities that an incubator can give is awesome, so long as we have the right management around, or the right team around to be supportive in them (T_7).

The disadvantages….how do I put it? The management has their own agenda. When you create a community you have to respect the fact that the community will take on a life of its own and people in that community will build relationships and help each other. When management looks at what they've built and are unhappy with what they have built and tries to stand in the way that becomes a problem (T_8).

In this theme, various concerns are raised by tenants about the incubator and/or its staff. The problems raised by tenants suggests that this may have hindered the development of their hope, efficacy, resilience, and optimism. For example, the issues that tenants report suggests a disruption to the development of their goals, and or developing and building their assets. In turn, this may have affected tenants' hope and resilience. These concerns are notable but have only been reflected in a small number of interviews with tenants. There were no indicators of this issue collected in the quantitative data.

2.3.3 Summary of Interview Data

The qualitative data provides extensive insights from incubator tenants about their experiences at the incubator and their perceptions about the services they receive. Themes were coded across three constructs: engendering tenants' hope, efficacy, resilience, and optimism; the core services at incubators that enable business development; and perspectives about the incubator, shaped by tenants' experiences. Assessment of the themes suggests the methods of support available to tenants at incubators, and the experiences of tenants at the incubator are associated with hope, efficacy, resilience, and optimism. An overview of the qualitative data is presented in Table 10.

Table 10

Constructs, Themes, and Repeating Ideas Identified through Qualitative Analysis of the Interviews with Incubator Tenants and Links to Hope,

Efficacy, Resilience, and Optimism

Construct	Theme	Repeating ideas	Linkages established between themes and hope, efficacy, resilience, optimism
Engendering Tenants' Hope, Efficacy, Resilience, and Optimism	Addressing Challenges	Issues and problems are pre-empted; Incubator assisted in finding a solution; Creativity and confidence in approaching challenges.	Hope; resilience; efficacy
	Being Resilient	Rebounding from problems and moving forward.	Resilience
	Feeling Positive	Tenants' being positive in their activities and personal perspectives relating to their businesses from their association with the incubator.	Efficacy; optimism
	Goal Approach	Practical resources for growth; Skills development.	Hope; resilience
	Building and Supporting Confidence	Gaining confidence in self and business facilitated by the incubator; Becoming a mentor – having the confidence to share and support other tenants and provide insights and advice; Confidence through autonomy.	Efficacy
Core Incubator Services that Enable Business Development	Affordable Space; Physical Amenities	Amenities and facilities; Affordable space; Location; Security and comfort zone.	Efficacy; hope; resilience
	Networking for Business Opportunities	Networking for business opportunities; Networking with potential customers, suppliers, and competitors.	Resilience
	Staff Support	Advice-mentoring; Providing help; Introductions; Professionalism.	Hope; optimism
	The Tenant Community	Formal and informal networking for support, advice, and problem solving between tenants; Observing others; Camaraderie, mentorship, and trust in the tenant network; Structured networking between tenants, facilitated by the incubator; Friendship and social support; Addressing isolation.	Efficacy; hope; resilience
Perspectives About the Incubator, Shaped by Experience	Tenant Perspectives about the Incubator	Reasons and incentives for moving to the incubator; Reputation and credibility; Meeting expectations; Gratitude; We are supported.	Efficacy
	Disadvantages Associated with the Incubator	Hindering business; Lack of support – lack of understanding; Recommendations for improving/extending staff support; Breakdown in tenant-staff relations.	(Disrupts) Hope, efficacy, resilience, optimism

2.4 Discussion

The primary aim of this first study was to investigate the existence and direction of the relationship between the four characteristic services of incubators and incubator tenants' psychological capital, hope, efficacy, resilience, and optimism. Five hypotheses were proposed in this study. Evidence from the quantitative data supports two hypotheses, with evidence offering partial support for the remaining three hypotheses. Specifically, the data confirmed that business support services and networking were related to tenants' resilience. The predicted relationship between business support services, networking, and structured selection, entry, and exit with tenants' optimism was also confirmed.

Three hypotheses were partially supported in this study. The quantitative data from the surveys shows a relationship exists between space, physical resources, and infrastructure, business support services, and networking and tenants' psychological capital. Space, physical resources, and infrastructure and business support services was associated with tenants' hope. Space, physical resources, and infrastructure were related to tenants' efficacy. The thematic evidence from the qualitative data consolidates and extends the insights about these relationships.

2.4.1 Business Incubator Services and Psychological Capital

The current investigation predicted that all four characteristic services at incubators would be related to tenants' psychological capital. The quantitative data demonstrates tenants' ratings of importance attributed to space, physical resources, and infrastructure, business support services, and networking at the incubator were related to higher levels psychological capital. These findings offer evidence that these three services are related to tenants' psychological capital which manifests through (a) building confidence (efficacy), (b) possessing a positive attribution (optimism) towards success, (c) being determined in their

goals but having the capacity to redirect the approach towards goals (hope), and (d) being sustained and focused (resilience) on success, despite challenges (F. Luthans et al., 2015).

One explanation for this positive relationship is that space, physical resources, and infrastructure, business support services, and networking are analogous with interventions that support psychological capital. This includes methods and interventions that support, manipulate, and develop psychological capital and the primary constructs hope, efficacy, resilience, and optimism. Such techniques are consistent with recognised interventions that incorporate goal setting, developing pathways, mental rehearsal for goal approach and attainment contextualised to each of the identified pathways, and pre-planning in anticipation of overcoming barriers in pursuit of these goals (F. Luthans & Youssef-Morgan, 2017).

The predicted relationship between structured selection, entry, and exit and tenants' psychological capital was unsupported in this study. There are two possible explanations for this finding. First, there was less availability of this characteristic service for incubator tenants in this study (as reported by tenants and shown in Table 8), when compared to the other characteristic services. The value of this characteristic service is thus difficult to measure when it is not consistently present. The second interpretation is that the characteristic service provides little or no support for tenants' psychological capital. This finding is consistent with past research where it has been suggested that structured selection, entry, and exit provides operational support to incubators, providing measures that guide performance success (Bergek & Norrman, 2008; Dee et al., 2011; Hackett & Dilts, 2004; Theodorakopoulos et al., 2014). Although this service has been associated with tenants' business survival upon graduation (Ayatse et al., 2017), and influences tenants' utilisation of the available business support services at the incubators (Bruneel et al., 2012), it appears unrelated to interventions that enhance tenants' psychological capital.

Further consolidation of this evidence is complemented by the thematic analysis of the qualitative data which strengthens the research findings. It provides evidence that the methods used by the incubator to deliver space, physical resources, and infrastructure, business support services, and networking are similar to interventions that foster tenants' hope, efficacy, resilience, and optimism. The techniques employed at the incubator appear consistent with recognised methods for developing psychological capital (F. Luthans & Youssef-Morgan, 2017, p. 367; F. Luthans et al., 2015) including fostering goal-setting, developing pathways to achieve goals, the mental rehearsal of goals towards multiple, identified pathways, and contingency planning to address challenges.

These findings provide important new evidence that there is a measurable association between three characteristic services at incubators and tenants' psychological capital. While this was not evident across all characteristic services at incubators, it was established in terms of space, physical resources, and infrastructure, business support services, and networking. This current research study found that these characteristics services at incubators are analogous with interventions that support tenants' psychological capital. This extends and consolidates the current association of incubators as facilities that support small business development and regional economic development. They now also appear to support small business tenants' and entrepreneurs' psychological capital. This study expands the limited research knowledge in this area, and extends the assertions made by Ford (2015) who first proposed that incubators may support tenants' psychological capital.

2.4.2 Characteristic Incubator Services and Hope

The quantitative data demonstrates that three characteristic services at incubators are related to tenants' hope. As predicted, a positive relationship exists between tenants' ratings of importance for space, physical resources, and infrastructure and business support services with hope. There was also an unexpected, positive relationship between the tenants' ratings

of importance of networking and their hope. Contrary to original predications, there was no relationship between tenants' ratings of importance for structured selection, entry, and exit and hope.

The relationship between space, physical resources, and infrastructure, business support services, and networking with tenants' hope provides evidence that incubator services share similarities with interventions that support hope. It appears that the delivery of each of these three characteristic services fosters tenants' business goals and helps to address and support the challenges and problems that hinder their goal approach. Each of these approaches share similarities with recognised strategies for fostering hope (e.g., F. Luthans & Jensen, 2002). Thematic analysis of tenant interviews assisted in explaining and consolidated the insights gained through the quantitative results, linking the strategies and supports at incubators with the interventions for hope.

The physical amenities of the incubator appear to minimise the practical and financial challenges for new businesses, allowing tenants to focus of their business. This offers evidence that the physical amenities of the incubator are analogous with hope whereby tenants approach their business (goals) without hindrance from common challenges (financial, space, location) that impede new businesses during their establishment. This finding is important as it suggests that the physical attributes of the incubator, which past research (e.g., Bergek & Norrman, 2008; Burnett, 2009; Monsson & Jørgensen, 2016) has identified as important in providing convenience, business legitimacy, and access to shared resources also assists tenants to manage and remain goal focused despite challenges.

Tenants consistently reported receiving support and advice from incubator staff to achieve their business goals, and to address and overcome their business challenges. The theme "staff support" provides evidence of the incubator staff's role in supporting tenants with this. The advice, interactions, and mentoring from staff, and the wider incubator

community, appears to have enabled tenants to plan for and approach their goals, while also addressing challenges. The advice and support of incubator staff appears to be solutions-based, involving goal-planning to overcome challenges. This is analogous with interventions that support hope, by addressing challenges that can hinder goal approach (F. Luthans & Jensen, 2002; F. Luthans et al., 2015; Youssef-Morgan & Sundermann, 2014). The positive feedback from staff also appears to reinforce positive goal directed behaviours in tenants is another method that supports hope (Youssef-Morgan & Sundermann, 2014). This finding attests that staff at incubators deliver an important and integral role in supporting tenants, consistent with past research (Redondo & Camarero, 2017). In this study, the role and delivery of services that staff provide to tenants appears analogous with interventions that support hope.

The thematic analysis was particularly valuable in offering insights that assist in explaining the unexpected finding in the quantitative data of a relationship between tenants rating of importance of networking, and hope. In the theme "tenant community", tenants consistently described their interactions with other tenants and the importance of this. The interactions that tenants have with their peer network and the incubator community appears to facilitate the sharing and receiving of advice from their peers and discussing business problems and possible solutions. Again, the positive feedback from tenant peers appears to reinforce positive goal directed behaviours which support hope (Youssef-Morgan & Sundermann, 2014). This finding emphasises the importance of networking, which past research has found to offer tenants a range of positive benefits (Ayatse et al., 2017), which includes its positive influence over hope.

Finally, the hypothesised relationship between the characteristic service of structured selection, entry, and exit and tenants' hope was unsupported by the data in this study. There was no evidence in the surveys or interviews to support a relationship between this service,

and tenants' hope. This is despite past research indicating that this service is important in strengthening tenants' cultural fit within the incubator and increasing their uptake of available services (Bruneel et al., 2012; Lewis et al., 2011). One explanation for this finding is that tenants' perceptions of the importance of this service actually offers very little assistance to them with developing their goals and meeting the challenges of their business.

2.4.3 Characteristic Incubator Services and Efficacy

The hypothesised relationship between the business support services and networking at incubators with tenants' efficacy was unsupported by the quantitative data. However there was evidence of a relationship between the ratings of importance that tenants gave to space, physical resources, and infrastructure and their efficacy. This evidence thus confirms the original assertions that the space, physical resources, and infrastructure at the incubator are similar to the interventions that support efficacy. The thematic evidence from interviews with tenants, provides evidence which adds support for this explanation.

The thematic evidence from tenant interviews suggests that the physical attributes of an incubator are positive attributes that contribute to tenants' confidence. For example, affordable accommodation is described by tenants as being a positive attribute of the incubator, fostering business confidence. Furthermore, tenants refer to their incubator as contributing to their own business' reputation and credibility. This, too, engenders tenants' confidence in their own business. For some tenants this confidence enables them to become more creative in their business. Each of the these examples are consistent with approaches and techniques for developing efficacy, in which positivity can energise and assist to support tenants' confidence in their abilities (Youssef-Morgan & Sundermann, 2014).

Although the quantitative evidence did not demonstrate a relationship between business support services and networking and tenants' efficacy, the thematic evidence suggests that a relationship actually exists. This finding uses the qualitative data only. While

not being verified through data triangulation, it is still an important finding that builds new knowledge in this area. Tenants consistently described having gained confidence at the incubator, developed through coaching, training, and positive feedback from incubator staff. The staff appear to be providing tenants with opportunities to learn about and model positive business behaviours that tenants then adopt in their own business. The strategies of vicarious learning, imitation, and modelling of successful behaviours, are consistent with recognised methods for building confidence in one's own abilities (B. C. Luthans et al., 2014; Youssef-Morgan & Sundermann, 2014).

The thematic evidence from the data shows a similar association between the formal and informal networking between tenants and their efficacy. The connections that tenants have with their peers at the incubator supports peer observation, vicarious learning, and modelling of successful behaviours, and opportunities to discuss and potentially avoid challenges that other businesses have faced. These methods are consistent with techniques that support efficacy, including building confidence, modelling, and observation of others as they master challenges and achieve success (F. Luthans et al., 2010).

The insights gained through these data indicates that business support services and networking at incubators provide tenants with opportunities to develop their confidence and mastery towards success through learning and observation, and through the receipt of positive feedback from incubator staff and tenant peers. This is consistent with the published research linking entrepreneurial intention and venture growth with self-efficacy (Baluku, Matagi, Musanje, Kikooma, & Otto, 2019; Baum & Locke, 2004; Correia Santos, Caetano, & Curral, 2013). However, the discrepancy between the quantitative and qualitative evidence in explaining whether a relationship exists between business support services and networking and tenants' efficacy limits any further interpretation of these findings. One explanation for the inconsistent data is that tenant interviews, unlike the survey, provided a better method for

tenants to articulate and describe how the characteristic services were associated with and assisted the development of their efficacy and confidence. Further exploration of the relationship between the incubator services and tenants' efficacy is recommended to address the inconsistencies between the data found in this study.

2.4.4 Characteristic Incubator Services and Resilience

As predicted, the quantitative data offers evidence for a relationship between the ratings of importance of business support services and networking and tenants' resilience. Another, unexpected relationship was also identified between tenants' ratings of importance of space, physical resources, and infrastructure and their resilience. These relationships offer evidence suggesting that these three characteristic services at incubators are providing interventions and support that foster tenants' resilience. The thematic evidence from interviews with tenants complements this finding and offers support for the explanation provided for the relationship.

The themes that emerged from the tenant interviews identify that some of the characteristic services at incubators are integral, both as an asset, and in supporting the development of assets for tenants approaching their goals or addressing challenges. An example of this occurs when staff provide tenants with advice, coaching, and mentoring. The methods used by staff appears to guide and support tenants to address the risks or challenges they are encountering in their business and, often, to utilise resources or assets available to them within the incubator to overcome these challenges. The incubator staff are therefore using techniques to help tenants to address or reduce the adversity they experience while accessing the human or physical resources at the incubator. This approach shares similarities with recognised methods for supporting resilience through the identification, development and strengthening of an individual's repertoire of assets to fight, support or buffer adversity (F. Luthans et al., 2015; Masten et al., 2009; Youssef-Morgan & Sundermann, 2014).

Coaching and training are also recognised methods that assist with asset building (B. C. Luthans et al., 2014).

The evidence drawn from the theme which captured the view of tenants about the tenant community, and networking for business opportunities, described how the incubator network also supports the development of tenants' personal assets, and helps buffer them against adverse experiences. Networking for business opportunities provides tenants with opportunities to develop their professional and personal assets while the tenant community builds tenants' social assets through their peer connections. Tenants consistently reported interacting with their tenant peers for advice with problem solving which acted as a mechanism to buffer tenants, or help them to avoid negative experiences and outcomes. This approach is similar to the strategies recommended for supporting efficacy (F. Luthans et al., 2015; Masten et al., 2009; Youssef-Morgan & Sundermann, 2014). These factors, which are akin to assets, appear to influence and shape tenants' responses to adversity, thus providing the scaffolding that has previously been found to support resilience (Garcia-Dia et al., 2013).

Unexpectedly, the quantitative data revealed a relationship between space, physical resources, and infrastructure and tenants' resilience. The evidence drawn from the interview process provides further insights into this relationship. The theme affordable space; physical amenities, which is analogous with the characteristic service of space, physical resources, and infrastructure at incubators, appears to be integral in developing tenants' collective physical assets, thus supporting tenants' positive cognitions and strengthening resilience. This theme shares similarities with interventions for resilience and developing skills for understanding and building personal assets and addressing the cognitive thoughts and emotional feelings that occur during adverse situations (F. Luthans et al., 2010; F. Luthans et al., 2015).

The present findings suggest that the physical attributes of incubators – which share similarities to workplaces – is actually fostering resilience. Research by King et al. (2016)

identified that there are shortfalls in understanding the factors that support resilience-building within the workplace. The quantitative and qualitative findings of this current study offers further insights into this influence of incubator services on resilience, highlighting that this is an area worthy of further exploration.

2.4.5 Characteristic Incubator Services and Optimism

The quantitative data offers support for the hypothesised relationship between business support services, networking and structured selection, entry, and exit and tenants' optimism. An unexpected, positive relationship was also identified between tenants' ratings of importance for space, physical resources, and infrastructure and their optimism. One interpretation for this finding is that all four characteristic incubator services are providing support for tenants' optimism and thus are akin to interventions that support optimism. The analysis from tenant interviews provides additional evidence to partially support this assertion.

The evidence drawn from interviews indicates that the support tenants receive from staff, including the advice and support offered through mentoring and coaching, was found to engender their sense of positivity. The assistance bestowed on tenants by the incubator staff is consistently positive in how it is delivered to, and received by, the tenants. Tenants described the methods that staff adopt when delivering advice and guidance as directly shaping the level of negativity that tenants' experience. This method of advice-giving by managers to tenants appears consistent with interventions that support and enhance optimism, through reflection and leniency of the past, appreciation of the present and seeking opportunities in the future (F. Luthans et al., 2015; Youssef-Morgan & Sundermann, 2014). Other techniques that can foster realistic optimism, and reduce pessimism, include social support of peers and friends, and mentoring and coaching that is positive in its approach (Youssef-Morgan & Sundermann, 2014).

Tenants' perceptions about the incubator also suggests that the incubator environment contributes to their positive experiences, and optimism. Developing positivity within the work environment and positivity in association with their cognitions is an essential "pre-requisite" for facilitating psychological capital (F. Luthans & Youssef-Morgan, 2017). Similarly, having optimistic tenants at incubators is likely to generate similar outputs and behaviours, further complemented by the techniques and strategies offered at incubators that support optimism.

However, the qualitative and themed data provides no further evidence of the relationship between the remaining three incubator services and tenants' optimism. Although the thematic evidence suggests that optimism is manifest in tenants at incubators, in the theme "feeling positive", the narrative experiences of tenants offers no further explanation for the relationship between space, physical resources, and infrastructure, networking and structured selection, entry, and exit, and networking on tenants' optimism.

One explanation for the lack of evidence supporting the relationship between incubator characteristic services and optimism is that the interview questions were unable to elicit tenants' optimism with direct links to the remaining characteristic incubator services. Expanding the interview survey questions to directly ask about what, if any contribution this service has for tenants, would overtly assist to facilitate an understanding.

In summary, the quantitative evidence confirms a relationship between tenants' importance of all four characteristic services at incubators, and their optimism. This finding however was only partially complemented by the evidence drawn from the theming of the qualitative data.

2.4.6 Thematic Evidence and the Conceptual Model

Data from the present study provides evidence that fundamentally supports the original conceptual model that was developed for this research (see Figure 5), and the

predicted relationships between the characteristic services at incubators and tenants'

psychological capital, hope, efficacy, resilience, and optimism. Modifications to the original

model are necessary in light of the findings for this first study and these are presented in

Figure 9.

This modified conceptual model captures the shifts in the conceptualisation around

incubators and psychological capital following data collection and analysis. The revised

model demonstrates that three of the four characteristic services at incubators, specifically

space, physical resources, and infrastructure, business support services, and networking, are

associated with tenants' psychological capital. The findings confirm, as was predicted, that

each of these three characteristic services were analogous with methods that support and

foster tenants and their positive psychological state of development. These findings extend

the current understanding of the relationship of incubator services indicating their

relationship to tenants' psychological capital.

The conceptual model is now strengthened by the identified associations that were

found to exist between the same three characteristic services at incubators – space, physical

resources, and infrastructure, business support services, and networking – and tenants' hope,

efficacy, resilience, and optimism. In addition, other, unexpected relationships were found in

the data. This included a relationship between networking and tenants' hope, and between

space, physical resources, and infrastructure and tenants' resilience and optimism. These

findings offer evidence of the contribution of these services in relation to tenants' hope,

resilience, and optimism, suggesting that the services are analogous to interventions
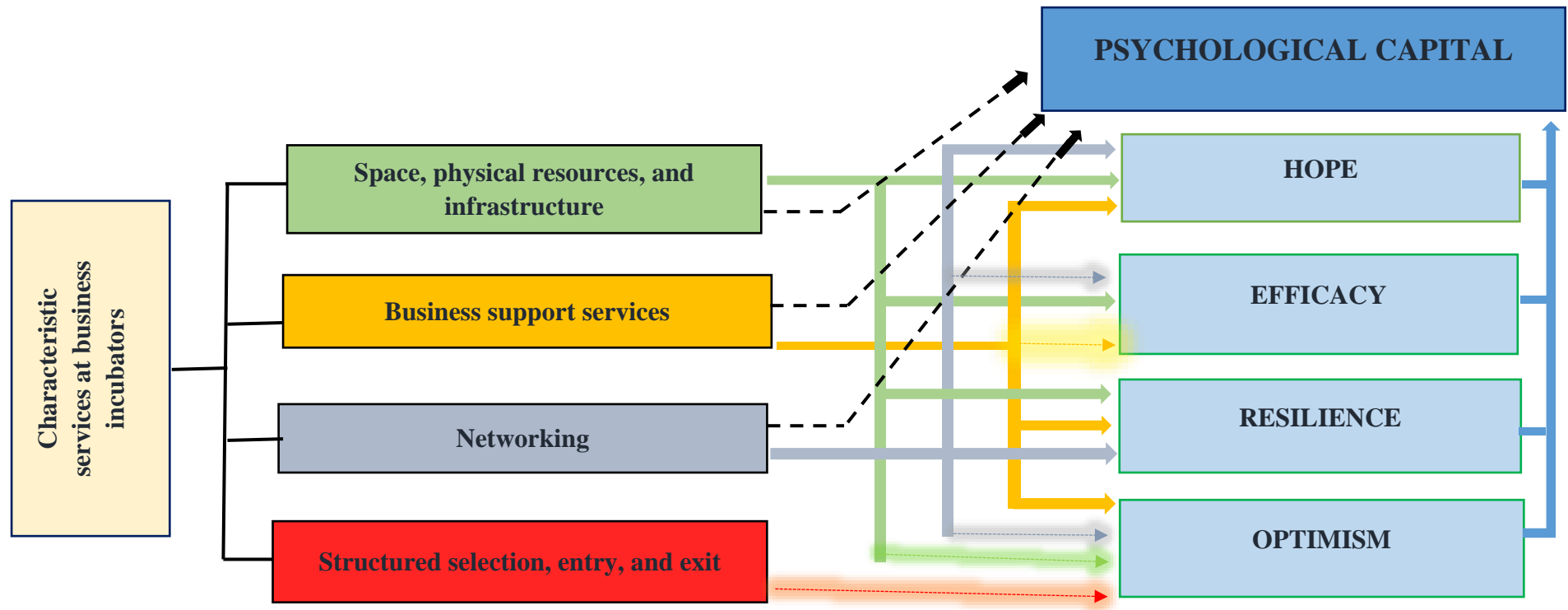
Figure 9. The conceptual model informed by the tenant data, representing the relationships between the characteristic services at incubators and tenants' hope, efficacy, resilience, optimism, and psychological capital.

Note. Black-broken lines represent the relationship between the characteristic services and psychological capital. Coloured-block lines represent the relationship between the characteristic services and hope, efficacy, resilience, and optimism. Coloured-blurred lines represent relationships where only one source of data (survey/interview) offers evidence of a relationship.

supporting these constructs. Only the qualitative data provides evidence for a relationship between business support services, networking, and tenants' efficacy. Each of these relationships that were captured as part of data collection and analysis for this study have now been integrated into the modified conceptual model in Figure 9.

The model also shows that structured selection, entry, and exit at incubators is not associated with tenants' psychological capital nor their hope, efficacy and resilience. One explanation for this is that structured selection, entry, and exit, and the attributes associated with this, are not providing tenants with any support analogous with interventions that foster hope, efficacy, resilience, and optimism and the synergies between them. This service has been widely integrated within the incubator industry and has been associated with tenants' selection to and successful graduation from incubators (Dee et al., 2011; Lewis et al., 2011). It has been found to support the operational requirements of incubators (Bergek & Norrman, 2008; Hackett & Dilts, 2004; Theodorakopoulos et al., 2014). The detachment between tenant outcomes and incubator operations associated with this characteristic service offers an explanation as to why there is very little evidence to support a relationship between this structured selection, entry, and exit at incubators with tenants' psychological capital, their hope, efficacy, and resilience.

The revised conceptual framework demonstrates consistency with the theory of resources that underpins psychological capital (Hobfoll, 2002; F. Luthans et al., 2015). The evidence from this study suggest characteristic services at incubators, with the exception of structured selection, entry, and exit, enable tenants to acquire new resources that contribute to their psychological capital and potentially, utilise these for positive gain within their own business. This is an important finding for the incubator industry, offering evidence that the characteristic services at incubators offer multiple benefits to tenants that support their

business, and providing them with an opportunity for gaining new tangible and intangible resources supporting the manifestation of psychological capital.

Overall, the findings in this study indicate that the original conceptualisation of potential relationships between characteristic services at incubators and psychological capital is supported. While there have been modifications to the model to more accurately reflect this study's findings, the current model provides a blueprint, supported by evidence of a relationship between most of the characteristic services at incubators and tenants' psychological capital, hope, efficacy, resilience, and optimism. The model offers new evidence for the incubator industry in terms of planning, providing, and developing the type and nature of incubators services that can support tenants' business growth, as well as their psychological capital. It also offers a framework that could be adopted to direct future research in this area.

2.4.7 The Implications of this Study

The conceptual model developed for this study, based on research evidence and theory, has been tested and informed by the data collected from incubator tenants. It offers new evidence that incubator services are associated with tenants' psychological capital and the constructs of hope, efficacy, resilience, and optimism. This has broad implications for the incubator industry with evidence now demonstrating that specific characteristic services at incubators are of benefit to tenants, supporting their business and their positive psychological state of development.

Specifically, space, physical resources, and infrastructure, business support services, and networking are supporting and nurturing tenant's hope, efficacy, resilience, optimism, psychological capital, and supporting tenants' cognitions and appraisal for positive achievement. Consequently, it is imperative that these three characteristic services continue

to be consistently integrated into the model of service delivery at incubators, and promoted by the industry, as being essential services that support tenants' holistic needs.

Supporting tenants through the targeted delivery of characteristic services has the potential to build their resources and enhance their psychological capital, encouraging their optimal functioning, and maximising their outputs towards business success. The corollary of this is that improved outcomes for tenants are also likely to lead to improved outcomes for incubators, where this is gauged through its contribution and support of regional and economic development, jobs growth, skills creation, and network building (Ayatse et al., 2017; Isabelle, 2013; National Business Incubation Association, 2015b; Tang et al., 2013; Tavoletti, 2013).

Furthermore, the manifestation of psychological capital in tenants is likely to have a positive impact on tenants' attitudes, perceptions, and behaviours in their own business, at the incubator. This is strongly evidenced in the qualitative themes in which tenants show manifestations of hope, efficacy, resilience, and optimism in their behaviours and attitudes towards their business. This association, between psychological capital and positive behaviours in the workplace and elsewhere, has been extensively demonstrated in the published research (e.g., Avey et al., 2011; Guido et al., 2018; Lorenz et al., 2016; Paterson et al., 2014).

The thematic evidence confirms that incubator staff, including incubator managers, are of significant and measurable importance to the delivery of the three characteristic services at incubators that are associated with tenants' psychological capital, hope, efficacy, resilience, and optimism. Incubator staff have a substantive role in coordinating and delivering business support services and facilitating networking for tenants at the incubator, influencing tenants access and supply relating to these services and the a vast number of attributes they comprise. The positive influence of incubator managers on tenants has been

well documented (Redondo-Carretero & Camarero-Izquierdo, 2017; Theodorakopoulos et al., 2014), but the positive influence they have on the supply of characteristic services that support tenants' psychological capital is a unique research finding. This offers some evidence contributing to the current discussion about psychological capital in the workplace (Avey, 2014), in which it has been suggested that leaders and leadership practices can support and enhance employees' psychological capital. A similar pattern appears to be occurring at incubators, between incubator managers and tenants, influencing their psychological capital and the constructs of hope, efficacy, resilience, and optimism.

Further research is now required to understand the substantive role of incubator managers and staff in the delivery of the three characteristic incubator services that are related to tenants' psychological capital, and the HERO within constructs of hope, efficacy, resilience, and optimism. The close and trusted relationship that tenants report with staff at their incubators suggests that incubator staff could offer unique insights to further inform and extend the findings in the present study.

Conversely, a small number of tenants reported negative experiences during their time at their incubator. For example, the break down in staff-tenant relationships, and the perceived lack of support at the incubator may disrupt or prevent the formation of relationships between the characteristic services at incubators on tenants' positive psychological states. Determining if, and the extent to which factors deemed to be disadvantaging tenants influence and/or disrupt the positive relationship between the characteristic services at incubators and tenants' psychological capital requires further exploration.

It is also recommended that future research is conducted that focuses on two related areas within the incubator industry. First, research needs to ascertain how and in what ways the relationship between each of the three characteristic services and tenants' psychological

capital manifests. Performance measures associated with tenants' business success will further elucidate this relationship. Second, further examination of the three characteristic services at incubators is needed to determine whether one particular service or the combination of services are most associated with tenants' psychological capital. Understanding this will further inform the incubator industry about which elements comprising each characteristic services has the strongest relationship with tenants' psychological capital.

In this study, research into psychological capital has been applied to a new setting and population cohort, within business incubators and with incubator tenants. The study also demonstrates the value of implementing a robust mixed methods approach in which the qualitative and quantitative data each informs and extends the research findings pertaining to hope, efficacy, resilience, and optimism. The uniqueness and suitability of research to business incubators presents an opportunity for developing insights in the role, place, and importance of psychological capital for enhanced outcomes. Specifically, that business incubators do support tenants' psychological capital. Examining the construct of psychological capital within the business incubator setting extends its application, beyond the organisational setting within which research into psychological capital has evolved (F. Luthans et al., 2015). Further research is now needed to examine how this relationship between characteristic services and tenants' psychological capital is manifest and whether its application is consistent with research which shows that psychological capital has broad ranging benefits for individuals in other settings (Bissessar, 2014; Çimen & Özgan, 2018; Datu et al., 2016; Kalman & Summak, 2017; Koller & Hicks, 2016; Krasikova et al., 2015; Nielsen et al., 2017; Rew et al., 2017).

Finally, the qualitative research design adopted in this study has provided substantial data about tenants' experiences at incubators which has been analysed independently, and in

parallel with the quantitative data. Although interviews were unable to measure psychological capital, the qualitative data in this study offers a new method for understanding psychological capital albeit through exploration of the manifest states representing the core constructs.

Recent scholarly discussions about psychological capital have recommended broadening the mechanisms for measuring psychological capital to include qualitative methods (e.g., Avey et al., 2011; Burhanuddin, Ahmad, Said, & Asimiran, 2019; F. Luthans & Youssef-Morgan, 2017). Research has commenced and these methods have been incorporated in varying ways (e.g., Çimen & Özgan, 2018; Kalman & Summak, 2017; Kutanis & Oruç, 2015). It is therefore recommended that further research examine the applicability of a universal, qualitative measure for psychological capital.

2.4.8 Study Limitations

A number of limitations were identified in this study. First, the findings were based on a small sample size. The findings therefore provide only emergent insights that cannot be generalised to the broader tenant-incubator population. Future research is recommended that tests these relationships using a larger sample size. Given the wide range of methods adopted by the researcher to improve tenants' participation in this research it is proposed that other techniques for recruitment need to be explored. Tenants are time poor thus offering reimbursement for their involvement in research may assist in boosting participation numbers.

Second, the breadth and quality of incubator services was uncontrolled in this research and, as such, the incubator services for tenants in this study may differ. This is not surprising, or unusual, given the multi-faceted nature of incubators that has given rise to an array of incubator typologies (Pauwels et al., 2016). The consistency of tenants' ideas at interview provides evidence that tenants' experiences and observations are similar, despite the differences between tenants in the models of incubation. The low participation rate,

coupled with the potential variations between the tenant incubator experiences and quality and consistency of services, limits the capacity to make stronger predictions about the proposed relationships.

The influence of entrepreneurship on tenants' psychological capital within business incubators, which are targeted, and offer supports and services to foster new business, needs further consideration. Research is now required to understand whether, and to what extent, entrepreneurship is influencing or moderating the relationship between incubator services and the psychological capital of tenants. Research into the wellbeing and psychological health of entrepreneurs is gaining greater momentum in the entrepreneurial literature (e.g., Stephan, 2018) and from industry (KPMG Enterprise, 2018) through consideration of the influence that entrepreneurship has on the physical and psychological wellbeing of individuals and their business. Foundational research and current debate indicates that psychological capital is associated with entrepreneurship (Bockorny, 2015; Contreras et al., 2017; Hasan et al., 2019; Jensen & Luthans, 2006; Pease & Cunningham, 2016). To counteract the limitations in the current study, it is suggested that future research implements a measure of entrepreneurship to control for its potential influence over the relationship of incubator services on psychological capital.

Another limitation with this study is its cross sectional research design. The original intention of the present study was to test whether the relationships between incubator services and tenants' psychological capital exist over time however the low participation numbers, and lengthy data collection period to promote the research and receive responses prevented this from occurring. The recommendation for longitudinal research into the construct of psychological capital is consistent with others who have highlighted this as an area for further consideration within the study of psychological capital (Dawkins et al., 2013; F. Luthans & Youssef-Morgan, 2017; Youssef-Morgan, 2014).

2.4.9 Conclusion

The investigations in the present study contribute new knowledge about the relationships between four characteristic services at incubators and tenants' psychological capital. A robust research methodology using mixed methods was implemented and reveals that some, but not all, characteristic services at incubators are positively related to tenants' psychological capital and the HERO within constructs: hope, efficacy, resilience, and optimism.

The survey data offers evidence for a relationship between space, physical resources, and infrastructure, business support services, and networking and tenants' psychological capital. Furthermore, the quantitative data revealed, that these same three services were related to tenants' hope, resilience, and optimism. Despite earlier predications, space, physical resources, and infrastructure was only associated with tenants' efficacy.

Interviews with tenants provided extensive insights into their experiences at incubators. Thematic analysis revealed detailed evidence of how three of the incubator services (space, physical resources, and infrastructure; business support services; networking) influenced tenants' hope, efficacy, resilience, and optimism. The mixed methods approach and the qualitative data has generated deeper understandings that have informed the research questions (Creswell, 2014) while bridging the limitations that exist when only using one methodological approach (Creswell & Plano Clark, 2018).

Another finding from the research is the important role of managers and incubator staff in supporting tenants, which is consistent with the published research. A unique finding in this study however is that managers are not only instrumental in facilitating the services that tenants identified as supporting their hope, efficacy, resilience, and optimism, but also that the characteristic services being implemented by staff are akin to interventions that support these constructs. This has important implications for the way that managers assist

tenants within the constraints of the services offered at incubators. Research is recommended to examine managers' perspectives of this, which will enable further insights, and corroboration of data, to be drawn. This will be the focus of study two.

This research also expands the current, limited scope of research into psychological capital within the incubator industry. Determining a relationship between characteristic services at incubators and tenants' psychological capital has the potential to inform incubator managers and assist them to implement the most suitable and meaningful services for tenants. This better supports tenants' psychological capital and in turn, enhances the tenant experience, leading to potentially improved business and performance outcomes. Supporting tenants through the delivery of characteristic services has the potential to build their resources and enhance their psychological capital, encourage their optimal functioning, and maximise their outputs towards business success.

The current study offers evidence supporting the conceptualisation that some characteristic services at incubators are associated with tenants' psychological capital, hope, efficacy, resilience, and optimism. Furthermore, this study highlights the importance of this as a new area for research drawing upon the evidence from two disparate areas of study – psychological capital and business incubators – to provide greater benefit for new business owners and entrepreneurs within these facilities.

Chapter 3: Study Two

3.1 Overview

Managers at business incubators play an integral role in operationalising these facilities (e.g., Bruneel et al., 2012; Lewis et al., 2011; Shepard, 2013) with published research indicating that they are instrumental in facilitating the characteristic services that assist tenants' businesses (e.g., Apa et al., 2017; Bruneel et al., 2012; Monsson & Jørgensen, 2016; Redondo-Carretero & Camarero-Izquierdo, 2017). Consistent with these findings, study one of this thesis found evidence that incubator managers and incubator staff are integral to the delivery of characteristic services that supported tenants' hope, efficacy, resilience, and optimism. The fundamental role of incubator managers in facilitating and delivering services provides them with unique insights into the way in which characteristic services at incubators support tenants' positive psychological development. This offers an important area of investigation, from which to build new evidence relating to the role and practice of hope, efficacy, resilience, and optimism in the business incubator environment, from the perspective of managers.

In study one, a robust research framework was developed, with data collected from incubator tenants, to test a conceptual model proposing relationships between characteristic services at incubators and tenants' psychological capital, hope, efficacy, resilience, and optimism. The data revealed that three characteristic services at incubators – space, physical resources, and infrastructure, business support services, and networking – were related to tenants' psychological capital, and their hope, efficacy, resilience, and optimism. These findings are unique, providing qualitative and quantitative evidence for an association between three characteristic services at incubators and tenants' positive psychological state of development.

The centrality of managers within the incubator environments, and in the facilitation and delivery of services to tenants, provides an important additional lens from which to further explore how the four characteristic services available at incubators are related to tenants' hope, efficacy, resilience, and optimism. In synergy, these four positive constructs comprise the higher order construct of psychological capital. The published literature (e.g., Apa et al., 2017; Monsson & Jørgensen, 2016; Redondo-Carretero & Camarero-Izquierdo, 2017) highlights the integral role of incubator managers in operationalising services, and supporting the provision of services at incubators, for tenants. This was also identified in study one, in which tenants described the complex and generally positive relationships they have with their incubator managers and the important role of managers in supplying incubator services to tenants. These insights highlighted an important opportunity to conduct research with incubator managers about their insights to inform the relationship that incubator services have in supporting tenants' hope, efficacy, resilience, and optimism.

Research with insights from incubator managers will assist in building a comprehensive understanding of the relationship between characteristic services at incubators and tenants' wellbeing, from their perspective. The input from managers will enable multiple sources of data to be examined against that collected from tenants in study one. This will strengthen evidence and enable a holistic assessment to be made of the role of other key stakeholders in contributing to tenants' positive psychological state of development. Research with managers will further inform and test the validity of the original conceptualisation, and model development, related to the predicted relationships between incubator characteristic services and tenants' hope, efficacy, resilience, and optimism.

3.1.1 Aims and Research Questions

This research aimed to explore whether a relationship exists between the characteristic services of business incubators and tenants' positive psychological constructs

of hope, efficacy, resilience, and optimism, from the perspective of incubator managers. The study examined the narrative perceptions of incubator managers of the direct and indirect contribution that incubator services have on supporting tenants' wellbeing broadly, and on the constructs that underpin psychological capital, specifically hope, efficacy, resilience, and optimism. Data was collected from incubator managers using an online survey and semi-structured interviews. The principal question investigated in this study was how incubator managers directly and indirectly support tenants' hope, efficacy, resilience, and optimism. In addition, managers' perceptions of the importance of characteristic services at incubators and how these support the holistic needs of tenants was also investigated.

3.2 Methods

3.2.1 Participants

Seventy-five managers from the USA ($n = 34$; 45.3%), UK ($n = 20$; 26.7%), Australia ($n = 14$; 18.7%), Ireland ($n = 3$; 4%), New Zealand ($n = 2$; 2.7%), Canada ($n = 1$; 1.3%), and Denmark ($n = 1$; 1.3%) completed the survey. As shown in Table 11 nearly half the survey respondents came from incubators in urban locations.

Table 11

The Incubator Location where Managers Work

Location	n	%
Urban	37	49.3
Regional	22	29.3
Other: Rural	7	9.3
Other: Suburban	2	2.7
Other: city/small city	2	2.7
Other: Central	1	1.3
Other: University campus	1	1.3
Other: Virtual	1	1.3
Missing	2	2.7

Twenty-eight survey respondents also participated in an interview. Interviews were conducted with managers in the USA ($n = 15$; 53.6%), UK ($n = 6$; 21.4%), Australia ($n = 5$; 17.9%), Ireland ($n = 1$; 3.6%), and New Zealand ($n = 1$; 3.6%). The inclusion criteria for all participants in this study was being aged 18 years or older and employed at a business incubator.

Sampling Procedure

The contact details (name of organisation and email address) for incubators, compiled for study one, was used to contact incubator managers for this study. Between July and August 2018, 770 emails were sent to managers inviting their participation in the research. Reminder emails about the research were sent to managers four weeks after the first email invitation. An overview of the number of emails sent to incubators and the number of completed surveys and interviews is presented in Table 12.

Table 12

Number of Emails Sent to Incubators and the Number of Surveys and Interviews Completed, by Country

Country	Incubators contacted n (%)		Surveys and interviews completed n (%)	
	Time 1	Time 2	Survey	Interview
Australia	51 (6.6)	39 (7.3)	14 (18.7)	5 (17.8)
Canada	13 (1.7)	9 (1.7)	1 (1.3)	0 (0)
Denmark	4 (0.5)	4 (0.7)	1 (1.3)	0 (0)
Ireland	21 (2.7)	19 (3.6)	3 (4.0)	1 (3.6)
New Zealand	18 (2.3)	14 (2.6)	2 (2.7)	1 (3.6)
Singapore	7 (0.9)	5 (0.9)	0 (0)	0 (0)
UK	173 (22.6)	135 (25.3)	20 (26.7)	6 (21.4)
USA	483 (62.7)	309 (57.9)	34 (45.3)	15 (53.6)
TOTAL	770 (100)	534 (100)	75 (100)	28 (100)

Note. Time 1 = Emails sent between July and August 2018; Time 2 = reminder emails circulated four weeks after the first email. The difference in the numbers of emails sent at Time 2 reflects those emails that were undeliverable or when the incubator had indicated that they were unavailable to complete the research.

3.2.2 Materials

Email Invitation. Emails were sent to managers at business incubators inviting them to participate in this research. The email introduced the research and the research team and described the purpose of the research, including the scope of the study and the anticipated research outcomes. An overview of the tasks that incubator managers would be asked to complete as participants of the research was provided. The ethics approval number was included in the email, which also included the contact details of the researchers. A link to a YouTube video about the research was included along with two attachments: the formal cover letter of invitation and the plain language information statement. A second, reminder email was sent to incubator managers about the research. A copy of the email invitation to managers is included in Appendix L.

Cover Letter. The cover letter for incubator managers was written on university letterhead. The letter outlined information about the research, including its purpose and the activities requested of participants of the research (online survey; interviews). It also specified the time commitment involved in participating in this research. A copy of the cover letter is included in Appendix M.

Plain Language Information Statement. The plain language information statement provided comprehensive information about the research, including who was conducting the research and for what purpose. It outlined the methods for collecting research data (online survey; interviews). Information was included about the estimated time associated with participating in the research, participant confidentiality, data handling, and storage.

The plain language information statement indicated that participation in the research was voluntary. A statement was included emphasising that research was being conducted independently of the incubator. The contact details of each of the researchers was included in the plain language information statement, along with information outlining the recommended

protocols for managers in the unlikely event that they became distressed during or after participating in this research. A copy of the plain language information statement is included in the Appendix N.

Online Survey. An online survey was administered to incubator managers. The survey was developed using LimeSurvey, an online, open source survey tool. The survey results were hosted by Federation University. The survey commenced with six background and demographic questions including the location of the incubator, the role of the participant at their incubator, and the duration of their employment since commencing in this role. Questions elicited information from managers about the percentage of time they spend each day with incubator tenants, and whether they had previously been a small business owner or entrepreneur. Responses to these questions comprised yes/no responses, Likert scales, and free text response.

The second part of the survey asked managers to respond to a series of 16 statements by rating their importance of various incubator services and features using a 10-point Likert scale (1 = *no importance* and 10 = *high importance*). Four statements were included for each the four characteristic incubator services:

1. Space, physical resources, and infrastructure. Statements gauged insights about the level of importance of the following services and features: Workspace and amenities; administrative support; technology services; low cost rental; convenience of location; and other infrastructure and facilities for tenants.

2. Business support services. Statements gauged insights about the level of importance of the following services and features: Business mentoring and coaching; business development, training and education; and specialised business supports and services.

3. Networking. Statements gauged insights about the level of importance of the following services and features: Networking between tenants and incubator staff and tenants for business-related knowledge exchange and support; networking between tenants for social support; and networking for tenants with members of the wider business community.

4. Structured selection, entry, and exit. Statements gauged insights about the level of importance of the following services and features: Submitting a CV and/or participating in an interview to enter the incubator; preparation of a business plan; detailing the duration of time tenants can remain within their incubator; and participating in business progress reviews.

Another survey question invited participants to respond to five "services" associated with incubators. This included business growth, wealth creation, jobs growth, tenant wellbeing (business/other), and regional economic development – and to rate the importance of these services using a 10-point rating scale (1 = *no importance* and 10 = *high importance*).

The survey questions for incubator managers contained similar content to the tenant survey in study one and was informed by the previously published research of Al-Mubaraki and Busler (2010), and Kemp (2013). The survey was also informed by the research findings outlined in Albort-Morant and Orghazi (2016), Cohen (2013), Gerlach and Brem (2015), Isabelle (2013), Monsson and Jørgensen (2016), Schwartz and Hornych (2010), Tavoletti (2013), and Roseira et al. (2014). A copy of the survey is included in the Appendix O.

At the conclusion of the survey, participants were asked if they would be willing to participate in an interview for this research. Those who agreed to participate were asked to provide a contact email address.

Interview Schedule. Semi-structured interviews were conducted with incubator managers using a 9-item interview schedule consisting of open-ended questions. This interview schedule was adapted from the interview schedule prepared for incubator tenants in study one. The questions were constructed to elicit insights from managers about their perceptions, and insights, from their own experiences and observations, about the role and relationship of the incubator characteristic services on tenants. The questions sought information about if and how the incubator services contribute to and manifest in tenants' hope, efficacy, resilience, and optimism.

The interview schedule commenced with two general questions about the type of incubator the staff were located in and about the role they were employed in at the incubator. The next question asked participants their perceptions about the advantages and disadvantages for tenants in operating their business within the incubator.

Five questions asked about the role of the incubator in supporting the development of tenants' hope, efficacy, resilience, and optimism: the constructs that together form the secondary construct of psychological capital. As shown in Table 13 the questions for managers explored whether the incubator supported tenants to build their business confidence (efficacy), to achieve and succeed at their business goals (hope) to approach and gain direction towards current and future business activities (optimism), and overcome challenges (resilience). The final question in the interview schedule asked what role incubator managers had in supporting tenants' wellbeing as they develop their business. The interview schedule is included in Appendix P.

Table 13

Questions from the Manager Interview Schedule that Focus on Tenants' Hope, Efficacy,

Resilience, and Optimism

Construct	Interview questions that focus on this construct
Hope: Being focused on goals yet having the capacity to reorientate pathways towards a particular goal that will lead to success	What do you perceive is the role of incubator services in supporting tenants to identify and achieve their business goals? (Question 4) What role do incubators have in guiding tenants towards their business goals and to remain focused on these goals? And to establish new business goals? How has this been facilitated at the incubator? (Question 8)
Efficacy: Having the confidence to adopt and implement steps to be successful at challenging activities	What do you consider is the role of incubators in supporting and building tenants' confidence in their own business development? Can you provide examples from your own experiences with working with tenants? (Question 6)
Resilience: Rebounding from problems to strive to achieve and success beyond set goals	To what extent should incubators influence how tenants approach and respond to challenges with their business? In what ways have tenants been supported by the incubator services to overcome these challenges? (Question 5)
Optimism: Having a positive approach that leads to success both with current and future tasks and activities	What is the role of business incubators to guide tenants with their current (and future) business activities and goals? Please explain. Are there particular services at the incubator that are influence this? (Question 7)

Consent Form. Consent was required of participants, prior to completing the

interview. A copy of the informed consent form is included in Appendix Q.

YouTube Video. A short video of the researcher briefly explained the research and

invited participation in the study. The video summarised the information about the study. The

link to the video was uploaded to the social media channel YouTube:

www.youtube.com/watch?v=nOpyQidO5Qo

The link to the YouTube video was included in the cover letter to incubator managers

and was also incorporated within the launch page of the survey. The video was prepared as an

additional method of introducing the research to prospective research participants.

3.2.3 Procedure

Prior to commencing data collection, the research protocol was approved by Federation University Australia's Human Research Ethics Committee (Project approval number: A17-110; Appendix J). A summary of the amendment applications submitted to the ethics office for this project are included in Appendix K. The final project report submitted to the ethics committee at the completion of this project is included in Appendix R.

An email was sent to managers at business incubators in Australia, New Zealand, Denmark, Ireland, Canada, Singapore, UK, and USA. The email invited managers to participate in the research. The email included two attachments, the plain language information statement and the letter of invitation. A link to the online survey was included in the email and the covering letter.

The online survey took approximately 5–10 minutes to complete. After completing the survey, respondents were also invited to participate in an optional interview for the research. Those who agreed to participate further in the study were asked to provide their name and contact email address.

Recruitment of incubator managers at Australian incubators followed the above procedure. In addition, telephone calls were made by the researcher to confirm receipt of the email and to provide an opportunity for further information about the study to be shared directly with the incubator manager.

Forty-one managers indicated their willingness to participate in an interview. The researcher conducted a total of 28 interviews with managers between September and November 2018. The remaining thirteen managers either (a) did not respond to the email invitation to participate in the interview ($n = 7$) despite sending a reminder email; (b) were no longer available to participate in the interview due to time constraints ($n = 4$); (c) were uncontactable because the email address was incorrect ($n = 1$); or, (d) they had left their place

of employment ($n = 1$). The 28 interviews conducted with managers represented 37% of the total number of managers that completed the survey.

When scheduling interviews, the researcher emailed participants to identify their preferred date and time and the most convenient method (telephone; face-to-face; internet: Skype) to conduct the interview. All participants were supplied with a copy of the plain language information statement, the consent form and a copy of the interview schedule a week before the interview. All but one participant returned a copy of their signed consent form, via email, prior to commencing the interview. One participant provided verbal consent to participate in the study, prior to commencing the interview.

Interviews were conducted between 6am and midnight EST (Australia) to enable participants in countries outside Australia to participate in the interview during their business hours. Twenty seven interviews were conducted via telephone and one face-to-face interview was conducted. The duration of interviews ranged between 21:56 minutes and 81:00 minutes with the average interview being 51.65 minutes duration.

All interviews were conducted by the researcher. Interviews commenced with the researcher providing participants with a brief overview of the research and confirming with participants that they agreed to the interview being audio recorded. Participants were invited, both at the start and conclusion of the interview, to ask questions about the research. The structure for each interview was consistent with the question order outlined in the interview schedule. Some changes to the order of questions were made by the researcher when some responses were linked to questions which would be asked later in the interview schedule.

3.2.4 Data Analysis

Survey data were entered into the Statistical Package for the Social Sciences (SPSS; Version 25). Descriptive statistics and frequency distributions were conducted using the data.

Interviews were audio recorded. Twenty-two interviews were transcribed verbatim by the researcher into Microsoft Word. The remaining six interview recordings were transcribed by an external transcription company after ethics approval had been granted for this to occur. The transcripts provided the basis for the qualitative data coding and analysis. The qualitative data was coded to enhance the manageability of the raw text. NVivo 12 qualitative data analysis software (QSR International Pty Ltd, 2018) was used to electronically code the interview data.

Coding is a recognised and widely used method of converting and transforming raw data for qualitative inquiry (Auerbach & Silverstein, 2003; Saldana, 2016). The procedure for coding the interview data in this study was consistent with the methods outlined by Auerbach and Silverstein (2003). The approach shares similarities with structural coding in which data is coded to identify key phrases or content from interviews that align with the research areas of focus. This form of coding is also well suited for semi-structured methods of data collection and hypothesis testing (Saldana, 2016).

The steps for coding managers' interviews is consistent with the process which was conducted with tenants' interview data in study one. This approach to coding was reported, in detail, in the previous study (refer to section 2.2.4).

3.3 Results

3.3.1 Survey

Survey data revealed that 90% of respondents were directors, managers or CEOs at their incubator, as shown in Table 14. The remaining participants nominated their role as "other", mostly comprising various senior roles at the incubator. Although survey participants were employed in various roles, the term "manager" will continue to be used when referring to the participants in this study, as this broadly reflects the seniority of job roles that participants have.

Table 14

The Role of Incubator Manager-Participants

Location	*n*	%
Manager	31	41.3
Director	21	28.0
CEO	16	21.3
Other: Vice president	1	1.3
Other: Chief operating officer	1	1.3
Other: Senior administrator	1	1.3
Other: Managing director	1	1.3
Other: Counsellor	1	1.3
Other: Managing partner/owner	1	1.3
Other: Customer support and operations	1	1.3

The average length of time that managers had been employed in their role was 5.02 years ($SD = 4.81$) with duration ranging from one month to 24 years. Nearly 70% ($n = 51$) of participants indicated they were currently or had previously operated a small business or been an entrepreneur.

On average, managers spent 37% of their day interacting with incubator tenants. However, as shown in Table 15, the amount of daily interaction that managers had with tenants, varied substantially.

Table 15

Estimated Daily Interaction that Managers have with Tenants at their Incubator (n = 75)

% of daily interaction with tenants	n	%
0% - 10% per day	23	30.7
11% - 20% per day	8	10.7
21% - 30% per day	13	17.3
31% - 40% per day	4	5.3
41% - 50% per day	9	12.0
51% - 60% per day	1	1.3
61% - 70% per day	2	2.7
71% - 80% per day	7	9.4
81% - 90% per day	3	4.0
91% - 100% per day	5	6.7

The importance managers attributed to the role and contribution of incubators is presented in Table 16. Business growth was ranked the highest by managers, followed by jobs growth, and regional economic development.

Table 16

Importance that Managers Attribute to the Role and Contribution of Incubators

(n = 75)

Role and contribution of incubators	$\overline{x}$	SD
Business growth	8.92	1.16
Jobs growth	8.29	1.66
Regional economic development	8.23	1.53
Tenant wellbeing	8.17	1.66
Wealth creation	7.69	1.79

Note. Importance was measured using a 10-point scale (1 = *no importance* and 10 = *high importance*).

The importance managers attribute to incubator services is presented in Table 17. Overall, managers rated the four characteristic services highly, however, business support services and networking were ranked more highly than space, physical resources, and infrastructure, and structured selection, entry, and exit.

Table 17

Importance that Managers Attribute to the Characteristic Services at Incubators

Characteristic services	$\overline{x}$	SD
Business support services	8.31	1.67
Business mentoring & coaching	8.55	1.82
Business development, training & education	8.19	1.67
Specialised business supports	8.17	1.91
Networking	8.30	1.64
Networking at the incubator with staff & tenants	8.48	1.74
Networking for social support	8.19	2.05
Networking with the wider business community	8.24	1.81
Space, physical resources, and infrastructure	7.61	1.47
Workspace	8.41	1.96
Administrative support	5.36	2.66
Technology	8.48	2.01
Low cost rental	8.24	2.14
Locale	7.56	2.04
Structured selection, entry, and exit	6.72	2.11
CV & interview	6.53	3.04
Business plan	6.00	2.78
Duration at incubator	6.68	2.65
Performance reviews	7.65	2.02

Note. Importance was measured using a 10-point scale (1 = *no importance* and 10 = *high importance*).

3.3.2 Interviews

The analysis and coding of manager interviews revealed 32 repeating ideas, categorised into 10 themes comprising two theoretical constructs. The themes and constructs

are presented in Figure 10. Core themes are examined through closer exploration of the

repeating ideas. Representative and direct quotes from managers, captured during interviews,

are used to support and contextualise the data comprising each repeating ideas.
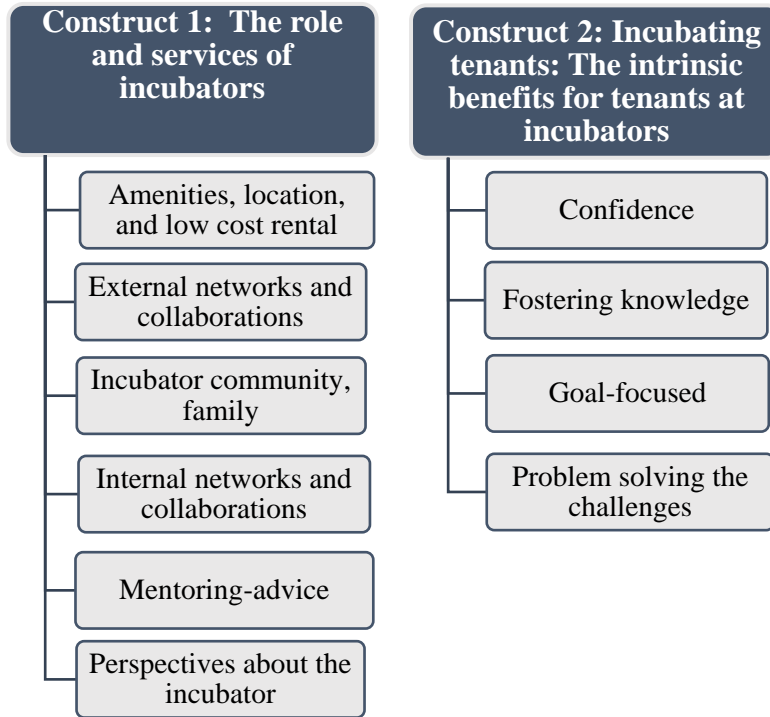
Figure 10. Constructs and themes identified through analysis of managers' interviews.

Construct One: The Role and Services of Incubators

Six themes comprise the first construct "the role and services of incubators". These

themes include (a) amenities, location, and low cost rental; (b) external networks and

collaborations; (c) incubator community, family; (d) internal networks and collaborations; (e)

mentoring-advice; and, (f) perspectives about the incubator.

The themes comprising this construct capture managers' insights about the role and

services delivered at the incubator that they consider to be influential in supporting tenants

and their businesses. These themes share similarities with the characteristic services that are

widely delivered at most incubators. For example, the theme amenities, location, and low cost

rental is similar to the characteristic service at incubators of space, physical amenities, and

infrastructure. The two themes that focus on internal and external networks and collaborations, and the theme incubator community, family, share similarities to the characteristic service of networking. Mentoring and advice shares similarities with business support services.

Importantly, managers offer insights about how these services are delivered, and how they influence tenants' hope, efficacy, resilience, and optimism. This in turn builds knowledge about the role of incubators in supporting tenants and fostering their business growth. Managers appear to be resolute in their role at the incubator, and in assisting tenants. Collectively, they share strong perspectives about the role of incubators as mechanisms primarily to support tenants, and foster their business development. This assessment will be explored further, and qualitative research evidence presented under each of the themes.

Theme: Amenities, Location, and Low Cost Rental

The physical attributes – the facilities and features of incubator – were frequently discussed by managers. Approximately half of the managers (43%) reported that the incubator physically supports tenant businesses by providing suitable space and amenities appropriate to meeting and growing tenants' business needs. A quarter of managers commented that the low and reduced-cost leasing arrangements at the incubator was another advantage for tenants, particularly when cost is contextualised to the incubator location and compared with current market rates. Likewise, the geographic location of some incubators, within close proximity to the local region, was another advantage for tenants which was identified by a smaller number (14%) of managers. Noticeably, a quarter of all managers commented on the importance that being at an incubator provides tenants, by supporting and increasing their business credibility. According to managers, the professional environment and reputation of an incubator facilitates tenants' business credibility. Representative evidence of the perceptions of managers, pertaining to this theme, is presented below.

The incubator facility (*n* = 12; 43%): *A modern, bright, well-equipped facility.*

We're located in a manufacturing-ready facility so we are able to offer our tenants, that are at the manufacturing-stage, some utility in the physical building that they wouldn't be able to produce themselves, in an alternative arrangement (Ma_9).

So our facility is a modern, bright, well-equipped facility and that's their prize for building their potential. It's attractive for them to build a team, for people to work here. It's a nice environment (Ma_16).

Subsidised lease/rental (*n* = 7; 25%): *It's the advantages of all the facilities that they get at a subsidised rate…*

I think one of the advantages, it's the advantages of all the facilities that they get at a subsidised rate that they wouldn't be able to get, especially in <name of town> because it is actually quite hard to hire 30 square metres of space, or 15 or 20. It is almost impossible (Ma_1).

Even as a not-for profit we are priced incredibly generously (Ma_2).

Effectively, real estate costs are one of the largest cost reasons why businesses fail. So we remove the obstacle, we try to tailor to exactly what they're…help them understand what their current need is, help them understand why they don't want to get into large expenses, you know, like build-outs, and why they don't need them and just be adaptive to the environment (Ma_9).

Business credibility (*n* = 7; 25%): *Building of that brand and credibility.*

Of course, if you're in <name of incubator>, you're credible, because your address says <name of incubator>, you're credible. Wow, wow! The address is what made me credible. Wow, you've not even met me yet, you've not even seen the product. I think there's something that incubators, really great branding incubators, yes, they are at the bottom pushing upwards but their brand is at the top, and saying this is what makes us, gives us, the USP [unique selling point] for our region. So I think for businesses, it's around that brand and credibility. How do I build it? We're able to give real value to the building of that brand and that credibility (Ma_12).

So they've got a presence and they've got a CBD address and instantly their business looks much better than an address from a residential area (Ma_14).

Location (*n* = 4; 14%)*: Location is an advantage for them.*

Location is an advantage for them. We are urban. They come from a 10km radius max so they are close to home. They can bring their kids in after school. They've got 24/7 access so they can work around their family because predominantly they all have families or other jobs. A couple of them are working elsewhere. So that's definitely an advantage (Ma_2).

So it's a good geographic location in addition to having the benefits of being on campus, with the university (Ma_7).

We're right in the middle of town and so within easy walking distance to lots of shops and restaurants, things like that (Ma_28).

Managers described the physical attributes of the incubator – the space, facilities, the location, and the reduced rent – as mechanisms that support and enable tenants in their businesses. The physical amenities offered through "the incubator facility" juxtaposed by a subsidised leasing arrangement is described by mangers as reducing or removing some of the tangible obstacles that hinder tenant business growth and assist tenants to progress their businesses (hope). Similarly the physical environment and the business credibility is described by managers as influential in developing tenants' confidence and thus supporting their efficacy. Overall the physical attributes of incubators are described by managers as resources that contribute to and support tenants to build their assets and potentially supports tenants' resilience.

Theme: External Networks and Collaborations

In this theme, nearly two thirds (64%) of managers described their role, and that of the incubator staff, as integral in facilitating introductions between tenants and to new contacts, resources, and networks outside of the incubator. Furthermore, many of the incubators in this study were aligned with, or were based at a university campus. Half of the managers thus described this relationship as important to tenants, providing them with new research and development opportunities. On occasion, the incubator-university partnership is described by managers as providing tenants with access to a pool of student talent and potential employees. Just under a half of the managers (43%) described the important connections between the incubator, the tenants, and the local community, for mutual benefit. Furthermore, the local community, both regionally and economically, can influence the focus

and operations of the incubator. These insights are captured in the representative statements below.

Facilitating introductions (*n* = 18; 64%): *We have a vast network of people that we know.*

Probably the most valuable thing that we provide an entrepreneur who comes into our incubator, is a rocking rolodex … it's the network that we … between the people on their own, the other staff members know and the people we can tap as to who they know in the <names the city> area. I am not more than two-removed from just about anybody who wants to link. That's not a trivial rendition of what we are doing (Ma_4).

I've lived and been involved with this community for over 30 years myself. Our entrepreneur-in-residence has been here about 15 years and we have a vast network of people that we know, so, as an example, if a company is looking to make a connection into the housing market or something, we always know people that we can introduce them to and we can leverage our own contacts list to help them get a foot in the door and not be making cold calls (Ma_13).

We also…we really serve as a connector, more often than not I have somebody coming to me saying "I have this problem I need this resources can you help me find this resource?" So we connect them with the resources they need to keep them moving forward. That's probably one of the biggest things because that network gets pretty big, pretty fast with all the connections we have from <name of incubator> to City and State resources. We are plugged into all of those things and we know a lot of people that they don't (Ma_25).

Incubator-university partnerships (*n* = 14; 50%): *With our incubator being linked to the university, there's some real opportunities for research collaborations and knowledge exchange.*

It expands the resources significantly for our clients [tenants] and many of them have leveraged programmes within the University such as matching an intern salary 50% to the programmes that are State-run programmes that are only available for our tenants. Because we are university-based incubator, as opposed to a stand-alone incubator, so that opens resources to them (Ma_7).

And then I suppose with our incubator being linked to the university, there's some real opportunities for research collaborations and knowledge exchange collaborations that SMEs get to do, as well. We always advertise our knowledge exchange university events, out through our network etc. So I think that's another benefit we have (Ma_10).

Connecting with the local community (*n* = 12; 43%): *We have a very close collaboration with a lot of industry and the chamber, locally…*

So I guess why I am telling you this is because we try to bring that connect mix into meeting all those needs, so the needs of the local business community in so much as attracting businesses to <name of city> and the CBD of this area. It may be that you try and attract new industry or you are supporting the industries here by

bringing in people and so that also allows you to also look at the make-up of the <name of city> and the businesses that are already here and have those discussions (Ma_1).

Again, it's to just keep expanding opportunities, the networking opportunities for the clients here with our alumni. We also connect with the chamber in the region and our industry partners in the region. Where we are based in, the town is a suburb of the <name of city>. So, we are also, we are our own town, if you know what I mean, with 90,000 people, so we have a very close collaboration with a lot of industry and the chamber, locally, as well, so we engage with them as much as possible, too (Ma_16).

The external networks available to tenants, which are facilitated through the incubators, offers a conduit for tenants to other businesses, organisations, and skills. Managers described their role in building the external networks in terms of facilitating and supporting tenants to develop their resources to assist with avoiding or buffering current/future risks. These descriptions share similarities to methods akin to supporting resilience. The connections to local community which managers facilitate through introductions, and within universities, appears to support tenants with their goals and to remain goal focused, or to reorientate their goals when they experience challenges. This is indicative of the construct of hope.

Theme: Incubator Community, Family

The incubator community of tenants (*n* = 14; 50%): *This is a community of other entrepreneurs….*

This theme captures the ideas described by half the managers about the incubator representing a network of like-minded people; a community. Tenants are described as being strongly connected to one another, joined by the common aim of pursuing their business, and of the shared experiences and challenges associated with this. Various descriptors are used by managers when referring to tenants within the incubator community, including members, family, and children. For some managers, their role and that of incubator staff – and of the tenants – is aligned with building the incubator community and establishing the "incubator family", from within. This is captured in the following statements.

Knowing that you've got other people that are dealing with the same kind of issues you're dealing with, just not being alone. Honestly. You are in a community. Communities have…there's plenty of effort. Communities are valuable. This is a community of other entrepreneurs, other scientists and of people who want the best for you, and having other people who want the best for you, around you, that's a benefit. It's not one you can quantify but I think other people would say they feel that. So…that contributes to wellbeing (Ma_4).

You don't always get that, but if you're not willing to be open and work collaboratively in this family, well, then we have a dysfunctional family. We see our job is – yes, it's about supporting them, but it's actually about making the family work. What we find is that, sometimes, one tenant works very closely with another tenant. They really learn off each other and support each other and we're not involved in that. They're doing it on their own (Ma_12).

We always talk about our place as being a business community because that in itself helps the companies realise that the pot is actually bigger. They have a degree of responsibility to those around them, and actually, that they have opportunities to get support, from other people within the business community (Ma_17).

In this theme, the incubator community is described by managers as being highly influential and important to tenants. The incubator community is described as providing opportunities for tenants to observe their peers. It thus represents an opportunity for vicarious learning and observation which are methods that support efficacy. Furthermore, the incubator community of tenants is described in terms of their "value", as an asset to tenants; where peers develop strong connections and have access to resources that can reduce the challenges they face and thus supporting their resilience. These ideas continue to be explored in the following theme.

Theme: Internal Networks and Collaborations

This theme explores the collaborations – represented by the networking, partnerships, and support – that managers have observed between tenant-peers and represents the intricate workings within the tenant community at the incubator. Most managers (82%) referred to peer-to-peer collaborations, and of their importance for tenants. Two-thirds (68%) of managers described using various methods to facilitate peer-to-peer collaboration. Formal and practical methods are implemented at incubators to encourage internal networking and partnerships. It also includes manipulation of the incubator space through planning and

design to enable peer engagement, and the delivery of activities or meetings that encourage tenant introductions and lead to potential collaborations.

Nearly half (46%) the managers described the collaborations between tenants as having assisted in generating new opportunities for learning and expanding tenants' business knowledge. A third of managers (36%) commented on the importance of tenant observation, where tenants observe other tenants working on their business, addressing challenges, and achieving success. Nearly a third of managers (32%) referred broadly to competition, or more often, the lack of competition between tenants, in contributing to building the internal collaborations and connections between incubator tenants. In a related set of ideas, 32% of managers also described instances where incubator tenants had collaborated on and partnered with other tenants, for mutual business gain. The following representative statements from managers captures the ideas raised.

Informal peer-to-peer collaboration and support (*n* = 23; 82%): *It's a place you go to work and you speak to fellow comrades in start-ups and technologies, and people…*

But I don't think I've ever had a circumstance where I've reached out to one of our graduates and they've been disinterested in helping. The analogy I use, it's almost like if you have a house full of kids, the older kids help the younger kids (Ma_13).

The main advantage, when I've spoken to a lot of companies, they just love the incubator centre because it's a place you go to work and you speak to fellow comrades in start-ups and technologies, and people… same peer level of people and you can share ideas. It allows them that…that they are travelling with the same issues, going to market, trying to sell products, trying to innovate, trying to do new things. It's really hard to do it by yourself (Ma_21).

Methods for building collaboration (*n* = 19; 68%): *I made it my role to make sure that everybody knows who everybody is and what it is they are doing.*

By not having that wall infrastructure they are much more open to communicating with, and sharing experiences with, and even, you know, sharing products, sharing their own clients and working together. It's been a concept in open office space and well received by companies like Microsoft, companies like Apple, so it's been very, very positive and in an office-type environment, we decided to copy that open office type concept into a manufacturing environment, so to the extent that permitting and regulations allow for it (Ma_9).

So I really went about and made it my business that we started an internal newsletter, so if people have any information they would like to share with anybody, we put that in that. I made it my role to make sure that everybody knows who everybody is and what it is they are doing (Ma_14).

So they were able to meet sponsors, and also one another. Especially where there's a potential for their technologies to be complementary to one another, we'll definitely get them together as well because, you know, if person A is working on something and we see that person B has a compatible technology, putting the two pieces together might actually be a bigger play than keeping the two separate. We always make sure we bring those folks together so they have the opportunity to collaborate (Ma_18).

Collaboration for knowledge-gain (*n* = 13; 46%): *There is a continuous sharing of knowledge…*

I think an incubator is there to relieve a lot of financial clashes but also, there's also the other things: to facilitate the strong relationships between the other businesses, encourage networks and really getting them out there and saying "do you know this?" and "we know so and so, let me give you his card" (Ma_3).

Other people come to somebody with a question and they say "oh, you know who knows about that? it's this person", and that person ends up with answers because of that. So if they are working in somewhat related fields they can be quite helpful to each other, and we've seen a lot of that, that's worked quite well (Ma_4).

There is a continuous sharing of knowledge and peer-to-peer support (Ma_16).

Observation (*n* = 10; 36%): *If he can do it so can I.*

And I think that that's what you get, you get that sort of observation and participation from being in an incubator in itself. That's all part of the difference and being out there and being an individual and being in a competitive market, which can be quite isolating for people, for human beings, to be in a competitive market because they believe that being isolated they are going to do better, make them more competitive, and in fact you don't have to be the strongest person in the sandpit to be competitive (Ma_1).

So we get the graduates and keep them involved one way or another, and…because everybody knew that guy, okay, so he just raised $50 million bucks, that's pretty exciting and they go like "Shit! If he can do it so can I". That stuff helps (Ma_4).

Competition - no competition (*n* = 9; 32%): *It's very approachable, it's not competitive…*

There's a lot of cooperation even if potentially they can be competitors, it's a very supportive atmosphere (Ma_7).

Well, they have a neighbour right next door, or they have a neighbour in the same building that offers those capabilities so you know, it's very approachable, it's not competitive, it's not cost being a problem. It's an introduction, it's an opportunity to lead and opportunity to collaborate and work together (Ma_9).

We have been structured, we sort of have a big brother arrangement, sort of. I have a new IT business for example, come in here, and we don't have a lot of IT because they generally go to the uni or whatever, but say IT, and we've got a long-term IT person in here. We might hook them up and say "Jane's new. She's just starting out in her business, you've been doing it for a long time, Stella, I thought I'd introduce the two of you. Maybe you could have a catch up, run ideas past each other?"...and generally you get "no worries" (Ma_14).

Peer-to-peer business partnerships (*n* = 9; 32%): *Working together to get new customers.*

But we've got other businesses too that have left. We had two female professionals that started up a practice that was quite innovative and they've since gone on and done really, really well…it doesn't have to be that they have a new product that is in new or service that is innovative, they can just have something different about themselves (Ma_1).

…you see a sharing of skills, a sharing of supply parts, sometimes even collaborations and working together to get new customers (Ma_12).

We had one business talk to another and a new business came out of it as a result. The effect of incubators also, actually, as well as all the formal mentoring and coaching and such like, you get the peer support going on and once you've got a critical mass then the peer-to-peer becomes quite a major component (Ma_15).

In summary, this theme comprises ideas from managers about the varied relationships, the methods, and the outcomes associated with the internal networks between tenants at incubators. The informal peer-to-peer collaborations appear to support tenants to build their personal assets, by connecting with their peers; support which assists them in the future by avoiding or buffering current/future risks (resilience). Observing others in the incubator was assessed as fostering tenants' confidence in their abilities, thus supporting their efficacy. Peer-to-peer partnerships are described by managers as an opportunity for tenants to approach their business goals drawing upon the potential for internal, peer collaborations to enable pathways for achieving their goals (hope).

<u>Theme: Mentoring-Advice</u>

The vast majority of managers (86%) described the mentoring, advice, and coaching provided to tenants and prompted, on occasion, by issues tenants are experiencing. Half the managers (54%) referred to a range of formal and informal methods used to mentor and provide advice to tenants. For half the managers, personal support and empathy underpins the advice and mentoring they offer tenants. This approach appears particularly important for tenants who are experiencing issues in their business. Sometimes the support and advice offered is personal, rather than business-related. A quarter of managers emphasised the importance of open, two-way communication when providing advice and mentoring to tenants, while others (32%) referred to developing tenants' autonomy when providing mentoring and advice to thus maximise tenants' autonomy in their business, and associated business decisions. For some managers (18%), developing a trusted relationship with tenants is integral to the mentoring and advice they offer. Finally, a third (36%) of managers suggested that their previous entrepreneurial or business experience is an advantage in their role and, in some cases, is considered an important pre-requisite when working with incubator tenants thus ensuring that tenants receive appropriate support and informed advice. These ideas are captured in the following statements.

Advice, mentoring, coaching (*n* = 24; 86%): *Along the way you're getting mentorship from the incubators.*

Along the way you're getting mentorship from the incubators. You're getting mentorship, you're getting guidance, you're solidifying your pitch. You're doing those kinds of things (Ma_6).

So if we see that a company has really kind of stalled, then we will say "hey let's pull out your strategic plan, let's pull out your goals and see what needs to be changed" (Ma_13).

So a classic example: A serial entrepreneur may know the equity landscape extremely well. We can't help them with anything there, they've got established networks, they know who they would go to for their investment but they may know nothing about grant funding. And actually when they've looked at it in the past they've put it in the "too difficult to do" box and not pursued it. So part of our work might be saying "well

actually let's go back around the loop to see if there is an opportunity to usefully use that, sensibly use it. Who are the people that actually might be able to hold your hand through the process?" (Ma_17).

The process (*n* = 15; 54%): *It's important that they're getting quality advice and guidance from the resources as well.*

Generally I try to meet with each tenant at least monthly and those monthly meetings are basically status updates and they are used to identifying their immediate needs that are to be focused on, but then before they come in, I do an assessment (Ma_7).

When you get down to the brass tacks, it's important that they're getting quality advice and guidance from the resources as well. But for me, I think the big thing is that it is a place and a programme to where they just come in and we help make it easier for them to either succeed or to fail, but to do it quickly enough that they don't waste much money and time (Ma_13).

We have a small business counsellor on staff Monday to Friday, eight to five to counsel the small businesses or people who want to start a business and it helps them with their business ideas, business plan, marketing, financial projections, any of those types of things …(Ma_23).

Being supportive, empathetic (*n* = 14; 50%): *They know they have that support person.*

There are people on hand who can actually help facilitate some form of business advice and support and real life support, and there is also financial… and the other support we offer. So it's giving them that "this is scary, you are starting your new business but actually we are here as a support network, so you are not on your own, you can talk to us and we can help you" (Ma_3).

I suppose it's more a holistic understanding of supporting - I suppose it's a difficult one to explain, but I suppose it's those things that give people, or give tenants the support that they need to move through with their business, but it can be personal support, but also obviously, we talk, we focus quite heavily on the business support, but things that actually support the tenant to move through their business if it… in some ways it may be the personal aspects, things that we have talked about a little bit already, but giving them, providing them with the support or the confidence to move through, or in instances where perhaps people are challenged with their business and can't move forward with that (Ma_5).

So, there's certainly those of us who have to deliver these services, it's important, it's imperative that we understand and are empathic to real-world challenges that small business and start-ups can face (Ma_6).

I think that is definitely half the battle is that they know they have that support person. Especially if they're not getting it from somewhere else. So, to have someone believe in you and your idea when you're absolutely hesitant and not sure or not confident to push a button. Just coming in and getting that reassurance - I believe in this idea, all the logical reasons why I think this idea is going to work and it's commercially viable for you (Ma_6).

Staff-entrepreneurial experience (*n* = 10; 36%): *It's important that we've actually operated small business ourselves*.

One of the big things within our organisation - so, anyone who holds those key roles, it's important that we've actually operated small business ourselves (Ma_6).

And then, the expert staff, what we call entrepreneurs-in-residence, they're people who, well one of my team is "been there done that" themselves. They set up and ran tech businesses, raised money and bit of investment on the side (Ma_10).

Again it comes back to that hospital analogy: Good nurses and doctors help you through the process while similarly people who have…it's no accident that I walked into this position having run my own business for 5-6 years, and then it went pear shaped so then I decided I wouldn't go again, I would create structures which allow people to set their own businesses up. My head of business development here, he ran his own business, got it funded but it then went pear shaped. So we've got the t-shirt, we've got the scarf, we understand what the businesses are going through so you can have that empathy (Ma_15).

Building autonomy, independence (*n* = 11; 32%): *Sign post you to the right thing that you need at the right time.*

For me, an incubator is about providing that supportive environment that helps sign post you to the right thing that you need at the right time. It doesn't force you to do too much stuff. It doesn't take any ownership of your business; the business is yours, the decisions are yours (Ma_10).

The current thought is honestly, to get them to a place where they aren't reliant on the incubator for the long-term. Just like a bird in a nest, you want them to grow up and move out. So the short-term is to give them confidence and confidence in their skill sets (Ma_18).

Communication (*n* = 7; 25%): *Open and ongoing communication is valuable.*

…so we can create an environment where people feel safe and actually willing to ask, because people often have questions but often their willingness to put them up there (on Facebook) and reflect some vulnerability and so it's a difficult task. And so, I think, from the evidence that we've been able to extract, it's been amazing, in retrospect, they continue to ask (Ma_11).

I think strong, open and ongoing communication is valuable because you don't know what the problems are until you start asking and then, so you build the trust, so they will tell you what the challenges are, I think by asking the tough questions (Ma_27).

Building trust (*n* = 5; 18%): *That trusted confidant and that mentor…*

It really just a matter of that communication all the time, and building that trust (Ma_1).

So being that person who can be that trusted confidant and that mentor, to be able to say that you're the

CEO and you get to make the decision as to what advice you follow (Ma_5).

In this theme managers shared insights about the mentoring and advice they offer at incubators, and how this supports tenants. The delivery of services that included advice-giving, mentoring and coaching highlights how staff provided tenants with an understanding of the present, by acknowledging the challenges and opportunities they face. Likewise the mentoring and support offered by managers is focused on developing positive and realistic processes for tenants and their businesses, all of which shares similarities with interventions that support optimism. Ensuring tenants remain autonomous in their business and the positive feedback and social persuasion that managers impart to tenants – often informed by their own business experience – is synonymous with techniques that support the building of efficacy. Communication, fostering trust, and being empathetic are all methods that support tenants to identify and move towards their business goals and supports tenants' hope.

Theme: Perspectives about the Incubator

This theme captures managers' perspectives about the role of incubators and how they should operate. Half the managers described the role of incubators in relation to the support they offer tenants, and in fostering their growth and involvement at the incubator. Similarly, some managers conveyed strong views about what incubation is, and what it is not. A quarter of managers shared ideas about the operations of the incubators, either in broad terms, or relating to specific matters, such as the selection of tenants to join the incubator. The uniqueness of the incubator and the importance of the tenant population is a common thread weaving through managers' interviews, as evidenced in the following representative statements.

Role of incubators (*n* = 14; 50%): *It's not a cookie cutter kind of thing, it's not a one size fits all.*

I think there's been too much focus on incubators in <name of country> being top-down; becoming accelerators. With a programme where management or where the mentors become the most important people.

And that concerns me that we've always been very proud that we are bottom-up and it's their business and we are there to support them [the tenants] but we will give them every opportunity they need to keep going (Ma_2).

It's not a cookie cutter kind of thing, it's not a one size fits all. That each Incubator has to be taken on its own merit and has its own characteristics and personality, as well. Also, you're dealing with the different characteristics and personalities of the actual business owners as well, so that always makes for an interesting mix (Ma_6).

I think a mistake in business in general is when people try to be a one size fits all. Basically, the knight's analogy. You want to be the boy scout who does a bit of everything but I think it is misleading the companies that go through a stage thinking that they have a view of incubation being all things to them and that they are going to get all kinds of support. The facility needs to be honest, and it needs to match up against where exactly the needs are of the company, and then help that company be successful within that stage (Ma_9).

Incubator operations (*n = 7; 25%*): *Is this who we want to bring in?*

I have to say this incubator spends a lot of time 100% full. It has only been in the last two months when we have had a few vacancies and that reason is because we have had tenants graduate so we don't….so we can afford to sit back when we have a vacancy and say "is this who we want to bring in?", or whatever (Ma_1).

I think, we are always considering the future for these businesses, yes, and part of that comes into it in that sometimes when we interview people – and it's only happened a couple of times – but we've really just advised them this isn't the right time to get in [to the incubator]. It's sort of "give it some more time, give it some more thought", so in that respect, as far as our incubator goes, if we can see that at the moment it doesn't look like it's going to be a near future-thing we can advise against taking up the unit (Ma_3).

I think the incubator staff, I would almost go further, and answer it a slightly different way and say, if I've got <name of incubator> and there's no incubator staff in it, then it's not an incubator. It's almost like saying a hospital is a hospital with no nurses. Without nurses and doctors, it's not a hospital. It's almost a hotel. The incubator staff make it an incubator (Ma_12).

This theme emphasises the importance that managers attribute to the role and operations of incubators. This perspective of incubators is deeply connected with the notion of providing the necessary supports to assist tenants to succeed in their business and to be the best they can be. Importantly, emphasis is on providing a positive and supportive environment for tenants to grow their business. This conceptualisation shares similarities with the construct of optimism.

Construct Two: Incubating Tenants: The Intrinsic Benefits for Tenants at Incubators

Four themes were associated with this second construct, "incubating tenants: The intrinsic benefits for tenants at incubators". It includes the themes of (a) confidence; (b) fostering knowledge; (c) goal-focused; and, (d) problem solving the challenges. The themes comprising this construct capture managers' perceptions of how the incubator directly and indirectly influences tenants. Each theme offers insights about the personal impacts on tenants and the intrinsic benefits that managers have observed in tenants at their incubator. Collectively, these themes offer evidence that tenants are gaining confidence in their business, they are gaining new knowledge and learnings, they are solving problems and have their sights set on achieving their goals. In turn, incubators are assisting tenants through the provision of services and supports that ensure a positive incubator environment, in which networking and interactions between tenants is encouraged and fostered. Furthermore, confidence in self and one's achievements is encouraged, and goal setting and goal achievement is prioritised. Broadly, these are analogous with interventions that can support the constructs of hope, efficacy, resilience, and optimism. This will be explored further, under each of the following themes.

Theme: Confidence

The majority of managers commented on how incubator tenants had gained business confidence, and how this confidence was manifest in tenants. Nearly two-thirds of managers (64%) identified a range of incubator services and features positively influencing tenants' confidence. This included informal advice giving, networking, and participation in events where entrepreneurs were able to present their business ideas within a safe environment. Sharing their business successes and discussing the barriers they experience in business, also appears to have facilitated tenant confidence, as assessed by managers. Just over a half (57%) of managers commented on how confidence is manifests in tenants. This suggests that

tenants' confidence is fostered by starting their business within the incubator; within a professional and supportive environment. Thus the attributes of the incubator environment and the support they receive from the incubator staff, fosters tenants' self-confidence, enabling some tenants to expand their business focus and develop their business capabilities.

Methods for building confidence (*n* = 18; 64%): *To create efficiency and confidence.*

At incubators, we determine where our clients are, and which event may be best for them at this stage, because the more often that you present, of course the better you are, and so we want you to be in that safe environment, where no one is going to tell you "no", and everyone's there to help you, and very encouraging and confidence-building and "yeah that sounds like a great idea!" (Ma_5).

Getting any business going is taking one step forward, two steps back. And having the gumption or the motivation or the drive or whatever it is, and go to the next one and learn from your failures and go. I think a lot of times you can remind them of all the success they've had, and how much progress they've made towards their goal, when they are down, and that is hugely beneficial to them, and helps them keep going (Ma_7).

I think a lot of what we do, that goal may be kind of implicit because a lot of times what we try and do is remove uncertainty and remove barriers, so I think probably the underlying goal and that is to create efficiency and confidence (Ma_13).

It's not unusual, if you've got an early stage entrepreneur, we'll try and put them in contact with some of our more experienced entrepreneurs for an informal conversation. Part of that is actually helping them understand the journey, from somebody who is one of their peers, and actually help them understand what are some of the risks around the business that they need to be tackling. But also, I think, giving them the confidence that they can find their way through all of this and to start the development (Ma_17).

Well, and that's, I guess that goes back a little to depending on what the individual business needs. If they know their business, they know their business model and they are confident in what they're doing, that our incubator allows them the space and the amenities and services provided for them to execute on their business and I think that gives them a level of confidence or maybe a level of less anxiety about how they're going to get everything they need to operate (Ma_23).

Achieving business confidence (*n* = 16; 57%): *Feel confidence in themselves and have some tools to actually achieve that…*

…sometimes confidence is all about having someone…simple things, knowing that someone's got your back, secondly, confidence is about seeing other people and knowing that other people have the same difficulties as you, that you're not alone, in doing something. In actual fact it can be a comparison of "I am doing better that Joe Blow", even though you don't like to admit that. There is that too, like, "I am actually

doing better than I thought, you know, by being here I have got a lot more done than some other people around me and I am not as bad as I thought", can be confidence building (Ma_1).

All of those things are things that we add, allows them to have the confidence that they are doing the best thing possible for their physical business; for the commercial business. Which then allows them to have the confidence to take some risks because they know exactly what's happening with their money. I think it is less around feel good confidence and more around commercial confidence (Ma_2).

They can think globally, have aspirations that are bit bigger than good old <name of country>, but then, I guess, feel confidence in themselves and have some tools to actually achieve that (Ma_11).

For start-ups it's the support and facility that give them a lot of confidence in terms of talking to international clients or national clients because they are proud to be able to bring them into a facility like this, they are proud to have, as I said, or be online (Ma_16).

This theme describes managers' perceptions about tenants, and the ways in which they/the incubator assists in supporting tenants to gain business confidence. For managers, the positive incubator environment and the supports and services available within this setting is broadly perceived to facilitate tenant confidence, and thus efficacy. The self-assurance that tenants exhibit suggests that they have acquired confidence in their business, and in how they approach tasks. Some of the techniques for developing confidence include the positive and emotional support and advice offered by managers to enable tenants to be confident and positive in their approach and with their abilities. There is also a strong emphasis, as described by managers, on building confidence through the positivity associated with the feedback and encouragement they give tenants. Vicarious learning through the connections that incubator tenant's form, and the observations of other tenants at the incubator, also appears to bolster tenants' confidence.

Theme: Fostering Knowledge

Fostering knowledge (*n* = 17; 61%): *A wide choice of means of learning.*

Nearly two thirds (61%) of managers commented on how tenants' gained new knowledge. Managers described various methods for developing and enhancing tenant

knowledge, including through education and training workshops. The learning that occurs between the peer network, and within the broader incubator environment where tenants have access to a range of resources, also provides opportunities for increased learning.

So really it is a matter of having the training here and the workshops and having that one-to-one advisory. So we bring in advisories from other programmes, like the (name of programme), where they will do one-on-one here and the chance to join in on that, if they want to, with those people. And, also just by telling them what's happening around the place too and that this is available and that's available. I think they (the tenants) have quite a wide choice of means of learning (Ma_1).

I think education and mentoring are the clear things we provide, and that we commit to them. Education and helping them to grow their knowledge and work out what they don't know and then do something about it (Ma_2).

I think there is a lot professional learning between the SMEs, definitely. I don't think they realise it a lot of the time, until they really think about what they have learnt from each other. I think there's quite a lot of profession learning from each other (Ma_10).

Through the theme "fostering knowledge", managers described the opportunities for tenants to gain new knowledge and insights that provides them with the assistance necessary to progress or achieve their goals. This shares similarities with methods that support hope, through goal achievement. The learnings that tenants gain from their peers, of observing others, and vicarious learning, mirrors methods that support efficacy. Managers also described the way that tenants gain new learnings as being an acquisition and thus an asset. The generation and acquisition of assets to assist tenants can support resilience.

Theme: Goal-Focused

In this theme, managers described observing tenants identify and approach their goals. The vast majority of managers (82%) implemented various techniques to assist tenants to identify their goals, to move towards these, and/or to identify obstacles associated with goal achievement. The methods for facilitating goal setting and achievement include formal and informal advice-giving and "training" tenants to approach their business goals. Connecting tenants with others, including tenants and incubator alumni who have been successful in

achieving their goals, is another method that incubators managers have used to support tenants to approach their goals. Just under a third (29%) of managers had observed and thus described tenants' goal success. For them, the goal success of tenants and their businesses is connected to business success and increases in the number of employees at tenant businesses, and, when tenants businesses thrive, of graduating from the incubator to move into larger premises.

Advice and training to support goal setting (*n* = 23; 82%): *Training to develop your goals.*

… yes, we run training in actually how to develop your goals, plus, that actually helps, it's actually to run training to develop your goals and to look at them or to even to consider them (Ma_1).

So helping them establish their goals, because I had 30 plus years' experience in the corporate world before I got into this side of things, and so I have that business background that I can help them get to. "What are your goals? What are your financial goals? What do you want to get from this company?" These are questions that many entrepreneurs have asked themselves in the early stages, then in the later stages it's much more around, "where do you want to take the company? Do you want to bring in some additional funding to accelerate your growth? If you do, what are you willing to give up with that?" (Ma_5).

Well, you know, I think it's being around other companies that are really driving the revenue and seeing what revenue success can look like. Seeing what tooling they can use to achieve revenue success. Seeing what marketing tools they can use, that they probably view as not being on their radar; not being affordable. Those are key steps that we help people identify with (Ma_9).

…whatever goals exist are the goals that they establish. Now, if they articulate goals that we think are counter-productive to their success or aren't well thought-out, we will review those and will help them with the strategic plan, but whatever goal they said, if the goal is "I want to grow the company to 10 people by January", it is indeed their goal. So there's goal setting which is theirs - is primarily them, with us providing a little bit of guidance (Ma_13).

Goal success for tenants and incubators (*n* = 8; 29%): *Because they have outgrown here which is a success for us.*

Well some people have the incubator as a goal in itself. If it's a home based business then their goal has been to use a working space, and then their goal is to go into an incubator, and then their goal is to leave the incubator and go into private rent or commercialised. The incubator can be a goal in itself. And that's something you try to impress is that being here is a goal in itself, but leaving here is a goal in itself. It's a marker…that goals are really just signs that you have for yourself, aren't they. When you get to this point, it's a sign to say

you have achieved this. And it is important to have those, to celebrate the successes along the way. I think being here in itself is a practical means of goal setting (Ma_1).

In the ideal, we sort of go back to their original score, sort of on a twice a yearly basis, to show them the progress they have made, as well …often you don't recognise as you are ploughing on through, so for someone to go back and show you where you have come can be quite inspiring. So we do that quite a bit (Ma_10).

I think most of the tenants know when it is time to move on, for whatever reason, which is generally because they have outgrown here which is a success for us (Ma_14).

Success for us is can you see their clients grow from one to three to five people and upwards and when we see them taking on the first number of employees or procuring the deals with customers, that obviously is hugely powerful for us and is something that we would celebrate with them and celebrate with others in the building too. The idea that they learn to celebrate their goals and their wins (Ma_16).

Consistently, managers described how tenants address and achieve their goals, supported by the services and supports at incubators. In describing the goal success of tenants, managers outline the approaches that tenants take, and describe their achievements in reaching their goals. This aligns with pathways and agency associated with the construct of hope. The methods described by managers to support tenants, through mentoring and advice, includes the identification of goals to approach and achieve, and identifying potential challenges to goal success and to plan and prepare for this. These methods are similar to strategies such as stretch goals and stepping and identifying key steps in the approach towards goal achievement, and of planning solutions for challenges that are associated with interventions for hope.

Theme: Problem Solving the Challenges

The theme "problem solving the challenges" captures managers' perceptions about the challenges faced by incubator tenants. A key point, raised in discussion by the majority (79%) of managers, is the range of techniques offered at incubators to assist tenants to realise, adjust and overcome the challenges they experience in their business. Frequently, this comprises "scaffolding", or the provision of support, advice, and mentoring for tenants by the

incubator staff, and include encouraging realisation of a problem or challenge. Just under a half (43%) the managers commented that part of the scope of their role is to assist tenants to identify the range and types of challenges they will encounter as entrepreneurs. This includes exposing tenants to the realisation of these challenges and assisting them to address these. About half of the managers (43%) reported that talking about problems with their tenant-peers can assist tenants with their own problems. Managers suggest that peer support enables tenants to share their problems which in turn enables them to gain advice and insights from their peers who have experienced and overcome similar problems. This also assists tenants to address the challenges they experience. A fifth of managers described how and when tenants had successfully overcome challenges. This provides insights about how tenants overcome hurdles and what this means for them, their learnings, and how – on occasion – they share these new insights with their peers.

Incubator provides scaffolding to assist tenants to address challenges (*n* = 22; 79%): *We do our best to move obstacles and impediments out of their way.*

If someone has a challenge or whatever, also that they can seek out other support that they might need, like for instance, consider things that they might not have had before, like research and development, which is a very important thing to creating your business, to sustainability and profitability so, just the fact that you are here and make those links and help them to even consider the possibility of doing that, is something (Ma_1).

Yeah, I think what I would say is that we do our best to move obstacles and impediments out of their way. Whether that's just their own insecurity with being concerned that they don't know what to do or whether it's saving them from spending money unnecessarily to get information that we can give to them. So it's just making the path to success easier and less complicated (Ma_13).

Well I mean we've got, as I have said, a lot of people who have walked in their shoes before and so, you know, we have 18 people on staff they can regularly ask advice for when challenges are there (Ma_28).

Identifying the challenges (*n* = 12; 43%): *We help them identify the challenges.*

We help them identify the challenges and identify what the resources are that they need to meet those challenges and then we would reach out through our network to help them find people who could help them and there's a million ways you can do that (Ma_4).

I have been able to bring this exposure to some of the challenges that companies know they need to face then its good business for them and good business for others (Ma_9).

… as an entrepreneur, if you are working remotely, part of the challenge is, you don't know what you don't know. When you are coming into an environment (the incubator) where you are exposed to a variety of new opportunities and new information that you would just otherwise be completely unaware of (Ma_17).

Problems shared with peers (*n* = 12; 43%): *Knowing that you've got other people that are dealing with the same kind of issues you're dealing with, just not being alone.*

Knowing that you've got other people that are dealing with the same kind of issues you're dealing with, just not being alone (Ma_4).

…and I'll tell you who else they go to when they need advice is, we've graduated out of the programme probably 100 companies. So they still will maintain contact with other entrepreneurs who have been successful. It's really this community, this collaborative community that we have created. So often, they get better advice from another entrepreneur who has just recently navigated the same or similar problem (Ma_13).

I think that when you're thinking about problem solving, to be around other like-minded people that you can share those ideas and problems with, and to be able to get feedback and to get a lot of feedback from different types of people and to be able to synthesise that into something that is actionable (Ma_26).

Overcoming the problem (*n* = 6; 21%): *They brought in the different skill-sets that they were lacking.*

Many entrepreneurs that I have worked with…it astounds me that they're more than willing to help someone else, the same mentorship. When someone has some of the same problems, for example, one entrepreneur was having difficulties with his partners, and he worked through them and had to do some rather drastic actions, but he did them, and learned a lot from that process (Ma_5).

We have a company that's now won at least four grants from <name of organisation>, the product is viable in the market but the founders spent the last years tweaking the problem, tweaking the product, changing the market focus, tweaking approach to market, effectively he's been dilly-dallying with his company as opposed to focusing on his specific market segment. So he's brought in a new CEO who is effectively that market focus, is that segmentation analyst and is that focused person who can help him raise money and so now they are in production because they brought in the different skills-sets that they were lacking (Ma_9).

A very, very important part of an entrepreneur and they can still get very many challenges and as far as they can deal with those challenges, really, really sets them apart (Ma_16).

This theme captures managers' insights about tenants' problem solving and the capacity to overcome challenges. Assisting tenants to overcome existing challenges, while

planning for potential challenges through a range of strategies or pathways, shares similarities with methods for supporting hope. The sharing of problems amongst their tenant-peers and learning from and observing how their tenant-peers have overcome similar challenges is analogous to methods that foster efficacy. The positive and realistic approaches that tenants use to overcome their challenges shares similarities with interventions for optimism.

3.3.3 The Role of Incubator Managers in Supporting Tenants' Holistic Wellbeing

A final area for which data was captured as part of building insights into managers' perceptions of their role in supporting tenants, was drawn from the qualitative question specific to the issue of holistic wellbeing. Table 18 captures managers' interview responses which were thematically reviewed and categorised to the interview question about the role of incubators and incubator managers/staff in supporting tenants' wellbeing as they develop their business. The findings show that just under half (45%) the managers described supporting the wellbeing of incubator tenants. Just over a quarter of managers (26%) acknowledged that they needed to do more to support tenants' wellbeing. Some managers (7%) indicated that the wellbeing of tenants was supported through the incubator-wide "community". For other managers, supporting tenant wellbeing was associated with business wellbeing (16%), and with tenants' physical health (3%).

In summary, the qualitative data captured through interviews with managers reveals the breadth of services and supports available to tenants at incubators. Mentoring, networking, and the physical amenities at incubators are considered important enablers for tenants to grow their business. The provision of these services is supported by a range of methods that meet the varied needs of tenants. Establishing a community of tenants within the incubator appears to strengthen the connections that tenants have with the incubator and

Table 18

Categorisation of Managers' Responses about the Role of Incubators in Supporting Tenants'
Wellbeing

Response category	*n* (%)	Representative quote
Proactively supporting tenant wellbeing: Incubator staff proactively support tenants by providing direct or indirect support for their wellbeing	14 (45)	*We are always mindful that these types of programmes can be quite intense and they are going to get hard and so having someone who's dedicated to actually supporting people, for them as opposed to the business, was going to be a benefit to us (Ma_11).*
Needing to be more proactive about addressing wellbeing: Managers acknowledged that they/their incubator needs to provide greater support for tenants' wellbeing	8 (26)	*There is absolutely a whole change management and mental health aspect, which we are not addressing. The change management, because we are doing that. I believe the role of the incubator is to provide a supportive…where people can feel safe, and mental health is supported, with education. I don't think incubators are doing enough around that. I think we are slowly starting to (Ma_2).*
Business-focused wellbeing: Supporting wellbeing is linked to business, through understanding and promoting entrepreneurial behaviours	5 (16)	*I guess it's what we are already doing. It's to offer onsite learning and leveraging of resources with the professional support and the creating of the community and the community support (Ma_1).*
Incubator-community-wide support for wellbeing: The wellbeing of tenants is supported by the broader incubator community	2 (7)	*This is a community of other entrepreneurs, other scientists, and of people who want the best for you, and having other people who want the best for you, around you, that's a benefit. It's not one you can quantify but I think other people would say they feel that. So…that contributes to wellbeing (Ma_4).*
Wellbeing as physical health: The wellbeing of tenants is considered within the confines of physical health-only.	1 (3)	*So I am going to answer this question as meaning their health…. People will go exercise in their lunch hour or come to work and take a shower before they start work….There is a cafeteria downstairs in our incubator in (name of town) and they pride themselves in fresh foods made in a natural way…(Ma_19).*
Unable to comment	1 (3)	

Note. Two respondents offered comments to this question that were included in two categories resulting in responses greater than the total number of participants (*n* = 28).

with other tenant-entrepreneurs. Many managers held strong views about the role and

operations of incubators, which is focused on tenants and the provision of support to enhance

their business growth. Managers also described the influence of incubator services in

supporting tenants in ways that develop their hope, efficacy, resilience, and optimism. An

overview of the ideas, themes and constructs captured in the qualitative data from managers

is presented in Table 19.

Table 19

Constructs, Themes, and Repeating Ideas Identified through Qualitative Analysis of the Interviews with Incubator Managers and Links to Hope, Efficacy, Resilience, and Optimism

Construct	Theme	Repeating ideas	Links established between repeating ideas and hope, efficacy, resilience, optimism
The Role and Services of Incubators	Amenities, Location, and Low Cost Rental	The incubator facility; Subsidised lease/rental; Business credibility; Location.	Hope; efficacy; resilience
	External Networks and Collaborations	Facilitating introductions; Incubator-university partnerships; Connecting with the local community.	Hope; resilience
	Incubator Community, Family	The incubator community of tenants.	Efficacy; resilience
	Internal Networks and Collaborations	Informal peer-to-peer collaboration and support; Methods for building collaboration; Collaboration for knowledge-gain; Observation; Competition - no competition; Peer-to-peer business partnerships.	Resilience; efficacy; hope
	Mentoring-Advice	Advice, mentoring, coaching; The process; Being supportive, empathetic; Staff-entrepreneurial experience; Building autonomy, independence; Communication; Building trust.	Optimism; efficacy; hope
	Perspectives about the Incubator	Role of incubators; Incubator operations.	Optimism
Incubating Tenants: The Intrinsic Benefits for Tenants at Incubators	Confidence	Methods for building confidence; Achieving business confidence.	Efficacy
	Fostering Knowledge	Fostering knowledge.	Hope; efficacy; resilience
	Goal-Focused	Advice and training to support goal setting; Goal success for tenants and incubators.	Hope
	Problem Solving the Challenges	Incubator provides scaffolding to assist tenants to address challenges; Identifying the challenges; Problems shared with peers; Overcoming the problem.	Hope; efficacy; optimism

3.4 Discussion

The aim of this second study was to examine whether a relationship exists between the characteristic services at business incubators and tenants' hope, efficacy, resilience, and optimism, from the perspective of incubator managers. The narrative perspectives from incubator managers were used to explore the direct and indirect contribution that incubator services have on supporting tenant wellbeing broadly, and on the constructs that underpin psychological capital, specifically hope, efficacy, resilience, and optimism. In addition, managers' perceptions of the importance of characteristic services at incubators and how these support the holistic needs of tenants was also investigated.

The evidence confirms that incubator managers, reflected through their attitudes and behaviours that directly and indirectly support tenants' hope, efficacy, resilience, and optimism. The evidence also shows that managers consider incubators to have an important role in supporting tenants' wellbeing. Importantly, the results from this study inform the original conceptual model which was developed for this study (Figure 5) while providing evidence for an association between the characteristic services at incubators and tenants' hope, efficacy, resilience, and optimism.

3.4.1 Business Incubator Services and Tenants' Positive Psychological Constructs

The qualitative data provides substantial thematic evidence to address the research question investigated in this study. The data shows that the services delivered at incubators support tenants' positive psychology as demonstrated by the manifestation of tenants' hope, efficacy, resilience, and optimism. Furthermore, the narrative insights from managers offers evidence that the support they provide tenants is similar to the methods that support and foster these constructs.

3.4.2 Business Incubator Services and Tenants' Hope

The qualitative data captured through interviews with managers in this study indicates an association between tenants' hope and three of the characteristic services at incubators, namely space, physical resources, and infrastructure, business supporting services, and networking. This evidence demonstrates that the strategies and supports, offered or delivered by mangers at incubators, support tenants' hope.

In the theme "amenities, location, and low cost rental", which is aligned to the characteristic service of space, physical resources, and infrastructure, managers described the physical attributes of the incubator as having a positive influence on tenants and their businesses. According to managers, the physical incubator environment reduces tenants' financial and physical pressures and challenges while, concurrently, enabling tenants to progress their business. This fosters the pathways necessary for tenants to be successful at their business which appears analogous with hope and of goal directed pathways for success (C.R. Snyder et al., 1997). While the physical environment alone is not analogous with the traditional interventions associated with developing hope, the thematic evidence from managers indicates that the attributes of the physical incubator environment does foster the pathways necessary for goal approach for tenants and of reducing potential challenges.

The advice, mentoring, and coaching delivered by managers, exemplified in the theme "mentoring-advice", which is analogous with the characteristic service of business support, is also associated with interventions that support tenants' hope. Communication, building trust, and being supportive and empathetic are methods used by managers to mentor tenants and provide them with advice. This is exemplified by managers' encouragement of tenants and the implementation of strategies that assist and train tenants to establish and develop methods to approach their goals. These techniques are consistent with interventions for hope, including of goal setting and goal directions and of "stepping" where smaller goals that

together lead to larger goal success are some of the interventions for developing hope (F. Luthans et al., 2015).

The methods that managers implement also assist tenants with their business challenges, including overcoming these. In the theme "problem solving the challenges", the support, advice, and mentoring managers provide appears to be instrumental in supporting tenants to address the problems or obstacles that they experience. The techniques that managers use also provides tenants with insights about overcoming (potential) challenges associated with their business. This is consistent with recognised interventions (F. Luthans & Jensen, 2002; F. Luthans et al., 2015) associated with hope, and of identifying contingency pathways when challenges arise, and of focusing on strategies for goal attainment.

Similarly, managers described adopting strategies through incubator networking and collaboration that also support tenants' hope. Evidence of this is presented in the themes "internal networks and collaborations" and "external networks and collaborations", which are analogous with the characteristic service of networking. Managers referred to the peer-to-peer interactions and establishing partnerships between tenants as helping them remain goal focused, despite business challenges. This assessment, and the evidence provided to support this view, aligns with the available literature evidence on the construct of hope. Interventions for hope are associated with strategies for developing and establishing goals and planning for challenges (F. Luthans & Jensen, 2002). External networks between tenants and their local community and within universities offers new opportunities and partnerships for tenants that can guide them with their goal pursuit and with new directions or pathways in their business.

The thematic evidence from the data also provides insights about the manifestation of hope in incubator tenants, exhibited in their behaviours as they approach and succeed at their goals. Moving into, and out of the incubator once a tenant has outgrown it, increasing the number of employees within a tenant-business, and procuring new business opportunities

offers tangible evidence for tenants' goal success. These measureable outcomes provide further evidence that the direct and indirect support that tenants receive from managers is fostering their hope and associated goal approach and success.

3.4.3 Business Incubator Services and Tenants' Efficacy

The thematic data offers extensive evidence that managers are delivering services that appear analogous with interventions that support the efficacy of incubator tenants. Managers identified three core services at being influential for tenants' efficacy, including the physical amenities of the incubator, business support services including mentoring, and the network for tenants at the incubator.

The physical attributes of the incubator, as described by managers in the theme "amenities, location, and low cost rental" (and which is similar to the characteristic service of space, physical resources, and infrastructure), appear to support tenants in their business. Managers attribute the physical environment, and the credibility and reputation that tenants gain from being located within the incubator, as engendering tenants' business confidence and fostering efficacy. The physical incubator environment and the role of managers within the incubator, thus supports tenants' positive cognitions and confidence, whereby the challenges inherent with establishing a new business (financial; suitability of location) are reduced or eliminated. The physical attributes of the incubator were also assessed by managers as engendering a sense of positivity in tenants, and efficacy. This is consistent with evidence suggesting the physical environment and those within it can have a positive influence over efficacy (B. C. Luthans et al., 2014; F. Luthans et al., 2010).

The thematic evidence demonstrates that the business services delivered by managers support tenants' efficacy. In the theme "mentoring-advice", managers described assisting tenants to address and extend confidence in their abilities to approach business goals and by encouraging their business autonomy and decision making. Managers delivered these

services through advice, mentoring, and coaching, each of which share similarities with business support services; one of the four characteristic services at incubators. These services and approaches align with methods for building efficacy and include modelling, training, and coaching (F. Luthans et al., 2015). These enable tenants to make informed choices about their business, which enhances their confidence (efficacy) in themselves, and their skills for developing their business. Furthermore, managers are imparting advice to tenants that is positive and emotionally supportive. This can assist with engendering feelings of positivity to energise and assist to support tenants' confidence in their abilities (Youssef-Morgan & Sundermann, 2014).

Managers described the methods for developing networking and collaborations amongst the community of tenants at incubators in similar ways to techniques that support efficacy. In the theme "internal networks and collaborations" managers encouraged collaboration between tenants and described this as important for tenants as mechanisms for observation, establishing community support, and facilitating knowledge exchange. Managers assisted in developing important connections for tenants by introducing them to potential clients or other experienced entrepreneurs. This reportedly was assessed by managers as providing tenants with an opportunity to observe and learn from other businesses and gain insights about the problems, challenges and successes associated with business. Vicarious learning, observation and modelling of others to successfully achieve their goals, together with the positive emotions this fosters, is an effective strategy for enabling confidence and thus self-efficacy (F. Luthans et al., 2010; Youssef & Luthans, 2007).

Strong evidence of the direct and indirect role of managers on tenants' efficacy occurs in the theme "confidence". Managers described tenants' confidence in ways that include how they approach their business and in decision making about their business. In some instances, they also assess that tenants' confidence enables them to adopt new business approaches,

despite some potential risk. Managers' perceptions of tenants' confidence is also exemplified in their ability to foster client communications and relationships, which are processes that tenants have implemented for broader business success.

The thematic evidence indicates that managers are directly and indirectly influencing tenants' efficacy through the delivery of services, and the provision of resources to tenants at the incubator. Within the workplace, efficacy has a powerful influence and is a desired construct, associated with positive workplace attitudes and performance (F. Luthans et al., 2015). The findings from this study provide further evidence that the delivery of characteristic services, by many incubator managers, is supporting tenants' efficacy. This in turn, is likely to foster the development of positive behaviours in tenants, consistent with past research which has shown that efficacy in entrepreneurs has a positive influence over entrepreneurial intentions and growth (Baum & Locke, 2004; Boyd & Vozikis, 1994).

3.4.4 Business Incubator Services and Tenants' Resilience

The thematic data in this study offers extensive evidence that managers are delivering services that are analogous with interventions that support the resilience of incubator tenants. Managers described the physical amenities and the provision of networking as aiding tenants' resilience whilst they are at the incubator. Both of these are analogous with the characteristic services of space, physical resources, and infrastructure, and networking.

The physical attributes of the incubator, which were described by managers in the theme "amenities, location, and low cost rental", were assessed by managers as influential in supporting and enabling tenants to progress their business. This theme shares similarities to the characteristic service at incubators comprising space, physical resources, and infrastructure. The benefits that tenants gain from the physical incubator environment provides them with resources and assets – the scaffolding – to support and grow their business. The physical resources are beneficial to tenants by assisting them to avoid or

overcome some of the challenges they would normally experience if they were establishing their business independently from the incubator. This appears consistent with interventions that support resilience, by establishing and building personal assets. These in turn can buffer adversity, assisting tenants as they approach and overcome risks (Garcia-Dia et al., 2013).

The evidence from managers in the theme "internal networks and collaborations" indicates tenants benefit from peer-to-peer networking. The advantages of networking are essential to tenants across all stages of their business growth, including when they experience business challenges. It is then that peer networking becomes a resource, an asset to tenants, which allows them to seek out others who have similar experiences and who can provide business and personal support. This support can buffer the risks and challenges they are experiencing. Developing assets can assist individuals to move towards their goals and avoiding and addressing risks is representative of the construct of resilience (Masten et al., 2009). Fostering social connections by establishing business and professional support amongst other tenants at incubators aligns with the research evidence relating to the value and process of building tenants' personal assets (F. Luthans et al., 2015).

Developing tenants' assets is also fostered through the external networks that managers offer tenants at incubators. In the theme "external networks and collaborations", managers described facilitating introductions and connections for tenants to businesses and organisations external to the incubator. These connections have the potential to, and at times, appear to provide tenants with the resources to support their resilience as they move towards their business goals. Similarly, the availability of other resources at the incubator, including the workshops and peer networking, were also identified by managers as being important to building tenants' knowledge.

Managers described the way that tenants gain new learnings through these services, akin to the acquisition of assets. The generation of assets to assist tenants provides another

approach for building incubator tenants' resilience and is consistent with methods (F. Luthans et al., 2015) for the development of assets, such as social capital and human capital, that have been found to be important to developing and supporting resilience.

The findings from this study provide evidence that the services at incubators that are similar to the characteristic service space, physical resources, and infrastructure and networking, are analogous with interventions that support tenants' resilience (Garcia-Dia et al., 2013). The services delivered by managers were assessed, through structured analysis of the manager data, as fostering tenants' assets. These can be used to buffer tenants during adversity, and assist them to approach and overcome risks.

3.4.5 Business Incubator Services and Tenants' Optimism

The thematic evidence suggests that the business support services described by managers are akin to techniques for developing optimism. The provision of advice-giving, mentoring, and coaching demonstrated in the theme "mentoring-advice", informed by the entrepreneurial experience of staff, shares similarities with the interventions that support optimism. The insights and experiences of managers informs the advice they offer tenants at key stages of their business development. This offers tenants the opportunity to contextualise, observe, and learn from managers and incubator staff appears to support their positivity when approaching their own business goals.

Managers in this study provided numerous examples where tenants have drawn upon the resources at incubators to overcome problems and challenges to generate a sense of accomplishment and of positivity for tenants. Having a positive and realistic approach with current and future tasks represents the construct of optimism (F. Luthans et al., 2015). Similarly, managers described the manifestation of optimism in tenants when they effectively solve the challenges they experience in a realistic and flexible way, and in conjunction with their peers at the incubator. This is evident in the theme entitled "problem solving the

challenges" and suggests that incubator managers are supporting tenants' optimism by implementing methods that are akin to interventions that support tenants' positivity.

3.4.6 Importance of Incubators in Supporting Tenants' Holistic Wellbeing

This study sought to understand the importance that incubator managers attribute to the characteristic services at incubators in supporting tenants' wellbeing. The quantitative data demonstrates that managers consider that incubators are important to supporting tenants' wellbeing. Specifically, the rankings that managers attribute to tenants' wellbeing (Table 16) is similar to the rankings they attributed to other, more traditional roles associated with incubators that have been identified in the published literature. These include business growth, jobs growth, and regional economic development (Ayatse et al., 2017; Isabelle, 2013; National Business Incubation Association, 2015b; Tang et al., 2013; Tavoletti, 2013). This finding indicates that for managers, the wellbeing of tenants at their incubator is an important consideration. Manager's awareness of, and perceptions about the importance of tenants' wellbeing in association with their business development confirms that managers assess this as part of their role at the incubator.

The qualitative data gathered in this study offers clear evidence that managers are cognisant of the broader, holistic needs of tenants. Half the mangers interviewed described providing support and empathy to tenants via the advice and mentoring services they delivered. This approach was frequently used when tenants were experiencing business or personal problems. This provides consistent insights and confirmation that managers have a broader understanding of their tenants; responding to their individual needs and their wellbeing. The empathy that managers have for tenants also appears to be shaped, partially, by their own personal experiences through past business ownership and entrepreneurial experience and exemplified in the theme "mentoring-advice". This finding is consistent with previous research (Redondo & Camarero, 2017) which has identified that managers with

previous entrepreneurial experience appear to be more influential in their capacity to effect

personal and business assistance, and networking for tenant-businesses.

The insights from incubator managers about the importance of tenants' holistic

wellbeing consolidates the extent to which managers are receptive to achieving the best

outcomes for tenants at their incubators. The findings provide validation that tenants and their

business development are important within incubators, as are the broader holistic needs of

tenants. Psychological capital and wellbeing are connected conceptually (Avey, Luthans,

Smith, et al., 2010; F. Luthans et al., 2015), with wellbeing referring to a broader construct

characterised by an individual's awareness of and feelings of wellbeing associated with how

they feel emotionally, psychological, and socially (F. Luthans et al., 2015). These insights

further consolidate the previous evidence from managers about the importance of their role in

supporting the hope, efficacy, resilience, and optimism of tenants at incubators, and their

holistic wellbeing.

3.4.7 Thematic Evidence and the Conceptual Model

The evidence from managers offers support for a relationship between the three

characteristic services at incubators – space, physical resources, and infrastructure, business

support services, and networking – and tenants' hope, efficacy, resilience, and optimism.

These relationship are presented in Figure 11. The evidence in this second study thus

provides overarching support for the original conceptual framework and predicted

relationships. With some modifications to the original conceptualisation, informed by the

data collected from managers, the links between the characteristic services at incubators and

the HERO within constructs have been integrated and are presented in the following figure.
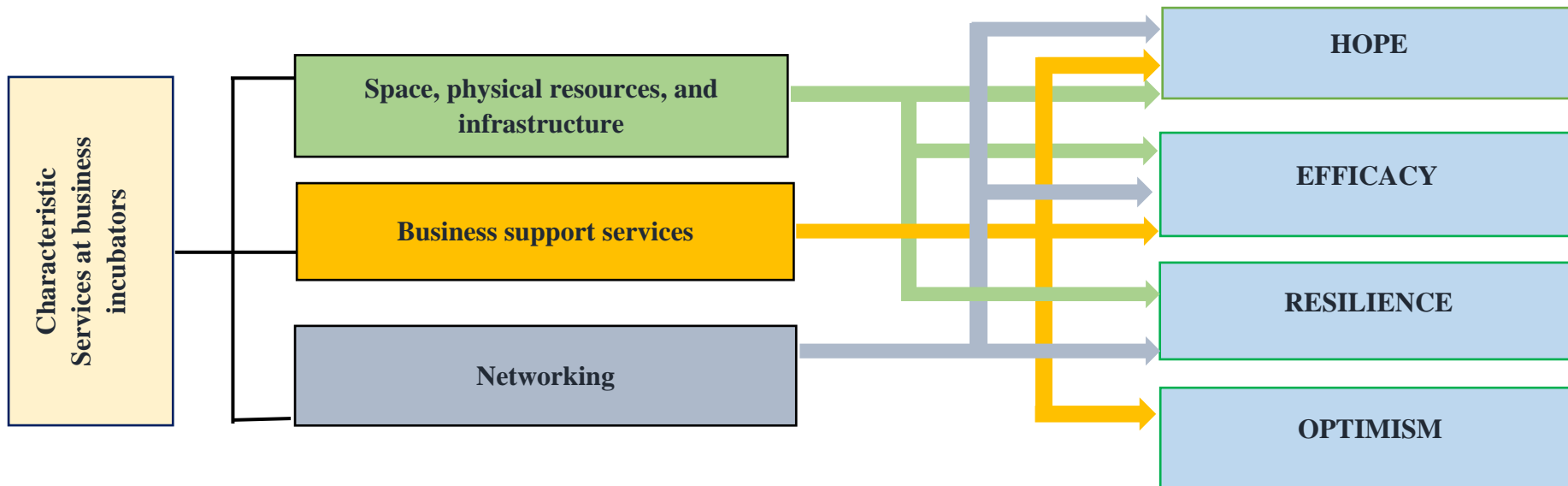
Figure 11. The conceptual model informed by the thematic evidence from managers, representing the relationships between three characteristic services at incubators and tenants' hope, efficacy, resilience, and optimism.

The revised model, based on the evidence from managers, demonstrates that only three of the four characteristic services at incubators, specifically space, physical resources, and infrastructure, business support services, and networking, are associated with tenants' hope, efficacy, resilience, and optimism. The findings confirm that only these three characteristic services are analogous with methods that support and foster the constructs of hope, efficacy, resilience, and optimism. In synergy these four constructs represent the HERO within that contribute to psychological capital. This finding extends the current understanding of the relationship between some, but not all incubator services, on tenants' hope, efficacy, resilience, and optimism as confirmed by the qualitative data from managers.

This model clearly shows similarities with the original conceptual model developed, and tested through this study. Specifically, space, physical resources, and infrastructure and networking are associated with tenants' hope, efficacy, and resilience. Managers' data also provides evidence for a relationship between business support services and tenants' hope, efficacy, and optimism. The qualitative evidence confirms that managers are contributing to this relationship, directly and indirectly, through the delivery of these services and, furthermore, they are adopting methods that are similar to interventions that support tenants' hope, efficacy, resilience, and optimism. Managers provided evidence of this in their descriptions of tenants' behaviours and attitudes towards their businesses, in which they frequently display manifestations of hope, efficacy, resilience, and optimism.

The relationships originally conceptualised and outlined in the model, and tested through the current research, are strengthened by the present data. The thematic evidence in this study shows parallels between the three characteristic services of space, physical resources, and infrastructure, business support services, and networking and interventions that assist and facilitate hope, efficacy, resilience, and optimism. This offers strong evidence

that these three characteristic services at incubators are related to the development of tenants' positive psychology as depicted in the parallel pathways outlined in Figure 11.

The data drawn from this study however offers no evidence of any association between the characteristic services at incubators of structured selection, entry, and exit and tenants' hope, efficacy, resilience, and optimism. Managers also ranked this service lower in the survey, and gave only minimal reference to the attributes that comprise this service, in the narrative data. This suggests that structured selection, entry, and exit has no association with interventions for and manifestations of tenants' hope, efficacy, resilience, or optimism. There was no thematic evidence for a relationship between structured selection, entry, and exit and tenants' hope, efficacy, resilience, or optimism. The lack of evidence from managers in this study for a relationship between structured selection, entry, and exit on tenants' hope, efficacy, resilience, and optimism may be because this type of service largely supports the operational requirements of incubators (Bergek & Norrman, 2008; Hackett & Dilts, 2004; Theodorakopoulos et al., 2014). Consequently this characteristic service does not support methods that might be akin to interventions that support hope, efficacy, resilience, and optimism and has been removed from the conceptual model.

The data collected from managers in this study offers tentative evidence for a potential relationship between the incubator services and tenants' psychological capital. Specifically the evidence from managers indicates that space, physical resources, business support services, and networking, appear to assist in developing and accumulating tenants' collective resources. These are accessed for positive gain and, according to managers' data, reflected in the manifestation of tenants' hope, efficacy, resilience, and optimism. This is consistent with the theory of resources that provides the foundation for the construct of psychological capital (Hobfoll, 2002; F. Luthans et al., 2015).

Managers involved in the current study suggest that tenants are exhibiting psychological capital. For example, three themes (confidence; fostering knowledge; problem solving the challenges) provide evidence of tenants having the confidence (efficacy) to adopt and implement steps to be successful at their business activities despite encountering challenges. Tenants are positive in their business approach (optimism) that leads to success with their business activities (theme: Problem solving the challenges). They are also goal-focused yet redirecting their goals as needed (hope) to enable them to be successful (themes: Fostering knowledge, goal-focused, problem solving the challenges), and rebounding from problems and set-backs enabling the ability to strive to achieve (resilience) and even exceed beyond set goals (theme: Fostering knowledge). These represent the core interactions between primary constructs that are representative of psychological capital (F. Luthans et al., 2015, p. 22; Youssef-Morgan & Luthans, 2014).

3.4.8 The Implications of this Research

The data collected and analysed through this study represents an important new direction for business incubator research. It offers unique insights about the relationship between characteristic services at incubators and tenants' hope, efficacy, resilience, and optimism, from the perspective of managers, which has not been investigated until now. The evidence confirms that incubator managers play an integral role in supporting tenants and their positive psychological constructs. They are instrumental in facilitating and delivering services at incubators that support tenants' hope, efficacy, resilience, and optimism. These findings have significant implications for the incubator industry and the role incubator managers and staff have in providing the optimal method of support and services that enhance tenants' business growth and the development of the positive psychological constructs of hope, efficacy, resilience, and optimism.

Incubators are complex business ecosystems that have developed over time, responding to global change and meeting the needs and demands of new generations of small business owners and entrepreneurs. Accordingly, the services available within these facilities have evolved in response to broad global changes and regional needs, implementing and delivering core services to meet the needs and support requirements of tenants. The data from managers in this study indicates that the incubator industry would benefit from furthering its concentration on the three characteristic services at incubators – space, physical resources, and infrastructure, business support services, and networking. These services have the dual benefit of assisting tenants to establish and grow their business while supporting the development of tenants' hope, efficacy, resilience, and optimism by using methods that are analogous with interventions for improving these four positive, psychological constructs. These four constructs, which in synergy contribute to the higher order construct of psychological capital, are highly regarded and important constructs for individuals within organisational settings (e.g., Forgeard & Seligman, 2012; King et al., 2016; F. Luthans et al., 2015; Reichard et al., 2013).

It is therefore imperative that incubators, through the support of incubator managers and staff, continue to deliver space, physical resources, and infrastructure, business support services, and networking to tenants at incubators. The delivery, by staff, of these three services is essential to supporting the development of positive constructs that will support and buffer tenants in their business. It is recommended that incubators prioritise this, and ensure staff at the incubator adopt consistency in delivering these services that benefit tenants' business and psychological development. Responding to the needs of tenants is particularly important as the incubator industry increases, and new models of incubation (Webb, 2016) become widespread. Consistent and well documented approaches associated with the delivery of space, physical resources, and infrastructure, business support services, and networking

will assist in optimising these services to meet the business needs and development of positive psychological constructs of tenants, and will guide managers in their approach and roles associated with service delivery.

A second implication from this study is that greater focus and support is given to incubator managers and staff, to guide them in the delivery of the characteristic services at incubators. Past research demonstrates the significant role that managers have in supporting tenants with networking (Apa et al., 2017; Meyer et al., 2016), knowledge development (Kemp, 2013; Scillitoe & Chakrabarti, 2010) and guidance when tenants experience difficulties (Kemp, 2013). Similarly, the evidence in this study highlights that incubator managers are instrumental in supplying resources that were found to support tenants' hope, efficacy, resilience, and optimism. Thus it is essential that greater provision and access to support and training is given to managers and incubator staff in optimising the core services that support the development of tenants' positive psychological constructs, specifically in association with space, physical resources, and infrastructures and the methods for delivering business support services, and networking.

The critical role that managers and incubator staff have in delivering characteristic services for tenants provides strong indication of the need to optimise the potential for effective and targeted incubator staff selection. Informed and consistent guidelines for selecting appropriate staff and ensuring their skills and qualities will advance their interaction with tenants, and the delivery of characteristic services for tenants, is recommended. Managers in this study indicated that trust, empathy, entrepreneurial experience, and knowledge are attributes that they consider essential to their roles and interactions with tenants at incubators. Many of these same attributes have been identified in the literature (McAdam & Marlow, 2007; Redondo-Carretero & Camarero-Izquierdo, 2017; Redondo & Camarero, 2017; Tottenham & Sten, 2005).

Furthermore published research attests to a relationship between employees' psychological capital and their positive perceptions of trust in their leader-managers; a relationship that mediates both employee performance and positivity (Clapp-Smith, Vogelgesang, & Avery, 2009). While further research is required to ascertain whether a similar relationship is also occurring at incubators, the evidence from managers in this study shows that good communication, building trust, and being supportive and empathetic are important attributes that they adopt when interacting with tenants.

Past research within traditional workplace settings has found that leaders can have a positive influence on employees (Laschinger & Fida, 2014; Wang, Sui, Luthans, Wang, & Wu, 2014) and their psychological capital (Rego, Sousa, Marques, & Cunha, 2012). Similar relationships may also be evident between managers and tenants at incubators. While the role of managers in traditional workplaces differ from the role of managers at incubators, the contribution and value of leadership on followers – whether tenants or employees – and their psychological capital is important, and worthy of further exploration. The qualitative evidence of the pervasive role that managers have at incubators reveals an important dynamic between incubator managers/staff and tenants, apparently influenced by their personal and leadership qualities.

Incubator research has been criticised for its inconsistent approach in methods that garner deeper insights about their impacts and approaches relating to incubation (Bergek & Norrman, 2008; Ratinho et al., 2013). It is now imperative that the academic research examines business incubators to further investigate the associations between the characteristic services at incubators with the development of tenants' positive psychological constructs, including psychological capital, which has been under explored in this industry. Consistent, evidenced-based frameworks informed by robust research has the potential to improve the

incubator industry, with the delivery of services that are beneficial to tenants, their business and their psychological development.

3.4.9 Study Limitations

This research offers new evidence from managers about the direct and indirect relationship of characteristic incubator services on tenants hope, efficacy, resilience, and optimism. However the study is not without limitations and these should be carefully considered in future research which seeks to expand upon the current study findings.

First, this study did not control for variations that exist between incubator services and managers such as the extent, range, and type of services available. While it is expected that there were differences between the data collected from managers about the availability of incubator services, controlling for these factors was difficult given the variation in incubator models that exist (e.g., Pauwels et al., 2016; Tavoletti, 2013).

In the present study, the data collected from managers, using surveys and interviews, informs the potential for a relationship between characteristic services on tenants' psychological capital, based upon the relationship between three of these services and the primary constructs that comprise psychological capital: hope, efficacy, resilience, and optimism. Third party, qualitative data, such as has been collected from managers, is currently not a recognised method for measuring psychological capital. Thus the potential relationship between the incubator services and tenants' psychological capital is only tentative in this study, and further research is necessary to confirm these assertions.

Another limitation with this study is the potential for manager bias, given that convenience sampling was adopted as the primary method for recruiting study participants. Managers participating in this study may represent those incubator managers with a particular style, commitment, or passion for their role within their incubator or who have been more

proactive in implementing services that appear to have been well received by tenants. This may have biased the findings.

Finally, there is merit in collecting data from tenants and managers located in the same incubator, to strengthen the triangulation of data. This was unable to be conducted in the present study due to recruitment challenges. However it is posited that triangulation of data from tenants and managers at the same incubator would yield additional insights that have not been captured in this research.

3.4.10 Conclusion

The data captured through survey and interviews with incubator managers offers a new perspective about the role of managers in supporting tenants' hope, efficacy, resilience, and optimism, and the importance that managers attribute to supporting tenants through the delivery of services at incubators.

Until now, incubator services have been introduced to support tenants to grow their business however insights from managers suggest that some of the characteristic services – the physical amenities, the business support through mentoring and coaching, and networking, internally and external to the incubator – influence tenants' hope, efficacy, resilience, and optimism. When working in unison these same constructs can form a synergy that comprises psychological capital (F. Luthans et al., 2015).

In this study, managers actively implemented characteristic services at the incubator that support tenants' businesses and establish a culture within incubators that fosters trust and empathy. The survey and interview data indicates that managers rate highly the importance of characteristic services at incubators in supporting tenants' positive psychological wellbeing, and directly and indirectly support the tenants' positive psychological constructs of hope, efficacy, resilience, and optimism. The evidence indicates that managers consider the role of incubators as important in supporting tenants' wellbeing. Both the role that managers have in

supporting tenants at incubators, and their contribution to the delivery of services are analogous with interventions that support hope, efficacy, resilience, and optimism.

This study offers insights about the integral and pervasive role of managers in directly and indirectly supporting tenants' hope, efficacy, resilience, and optimism, which in synergy, as the HERO within, supports tenants' psychological capital. It also suggests that managers, at the very least, have the capacity to influence or are actively influencing the characteristic services that assist tenants. Managers in this study are closely connected with their tenants and the interview data highlights the commitment and responsibility they have in meeting tenants' needs and in supporting them and their business.

There are implications from these findings to inform the incubator industry to ensure that all tenants' needs are being actively supported through the management and staffing structures operationalised at each incubator. This is particularly important for managers at non-traditional incubators – such as at virtual incubators, where regular connection with tenants may not occur – to ensure the quality of the services that meet the holistic needs of tenants and their businesses.

As business incubators start to flourish in countries in newly growing economies (Owusu-Manu et al., 2013; Setyawan & Suyundi, 2014; Tang et al., 2013; Webb, 2016) it is essential that the contribution and value of incubators, and their impact on tenants, is promoted widely. The present study provides a new direction for future incubator research that incorporates and gauges how tenants' personal, psychological constructs are influenced within the incubator environment and how this might enhance their behaviours and attitudes and outcomes associated with their business.

This research provides valuable insights for the incubator industry to inform the support, and subsequently promote the value that incubators offer tenants as they pursue their business. The potential value for tenants' holistic wellbeing, fostered through the

characteristic services available at incubators, and influenced by managers, has significant

potential to facilitate broad ranging benefits for tenant, mangers, and the incubator industry.

These benefits extend to the local regional and economic development for communities in

which business incubators are located.

Chapter 4: Discussion and Future Research

4.1 Overview

This research, comprising data collected from tenants and managers, entailed a comprehensive exploration of the relationships between four characteristic services at business incubators – space, physical resources, and infrastructure, business support services, networking, and structured selection, entry, and exit – and incubator tenants' psychological capital, hope, efficacy, resilience, and optimism. There has been little empirical investigation to elucidate these potential relationships, despite assertions that business incubators may influence the psychological capital of tenants (Ford, 2015). This current research addressed this knowledge gap through a rigorous examination of the analogies between the characteristic services at incubators and the interventions that support tenants' psychological capital, hope, efficacy, resilience, and optimism.

A conceptual model was developed to test the proposed relationships under examination. The model was informed by an analysis of (a) the published research regarding the impact of the characteristic services at incubators on tenants, and (b) the theoretical framework underpinning psychological capital and the positive psychological constructs of hope, efficacy, resilience, and optimism. Two distinct studies, applying a mixed methods approach, were conducted to test and explore these proposed relationships. Central to these studies were surveys and interviews conducted with incubator tenants and incubator managers, from which the data was drawn. The consolidated findings from both studies confirmed many of the relationships proposed in the original conceptualisation. The data drawn from this research provides strong evidence for the existence of a relationship between three of the four characteristic services at incubators and tenants' positive state of psychological development.

The findings from this research have implications for the incubator industry globally, underpinned by the building of new knowledge about the important association between space, physical resources, and infrastructure, business support services, and networking, on tenants' psychological capital, hope, efficacy, resilience, and optimism. This evidence has the potential to enhance the current approaches to service delivery at incubators. It will further inform the composition of services delivered to tenants, and assist in optimising the incubator experience by supporting tenant business, and their psychological capital.

4.1.1 Summary of Study 1

Study one investigated the relationship between the four characteristic services at incubators and incubator tenants' psychological capital, hope, efficacy, resilience, and optimism. Survey data ($n = 30$) was collected from incubator tenants, complemented by research interviews with tenants ($n = 12$). The quantitative data confirmed the existence of a positive relationship between space, physical resources, and infrastructure, business support services, and networking, and tenants' psychological capital, hope, and resilience. All four characteristic services were positively related to tenants' optimism. However, structured selection, entry, and exit was found to be only related to tenants' optimism. Thematic evidence from the interviews confirmed many of these relationships. It also provided evidence for a relationship between business support services, networking, and tenants' efficacy.

Overall, the findings from tenants' data offered support for many of the relationships predicted in the original conceptualisation of potential relationships. It indicated that three of the characteristic services at incubators, namely space, physical resources, and infrastructure, business support services, and networking are related to incubator tenants' psychological capital, and the constructs of hope, efficacy, resilience, and optimism. This finding delivers new evidence that the three characteristic services at incubators provided tenants with

supports that enabled them to acquire new resources that they utilise for positive gain, within their business. This is consistent with the theory of resources, which has been adopted to support the theoretical structure for psychological capital (F. Luthans et al., 2015).

Qualitative data collected in this study exposed the substantial contribution that incubator staff have in facilitating and delivering services to tenants that enable the development of constructs that support their positive psychological development. Findings demonstrated that staff within these facilities are integral in delivering characteristic services to tenants that are related to their psychological capital, hope, efficacy, resilience, and optimism.

The study provides important new knowledge that can inform and guide the incubator industry in its current practices around the delivery of characteristic services that shape and enhance tenants' business and psychological development. There is now considerable potential to harness this knowledge, and for incubators to further enhance the outcomes for tenants, by concurrently supporting the positive psychological state of development and the business development of tenants.

4.1.2 Summary of Study 2

In a second study, research was conducted to explore whether a relationship exists between the characteristic services at business incubators and tenants' positive psychological constructs, comprising hope, efficacy, resilience, and optimism, from the perspective of incubator managers. Data was collected using surveys ($n = 75$), and interviews ($n = 28$).

The evidence from the data confirms that incubator managers directly, and indirectly, support tenants' hope, efficacy, resilience, and optimism through the delivery of the characteristic services at incubators. The strength of the thematic evidence further informs the conceptual model, providing support for the relationship between space, physical resources, and infrastructure, business support services, and networking, and tenants' hope and efficacy.

The thematic evidence from managers was found to support a relationship between space, physical resources, and infrastructure, and networking and tenants' resilience, while business support services appear to be related to tenants' optimism. The findings from managers offers strong evidence to support the relationship between three of the characteristic incubator services and tenants' psychological capital.

This second study reinforces the critical role of managers in supporting tenants' business and their hope, efficacy, resilience, and optimism, through the facilitation and delivery of space, physical resources, and infrastructure, business support services, and networking. Incubator staff are also integral to developing a positive incubator environment that engenders tenants' trust, support, and empathy. The strength of commitment, empathy, and sense of responsibility that incubator managers and staff have for tenants is also exemplified in the implementation of the characteristic services that support tenants' hope, efficacy, resilience, and optimism.

4.2 Revised Conceptual Model

Examination of the data from both studies, collected on the relationship between four characteristic services at incubators and tenants' positive psychological constructs, leads to a refined and enhanced conceptualisation, as presented in the model in Figure 12. It demonstrates the positive association between space, physical resources, and infrastructure, business support services, and networking at incubators and tenants' hope, efficacy, resilience, and optimism. The combined qualitative and quantitative data from tenants and managers provides the most compelling evidence to date that these three characteristic services at incubators support and develop the constructs that are related to tenants' hope, efficacy, resilience, and optimism.
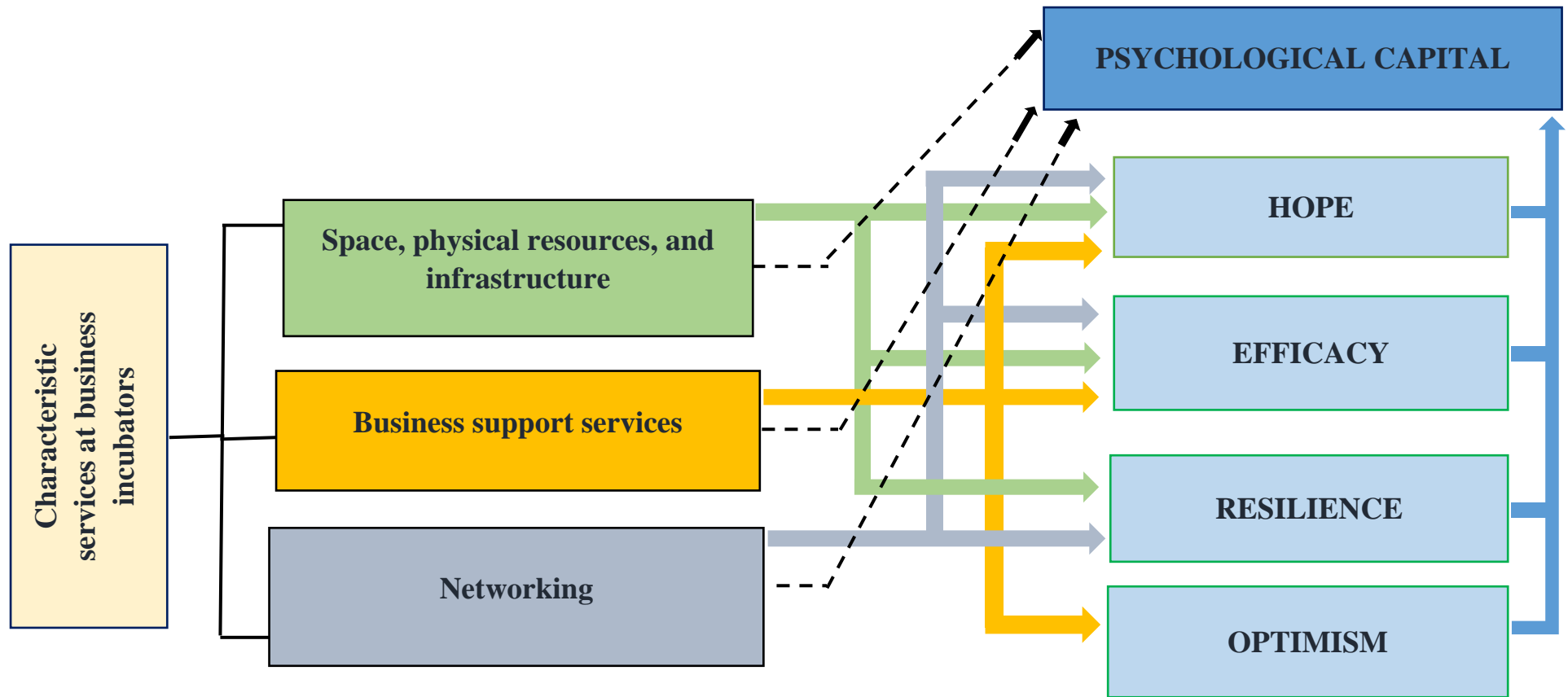
Figure 12. The final conceptual model informed by the consistent evidence from incubator tenants and managers, representing the relationships between the three characteristic services at incubators and tenants' hope, efficacy, resilience, optimism, and psychological capital.

The quantitative data collected from tenants supports the existence of the relationship between incubator services and psychological capital. The interview data from tenants and managers offers further evidence to support this relationship. Their narrative experiences confirm that the four constructs of hope, efficacy, resilience, and optimism are fostered by many of the characteristic services at incubators. The primary explanation to account for this result is that the three characteristic services at incubators are analogous with interventions that support, develop, and improve tenants' hope, efficacy, resilience, and optimism that in synergy, comprise psychological capital.

Specifically, there are consistencies, and similarities in the descriptions provided by tenants and managers between the three characteristic services and interventions for hope, efficacy, resilience, and optimism. This is outlined in the following examples:

1. Tenants' hope is associated with the progressive support they receive at the incubator, as they develop and approach their goals. Specifically, goal direction and achievement is supported by the space, physical resources, and infrastructure, at the incubator. Hope is also manifest in the professional support that tenants receive from incubator staff, through the provision of business support services, and from their incubator tenant-peers, which is fostered through networking and related activities.

2. Tenants' efficacy is related to these same three services and is consistent with interventions that support tenants to build their business confidence. This is generated by the physical incubator environment, and in the interactions that tenants have with incubator staff, through the business support they receive, and with their tenant-peers, through networking.

3. Tenants' resilience and the development of assets and resources is associated with their physical environment at the incubator through the space, physical

resources, and infrastructure, and in the social and professional support that they

receive from the broader network of tenant-peers, at the incubator.

4. Tenants' optimism is fostered through the business support services and the

positive expectancy that this support fosters.

These four positive constructs of hope, efficacy, resilience, and optimism, which are

manifest in tenants are the "building blocks" for psychological capital. Psychological capital

enables an individual to prosper as they move, in a dynamic and adaptable way, towards their

desired outcomes, enabling them to assess, respond to, and overcome the challenges that they

will inevitably experience (Avey, Luthans, & Youssef, 2010).

The research findings are consistent with the theory of resources (Hobfoll, 1989,

2002) which has been adopted to support and explain the concept of psychological capital as

a positive, higher order construct (Luthans et al., 2015). Drawing broadly upon this theory is

the proposal that psychological capital is a higher order construct representing the synergy

between the constructs of hope, efficacy, resilience, and optimism. As an integrated and

powerful construct, psychological capital enables an individual to approach their goals and

effectively respond, with the intention and desire of succeeding at challenging tasks (Avey,

Luthans, Smith, et al., 2010). In this research, the evidence indicates that three of the four

characteristic services at incubators are related to tenants hope, efficacy, resilience, and

optimism, and their psychological capital.

Consistent with this explanation, the characteristic services at incubators contribute to,

and enhance, the state-like, and developmental qualities of these HERO within constructs.

The narrative insights from managers and tenants indicate that tenants are drawing widely on

these resources and this aids them, and their business, as they approach their goals with

positivity and commitment. The provision of the services was found to develop tenants'

confidence in addressing the challenges they encounter, and to persevere with their business

goals, for success. This finding can be likened to the manifestation of all four resource-constructs as they unify and interact as an effective construct to form psychological capital. The three characteristic services at incubators are supporting and developing the four HERO within constructs that comprise psychological capital. The synergy between the four individual constructs that are fostered by the three incubator services thus contribute to, and support the development of psychological capital. Tenants are able to draw upon these internal resources to appropriately respond, adapt to, and approach their goals for positive gain and greater outputs (Luthans et al., 2015).

The incubator environment was referred to by tenants and managers as a stimulating and positive environment in which personal and business support is ever-present, and where there is a broad and specific assistance to foster business goals. These references are consistent with the concepts associated with the theory of resources, whereby the "organizational ecology" provides an important environment for accessing available, and important resources, that permeate within the facilities providing safe "passageways" for resources to be delivered, encouraged, shielded, and shared (Hobfoll, 2011, p. 118). These include human resources, such as other employees and managers, as well as shared resources available across the organisational environment providing a "marketplace" from which individuals can access and acquire needed resources (Hobfoll, 2011, p. 118).

The evidence from this research suggests that incubators offer a marketplace for tenants to access available, and shared resources, such as the characteristic services at incubators, together with the important support they gain from the incubator staff and their fellow incubator tenants. Tenants draw on these resources, available at the incubator, to build and develop their hope, efficacy, resilience, and optimism, and collectively their psychological capital. This allows them to seek positive outcomes by drawing extensively upon their resources as they review and update their situations towards their goals, to

overcome obstacles, and to succeed and achieve at new goals (F. Luthans et al., 2015). This approach represents the positive state of development that is associated with the construct of psychological capital.

Contrary to initial predictions, there was little evidence from managers and tenants to support a relationship between structured selection, entry, and exit and tenants' psychological capital. Although the quantitative data from tenants suggests a relationship exists between this characteristic service and optimism, there is no evidence to indicate any further association between this service and tenants' psychological capital. Given the lack of evidence from this multi-source, multi-method research approach, structured selection, entry, and exit was removed from the conceptualisation of a model for supporting the implementation of psychological capital as it is not a characteristic incubator service that supports tenants' positive psychological state of development.

Although the conceptual model presents the consolidated findings that are evident in both studies, with tenants and managers, there was one exception to this. The quantitative data from tenants that informed the relationship between the characteristic services and psychological capital was also included in the model.

One of the few points of difference between the tenant data and that of managers was that only the data collected from tenants showed positive relationships between (a) business support services and resilience, and (b) space, physical resources, and infrastructure, networking and structured selection, entry, and exit and tenants' optimism. There are two possible explanations why these relationship were only evident from tenants. First, incubator tenants have firsthand experience with being "tenanted" at an incubator thus their insights and perspectives are unique. Consequently, the relationships evident in their data alone, represents their direct, and lived experiences. This is something that, within the scope of data collection, only they were able to assess, and not managers. Second, the methods for

collecting data from tenants, which included the psychological capital questionnaire together with quantitative approaches, may have been more sensitive to detecting other relationships that were not evidence in the data collected from managers.

The conceptual model which has been developed, tested, and modified through this research offers a blueprint for the incubator industry about delivering the characteristic services to foster and maintain tenants' personal positive resources while also developing psychological capital, hope, efficacy, resilience, and optimism. One of the principal features of incubators is the provision of tangible and intangible resources to complement and support small business development (e.g., Hausberg & Korreck, 2018; International Business Innovation Association, 2017; van Weele et al., 2017). This research extends the importance of three characteristic incubator services based on associations with tenants' positive psychological constructs. The psychological capital of employees is highly valued within the organisational setting, and elsewhere. It is associated with greater, positive outcomes and with behaviours and attitudes that have immediate and longer term benefit within the workplace environment (e.g., Avey et al., 2011; Guido et al., 2018; F. Luthans et al., 2015; S.J. Peterson et al., 2011). Given the relationships identified in this research, and the benefits for tenants that influences behaviours and attitudes, it is imperative that the incubator industry promotes the integral and holistic value of these three services so as to optimise the dual benefits for tenants. The final conceptual model provides a consolidated framework to guide these approaches, and offers new directions based on the research finding for the business incubator industry (peak industry bodies, managers and tenants).

4.3 Implications for the Incubator Industry

This research offers important, contemporary evidence that space, physical resources, and infrastructure, business support services, and networking at incubators are positively related to tenants' psychological capital, hope, efficacy, resilience, and optimism.

Furthermore, the evidence suggests that these three characteristic services are akin to interventions that not only target tenants' business growth and development, but also, importantly, support their positive psychological development. The consistency in the findings between tenants in study one, and the observations of these relationships by managers in study two, amplifies the strength of evidence captured in this research. The findings simultaneously expand the knowledge base in an area that has been largely underexplored in the broader research domain. Various implications are identified for the incubator industry, extending to all tiers of the industry, from the peak industry organisations, to individual incubators, through to incubator staff and tenants. Practical suggestions are offered to support and enhance the delivery of characteristic services to incubator tenants to exploit the positive relationships that are represented in the conceptual model.

The first implication from this research is for the incubator industry to commend to its member organisations the importance of the relationship between the three characteristic incubator services of space, physical resources, and infrastructure, business support services, and networking, on incubator tenants, their business, and their psychological capital. The provision of services to support tenants at incubators has been long established, and represents an integral and universal feature of incubators (e.g., Bruneel et al., 2012; Fernandez Fernandez et al., 2015). With three of the four characteristic services now found to be related to tenants' hope, efficacy, resilience, and optimism, there is a need to foster practices to advance these three services. Peak industry organisations (e.g., the Innovation Association, National Endowment for Science, Technology, and the Arts in the UK, and the Business Innovation and Incubation Australia) should endorse and promote the value of these three important characteristic services for tenants' psychological capital, to member organisations.

One strategy for achieving this is to develop industry-wide guidelines about these three characteristic services at incubators. Guidelines need to be developed in close consultation with the incubator industry, including input from peak industry organisations, incubator managers and staff, and with tenants. The development of guidelines should incorporate practices and interventions for psychological capital and the constructs of hope, efficacy, resilience, and optimism that can be fostered and enhanced for tenants through the three characteristic support services at incubators, namely space, physical resources, and infrastructure, business support services, and networking. Expertise from occupational psychologists and organisational consultants could provide important guidance and input in leading these developments and ensuring the applicability of guidelines for the whole industry, with optimal industry uptake, once testing of the guidelines has been undertaken.

An industry-wide approach, together with consistent guidelines will ensure that individual incubators can source information that will enable them to successfully implement, or adapt, the characteristic services that are related to tenants' hope, efficacy, resilience, and optimism. Industry-endorsed directions about these services will be particularly helpful given that there exists considerable variation across incubators and typologies (e.g., Albort-Morant & Ribeiro-Soriano, 2016; Hausberg & Korreck, 2018). In this research, a core set of services, features, and amenities comprised each of three characteristic services. Informed by past research, these represent the composite elements of each of the three characteristic services that all incubators need to adopt. It represents an initial and informed "catalogue" of attributes and features that are recommended for incubators to incorporate within their programme of services.

Another implication derived from the findings of this research is the important role and scope of work of individual incubator managers and staff. The interview data from managers demonstrates that many are aware of, and consider the holistic needs of the

incubator tenants, as important. It is therefore necessary that incubator staff are provided with sufficient information to enable them to further develop their understanding of (a) the relationships between the three characteristic services and tenants' psychological capital, and (b) the integral role that staff have in delivering these characteristic services that support tenants business and holistic needs.

Furthermore, the research findings highlight the need for careful and considered selection and employment of suitable incubator staff and managers. Incubator staff are integral to establishing a positive incubator environment in which they facilitate and/or deliver the characteristic services that are related to tenants' hope, efficacy, resilience, and optimism. Selecting managers and staff at incubators capable of implementing these three services should be a high priority. Greater consideration and attention is required to ensure the experience and skills of incubator staff continues to meet the broad range of tasks required of them for supporting and promoting the delivery of the three characteristic services at incubators that was associated with tenants' positive psychological development.

The scope of the role of incubator managers and staff has been widely examined in the research (e.g., Lewis et al., 2011; Redondo & Camarero, 2017; Rice, 2002), and industry bodies are now also providing advice and support for incubator managers (see for example the International Business Innovation Association the White Paper entitled "Advice from the Trenches": https://inbia.org/building-blocks). However, in addition to the values and attributes of managers and staff that have been identified in the published research and promoted by the industry, this research also emphasises the need for staff to be empathetic and committed to the holistic wellbeing and needs of tenants, and their business. In this research, the data consistently highlights this support in the many facets associated in business acumen which is shared by managers with tenants, through mentoring, training, and advice-giving. This is particularly important in how the three characteristic services have

been identified in promoting tenants' hope, efficacy, resilience, and optimism. The provision

of a model of best-fit, for incubators managers and staff, ensures the sustained delivery of

services, and their suitability and appropriateness for the broad role and skills required of

these roles.

Furthermore, the selection of suitable staff at incubators must consider authentic

leadership styles, given the influential role that incubator managers have in facilitating and

delivering the characteristic services that support tenants' positive psychological constructs.

Authentic leadership is derived from organisational psychology, whereby authentic leaders

possess self-awareness and positive behaviours (F. Luthans et al., 2015). Similar qualities

were identified in the data about managers in this research. Previous work has examined

authentic leadership in terms of maximising business outcomes. Authentic leadership has

been found to have a positive impact in traditional employment settings; impelling and

enhancing the effectiveness of followers (Wang et al., 2014), and reducing workplace

burnout rates (Laschinger & Fida, 2014). Employees who perceive their managers to have

authentic leadership qualities have higher levels of job commitment, satisfaction, and

workplace happiness (Jensen & Luthans, 2006). It also supports and enhances employee

creativity, which in turn fosters their psychological capital which enhances positive

workplace creativity and assists to mitigate challenges within organisations (Rego et al.,

2012). Authentic leadership could thus add a new dimension to the support for the business

and psychological capital of tenants. The combination of (a) authentic leadership qualities of

staff at incubators; (b) an improved understanding of psychological capital for tenants; and,

(c) an enhanced and consistent delivery of characteristic services at incubators is likely to

have a compounding and positive impact on tenants. The potential outcome of which could

lead to increased support for tenants in building, sustaining, and enhancing the relationships

between the characteristic services at incubators and tenants' psychological capital. This

could lead to improvements in tenants' personal and professional success, and in their goal attainment.

The evidence drawn from this research highlights the need for the provision of suitable training for incubator managers and staff, about the benefits of the relationships outlined in the conceptual model. The development of training for incubator staff around the provision and delivery of the characteristic services associated with tenants' positive psychological constructs will provide the foundation for knowledge uptake and understanding at individual incubators. Education, training, and access to resources targeted at incubator staff, together with information about how they can integrate their roles, practices, and the services at the incubator, so that they align with the concept of psychological capital and the benefits associated with this construct, is essential for integrated and industry-wide uptake.

The incubator industry also needs to be proactive in supporting tenants to develop their understanding of psychological capital and to harness the opportunities to develop and expand this, and other positive psychological constructs. The exponential growth in incubators globally, of new business trends, and the evolution of new and next generation incubators (Galbraith et al., 2019; Pauwels et al., 2016; Webb, 2016), necessitates that tenants remain a central consideration for new incubator approaches. One recommendation emerging from this research is to support and nurture tenants' understanding of psychological capital and the constructs of hope, efficacy, resilience, and optimism. Providing education and training to tenants about these constructs and highlighting the potential personal and professional benefits they can gain through their access to, and utilisation of the three characteristic services at incubators, is essential. The incubator peak organisations and staff at individual incubators are uniquely placed to implement strategies to inform and educate tenants about the contribution and value of the three characteristic services, for professional development and enhanced positive psychological development.

Tenant education about these relationships will also assist the incubator industry to address some of the shortfalls that have been identified, pertaining to the uptake of incubator services by tenants. Published research has shown that incubator tenants do not always utilise the services available to them at the incubator (e.g., Bruneel et al., 2012; Patton, 2014; Schwartz & Hornych, 2010). Various reasons have been offered for these findings, including the inadequacies of the available services in meeting tenants' needs (Bruneel et al., 2012), and inconsistencies between tenants' desire for, and actual need for, these resources (van Weele et al., 2017). Actioning findings from this research presents an opportunity to encourage tenants to fully utilise the incubator services (especially the three characteristic services that have been found to be related to tenants' positive psychological constructs) by promoting the value of these characteristic services for their psychological capital. Elevating the benefits of the three characteristic services at incubators for tenants enables them to make informed decisions about their access to, and utilisation of the space, physical resources, and infrastructure, business support services, and networks at incubators.

The introduction of education and training about the relationship between incubator services and tenants positive psychological constructs could also assist in reducing the attrition rates of new businesses during their tenancy at the incubator. Psychological capital in traditional workplace settings manifests in a dynamic, cognitive approach towards goals expectation for success and wellbeing (Avey, Luthans, & Youssef, 2010). It is also associated with a host of positive attributes and benefits, such as improved job engagement (Lorenz et al., 2016), greater job satisfaction (F. Luthans, Avolio, et al., 2007), and job performance as rated by managers (F. Luthans, Avey, Clapp-Smith, et al., 2008; F. Luthans et al., 2005; S.J. Peterson et al., 2011). It is therefore posited that similar benefits will be evident for tenants at incubators, fostered through the three characteristic services of space, physical resources, and infrastructure, business support services, and networking.

A further implication from this research is to develop tenants' psychological capital in conjunction with more structured interventions, such as the Psychological Capital Intervention (F. Luthans, Avey, et al., 2006). Formal interventions comprise strategies that support each of the HERO within states, and the overarching construct of psychological capital (F. Luthans, Avey, et al., 2006; F. Luthans et al., 2010). There is value in offering tenants access to interventions, either in situ or online, so as to further support their psychological capital, in tandem with the existing characteristic services at incubators. This could assist tenants during the unpredictable and often challenging journey of entrepreneurship, that is influenced by context and situation (Zahra et al., 2014), personal experience, skills, and life experience (Lamine et al., 2014; Mazzarol et al., 2014; Miller & Le Breton-Miller, 2017; Soetanto, 2017). With broad interventions available to support psychological capital (F. Luthans & Youssef-Morgan, 2017) there is now scope for developing suitable, and tested interventions that meet the needs of tenants. Such interventions would involve brief, focused training that should be tailored to tenants at incubators. Building and enhancing skills through activities that develop the constructs of hope, efficacy, resilience, and optimism should be focused on goal setting, planning the approach to goal success, and addressing potential obstacles that might be encountered (F. Luthans & Youssef-Morgan, 2017).

In summary, the conceptual model, informed by this research, has far reaching implications for the incubator industry. First and foremost, peak incubator organisations are well placed to promote and foster the relationships between the three characteristic services, to tenants and their psychological capital. There is considerable onus on managers, staff, and tenants within individual incubators, to develop their knowledge and understanding of these positive relationships, and their roles and influence on these relationships. Various strategies have been offered for all tiers of the industry, to assist in the knowledge transfer about these

relationships, and in fostering both the uptake of, and practices associated with, the delivery of these characteristic services.

4.4 Future Research

This research provides important new evidence for the incubator industry about the holistic contribution that the characteristic services at incubators have on tenants. Future research should now expand upon this knowledge base, with the aim of developing and further informing current conceptualisations to promote industry benefit, and that of incubator tenants.

First, the conceptual model informed by both studies in this research could be further informed by conducting research that is focused on understanding how the relationship between the three characteristic services and tenants' psychological capital impacts on tenants' perceptions and attitudes towards their business, and the potential influence it has on desired business outcomes. This research has established that a relationship does exist between space, physical resources, and infrastructure, business support services, and networking at incubators and tenants' psychological capital, hope, efficacy, resilience, and optimism. Research is now needed that further examines these relationships to gauge the impact they have on tenants and their businesses. Researchers (Avey et al., 2011) have consistently championed the benefits, across a range of areas, but particularly in traditional workplaces, of psychological capital on positive attitudes, behaviours, and performance. Likewise, a range of outcomes are associated with the positive constructs of hope (Friend et al., 2016), efficacy (Baum & Locke, 2004), resilience (Bonanno, 2012), and optimism (Forgeard & Seligman, 2012). It is important to determine whether, as expected, tenants' psychological capital, which is related to three of the characteristic services at incubators, has a positive influence on tenants' own perceptions, attitudes, and behaviours towards their own business.

It is also essential to determine whether the potential benefits of these relationships, for incubator tenants, informs incubator success through increases in small business growth and independence, and jobs growth. Future research will need to consider the influence of entrepreneurship on these relationships and potential outcomes, given the association between entrepreneurship and psychological capital (e.g., Baluku et al., 2016; Contreras et al., 2017).

This research confirms that incubator managers and other incubator staff are integral to implementing and delivering services, exhibiting a consistent set of skills, experience, and empathy for the tenants through characteristic services that support tenants' hope, efficacy, resilience, and optimism. Further research could extend this understanding by investigating the similarities, and differences, between the characteristics and attributes of incubator managers and staff in delivering the characteristic services at incubators.

In this research, the qualitative data from incubator tenants and managers delivered a rich source of information that complemented the traditional, quantitative measures of psychological capital. The interview data provided substantial evidence supporting the existence of the underlying constructs of hope, efficacy, resilience, and optimism that in synergy influence psychological capital. The formal, standardised measure of psychological capital (Psychological Capital Questionnaire; Luthans, Youssef, & Avolio, 2007) has been widely researched and utilised. Alternative measures of psychological capital are now being developed; a recent study for example, reported on the validity of an implicit measure for psychological capital (Harms, Krasikova, & Luthans, 2018). The qualitative data in this research supports the need to consider the development and validation of an interview schedule comprising questions that could complement the current method of measuring psychological capital. This would require extensive research with close consideration of the theoretical constructs and empirical research underlying the current instrumentation for

measuring psychological capital, the Psychological Capital Questionnaire. Subsequent

piloting of the interview schedule will ensure its potential applicability and relevance. A

mixed methods approach to measuring this construct, using qualitative methods to increase

understanding of the composition of psychological capital, has gained some discussion in the

research in recent years (Burhanuddin et al., 2019; Dawkins et al., 2013; F. Luthans &

Youssef-Morgan, 2017; Youssef-Morgan, 2014) and this current research provides further

support for this.

Finally, to further research in the incubator domain, broad industry support is

required. This will assist in extending the reach of the research, and overcoming some of the

challenges to tenant-participant recruitment that were experienced in this research. Obtaining

in-kind investment from the incubator industry, and specifically from national incubator

organisations, could assist with gaining industry-wide "buy in" for future research. Similarly,

the recruitment of industry champions – including incubator managers, staff, and tenant-

leaders from incubators – could assist in promoting the value of the research to participant-

stakeholders, and assist with integrating potential research findings, into practice. Research

champions and research advocates in the health sciences are valued for their assistance in

implementing and driving research with positive and sustained influence over research

participation (Oduola, Wykes, Robotham, & Craig, 2017). Similarly, dedicated incubator

industry advocates and champions could potentially assist with promoting participant

recruitment to future studies.

A core premise guiding this research has been the analogies between the characteristic

services offered at incubators, and tenants' hope, efficacy, resilience, optimism, and

psychological capital. Tentative predictions about these relationships were informed by a

range of factors, including empirical evidence and theory. With these relationships

confirmed, there is now greater impetus for future research to be conducted to understand the

impact on tenants, through these relationships. A range of areas for future consideration have been proposed, informed by the relationships outlined in the conceptual model. Research that informs and extends the conceptual model will offer further benefit for the incubator industry in implementing services that support tenants' business and their psychological capital.

4.5 Conclusion

There has been a dearth of published research examining the relationship between incubator characteristic services and tenants' psychological capital. Yet preliminary examination suggested that a relationship exists between the four characteristic services at incubators, and tenants' psychological capital, hope, efficacy, resilience, and optimism. A robust research design using multi-methods and data sources tested the relationships outlined in the provisional conceptual model. Data collected from incubator tenants and managers provides the first clear indication that three of the characteristic services at incubators are positively related to tenants' psychological capital, hope, efficacy, resilience, and optimism. This research thus provides new insights to inform and direct the broader incubator industry about these relationships, and the value that this has on tenants in supporting their business, and their psychological development.

The consolidated evidence about the role that incubator managers and staff have at their incubators indicates that they are integral to implementing services and supports at incubators that foster these relationships with tenants. The current research also provides evidence of the importance that interview questions have in providing new insights about psychological capital. While this research is just one of a handful of studies to have implemented these unorthodox measures, it offers new insights that could be used in the development of an interview schedule for psychological capital, to complement the existing questionnaire.

This research has shaped the development of a conceptual model which provides the incubator industry with a framework to guide the delivery of characteristic incubator services for tenants. This model consolidates the findings from both studies and highlights the important relationships that exist between the three characteristic services offered at incubators and tenants' psychological capital and their hope, efficacy, resilience, and optimism. The findings have far reaching implications for the incubator industry. First and foremost, it is essential that there is incubator-wide understanding of these, with practices adopted to ensure these relationships are promoted and established at all incubators. Subsequently, the development of guidelines to promote and foster the three characteristic services at incubators for universal uptake and consistent provision of services is required. A multi-level approach that incorporates education to support these relationships, and the uptake of key incubator services by tenants is another primary outcome associated with this research.

While new research directions are offered to quantify how these relationships influence tenants' personal and professional outcomes and productivity, the findings from this research provides an essential step in affirming the importance of business incubators in supporting tenants' holistic needs. As incubators expand worldwide, the role and support provided by incubators to tenants must remain constant, delivering relevant and beneficial services to tenants that support their business development, and their psychological capital.

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Appendices

Appendix A

<Insert date>

To the Chairperson, <u><Name of peak incubator association included here></u>

I am contacting you about research that I am undertaking as a PhD student (together with Dr Angela Murphy, Prof Suzanne McLaren and A/Prof Helen Thompson) from Federation University Australia. This research is exploring the relationship between business incubator services and the psychological capital of tenants.

As the peak body for incubators in <name of country>, I am notifying you of my intention to contact business incubators and, where possible, I am seeking your assistance to distribute information about my research to business incubator managers.

This research involves participation from tenants of business incubators worldwide. Tenants who agree to participate in this research will be requested to complete an online survey, at two time points (four six months apart). Interviews are also being conducted for this research.

The research findings will provide important insights for the incubator industry and for incubator manages in guiding the provision of support services that facilitate both tenants' business growth as well as their positive psychological development.

Further information about this research is attached, in the plain language information statement (PLIS).

If you are able to assist with recruitment to this study could you please provide me with a list of members within your network of business incubator organisations. Alternatively, I can provide you with a cover letter and information about the research for incubator managers and tenants that you could forward through your networks, on behalf of the researchers.

Please note that this project has received approval from the Federation University Australia's Human Research Ethics Committee (project number: A17-110).

I hope that you will be able to assist me to contacting your member organisations about this research. If you require any further information about this study, please contact the researchers listed below.

Yours sincerely,

Alison Ollerenshaw

For further information, please contact:

Alison Ollerenshaw
PhD Researcher
Federation University Australia
E: a.ollerenshaw@federation.edu.au
T: +61 3 53276201

Dr Angela Murphy
Principal Researcher
Federation University Australia
E: aa.murphy@federation.edu.au
T: +61 3 5327 6198

Associate Prof Helen Thompson
Associate Researcher
Federation University Australia
E: h.thompson@federation.edu.au

Prof Suzanne McLaren
Associate Researcher
Federation University Australia
E: s.mclaren@federation.edu.au

Appendix B

<Insert date>

To the Manager/Director/CEO: <Insert Name of Incubator>

Dear Sir/Madam,

I am contacting you about research that I am undertaking as a PhD student, together with Dr Angela Murphy, Prof Suzanne McLaren and A/Prof Helen Thompson from Federation University Australia. The research is exploring the relationship between business incubator services and the psychological capital of tenants.

As the manager of a business incubator, or similar organisation, I am seeking your assistance to distribute information about my research to businesses ("tenants") in your business incubator.

This research involves participation from tenants of business incubators worldwide. Tenants who agree to participate in this research will be invited to complete an online survey, at two time points (four to six months apart). Interviews are also being conducted for this research.

The research findings will provide important insights for the incubator industry and for incubator managers in guiding the provision of support services that facilitate both tenants' business growth as well as their positive psychological development. Further information about this research is attached, in the plain language information statement (PLIS), and at the homepage for the survey: www.cerdi.edu.au/surveys/phd_study

If you are able to assist with sharing information to tenants about this research, could you please either:

> (a) forward the letter of invitation, together with the PLIS, attached, to tenants at your facility, and/or,

> (b) provide me with the contact details (first name; email addresses) of tenants at your incubator. If the contact details of tenants within your facility is not publicly available, could you please confirm that the tenants at the incubator have given their permission to be contacted.

Please note that this project has received approval from the Federation University Australia's Human Research Ethics Committee (project number: A17-110).

I hope that you will be able to assist with contacting tenants about this research. If you require any further information about this study, please contact the student researcher or any of the other researchers, listed below.

Yours sincerely,

Alison Ollerenshaw

Alison Ollerenshaw   Dr Angela Murphy
PhD student   Principal Researcher
Federation University Australia   Federation University Australia
E: a.ollerenshaw@federation.edu.au   E: aa.murphy@federation.edu.au
T: +61 3 53276201   T: +61 3 5327 6198

Appendix C

<Inserted date>

To the Incubator Manager/Director, <Insert Name of Incubator>

My name is Alison Ollerenshaw and I am contacting you about my PhD research as a follow up to a previous email sent late last year. My research is exploring the relationship between business incubator services (such as networking; mediation and training) and the wellbeing of tenants. I am conducting this research together with Dr Angela Murphy, Prof Suzanne McLaren and A/Prof Helen Thompson at Federation University Australia.

As the manager/director of a business incubator, or similar organisation, I am seeking your assistance to forward information about my research to tenants at your incubator.

This research involves participation of tenants from business incubators worldwide. Tenants who agree to participate in this research are invited to complete a brief, online survey (15 minutes duration). An optional interview is also being offered to interested tenants.

The research findings will provide important insights for the incubator industry and for incubator managers in guiding the provision of support services that facilitate both tenants' business growth as well as their positive psychological development and wellbeing.

Further information about the research is included in the plain language information statement (PLIS), and at the homepage for the survey: **www.cerdi.edu.au/surveys/phd_study1**

A YouTube video briefly outlining the research and inviting tenants to participate is also available: **https://www.youtube.com/watch?v=nOpyQidO5Qo**

If you are able to assist, could you please forward the attached letter of invitation and the PLIS to tenants at you facility?

Please note that this project has received approval from the Federation University Australia's Human Research Ethics Committee (project number: A17-110).

I hope that you will be able to assist me to connect tenants with my research. If you require any further information about this research, please contact me, or any of the other researchers listed below.

Yours sincerely,
Alison

Alison Ollerenshaw	Dr Angela Murphy
PhD student	Principal Researcher
Federation University Australia	Federation University Australia
E: a.ollerenshaw@federation.edu.au	E: aa.murphy@federation.edu.au
T: +61 3 53276201	T: +61 3 5327 6198
Associate Prof Helen Thompson	Prof Suzanne McLaren
Associate Researcher	Associate Researcher
Federation University Australia	Federation University Australia
E: h.thompson@federation.edu.au	E: s.mclaren@federation.edu.au

Appendix D

<Insert date>

Dear incubator tenant,

I am contacting you about research that I am undertaking as a PhD student, together with Dr Angela Murphy, Prof Suzanne McLaren and A/Prof Helen Thompson, from Federation University Australia. The research is exploring the relationship between business incubator services and the psychological capital of tenants.

This research involves participation from you, a tenant at an incubator, or similar facility. Tenants who agree to participate in this research will be invited to complete an online survey that takes approximately 15 minutes to compete, at two time points (four to six months apart). Interviews are also being conducted for this research which will take about an hour to complete.

The research findings will provide important insights for the incubator industry and for incubator managers in guiding the provision of support services that facilitate both tenants' business growth as well as their positive psychological development. This research is being conducted with tenants at incubators, worldwide.

If you are interested in participating in this study please refer to the attached plain language information statement (PLIS) which outlines the extent of participation in this research.

Alternatively you may wish to visit the webpage where the survey is located and where further information is supplied about this research: **www.cerdi.edu.au/surveys/phd_study**

This project has received approval from the Federation University Australia's Human Research Ethics Committee (project number: A17-110).

Please note that participation in the research is voluntary and data is treated confidentially. Information about your participation (or non-participation) in this research is not shared with the manager or staff at the incubator where you are located.

If you require any further information about this study, please contact the student researcher, or one of the other researchers, listed below.

Yours sincerely,
Alison Ollerenshaw

Alison Ollerenshaw   Dr Angela Murphy
PhD student   Principal Researcher
Federation University Australia   Federation University Australia
E: a.ollerenshaw@federation.edu.au   E: aa.murphy@federation.edu.au
T: +61 3 53276201   T: +61 3 5327 6198

Associate Prof Helen Thompson   Prof Suzanne McLaren
Associate Researcher   Associate Researcher
Federation University Australia   Federation University Australia
E: h.thompson@federation.edu.au   E: s.mclaren@federation.edu.au

BALLARAT   PO Box 663   Ballarat VIC 3353 Australia
BERWICK   PO Box 859   Berwick VIC 3806 Australia
GIPPSLAND   PO Box 3191   Gippsland Mail Centre VIC 3841 Australia
WIMMERA   PO Box 300   Horsham VIC 3402 Australia

EMAIL   info@federation.edu.au
CALL   1800 FED UNI
WEB   federation.edu.au
ABN 51 818 692 256 | CRICOS PROVIDER No. 00103D | RTO CODE 4909

Appendix E

<Insert date>

Dear incubator tenant,

I am contacting you about research that I am undertaking as a PhD student, together with Dr Angela Murphy, Prof Suzanne McLaren and A/Prof Helen Thompson, from Federation University Australia. The research is exploring the relationship between business incubator services and the psychological capital of tenants.

This research involves participation from you, a tenant at an incubator, or similar facility. Tenants who agree to participate in this research will be invited to complete an online survey that takes approximately 15 minutes to compete.

Interviews are also being conducted for this research which you may also wish to participate in. Interviews take about an hour to complete.

The research findings will provide important insights for the incubator industry in guiding the provision of support services that facilitate both tenants' business growth as well as their positive psychological development. This research is being conducted with tenants at incubators, worldwide.

If you are interested in participating in this study please refer to the attached plain language information statement (PLIS) which outlines the extent of participation in this research.

Alternatively you may wish to visit the webpage where the survey is located and where further information is supplied about this research: **www.cerdi.edu.au/surveys/phd_study**

A YouTube video briefly outlining the research and inviting tenants to participate is also available at: **https://www.youtube.com/watch?v=nOpyQidO5Qo**

This project has received approval from the Federation University Australia's Human Research Ethics Committee (project number: A17-110).

Please note that participation in the research is voluntary and data is treated confidentially. Information about your participation (or non-participation) in this research is not shared with the manager or staff at the incubator where you are located.

If you require any further information about this study, please contact the student researcher, or one of the other researchers, listed below.

Yours sincerely,
Alison Ollerenshaw

Alison Ollerenshaw   Dr Angela Murphy
PhD student   Principal Researcher
Federation University Australia   Federation University Australia
E: a.ollerenshaw@federation.edu.au   E: aa.murphy@federation.edu.au
T: +61 3 53276201   T: +61 3 5327 6198

Associate Prof Helen Thompson   Prof Suzanne McLaren
Associate Researcher   Associate Researcher
Federation University Australia   Federation University Australia
E: h.thompson@federation.edu.au   E: s.mclaren@federation.edu.au

BALLARAT   PO Box 663   Ballarat VIC 3353 Australia
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GIPPSLAND   PO Box 3191   Gippsland Mail Centre VIC 3841 Australia
WIMMERA   PO Box 300   Horsham VIC 3402 Australia

EMAIL info@federation.edu.au
CALL   1800 FED UNI
WEB   federation.edu.au
ABN 51 818 692 256 | CRICOS PROVIDER No. 00103D | RTO CODE 4909

Appendix F

Plain Language Information Statement

Federation
UNIVERSITY·AUSTRALIA

School of Health Sciences and Psychology, Faculty of Health and the
Centre for eResearch and Digital Innovation (CeRDI)

Plain Language Information Statement: Incubator tenants

PROJECT TITLE	The relationship between business incubator services and the psychological capital of tenants.
PRINCIPAL RESEARCHER	Dr Angela Murphy
STUDENT RESEARCHER	Alison Ollerenshaw
ASSOCIATE RESEARCHERS	Prof Suzanne McLaren; Assoc Prof Helen Thompson

Thank you for your interest in this research being conducted by PhD student Alison Ollerenshaw, under the supervision of Dr Angela Murphy, Prof Suzanne McLaren, and Assoc Prof Helen Thompson from Federation University Australia. We are conducting research examining the services offered at business incubators, such as networking, mediation and training, and their relationship to the positive psychological development of tenants within incubators. This research is partially supported by funds from the City of Melton and the Western Business Accelerator and Centre for Excellence.

As a 'tenant' in a business incubator (or similar facility) we wish to invite you to participate in this research. Participation involves completing an online survey which takes approximately 15 minutes to complete. (Interviews are also being conducted for this research and participation is completely voluntary). The survey questions ask about you and your business, and about the type and location of your incubator, and the range of services offered. It also asks questions about the importance of these services to you and your business. Positive psychological development will then be measured through a series of statements that require you to rate your perceived attributes to hope, efficacy, resilience and optimism that comprise psychological capital.

Should you agree to complete the survey, click on the link provided in the email. Upon completing the survey you will then be invited to participate in an interview. If you agree to participate in an interview, you will be asked to supply a name and email address to enable the researchers to contact you about the interview. Your responses will remain anonymous and your email address will be removed from your survey responses, and participant codes will be used to match data between the survey and/or interview responses to ensure confidentiality. All data collected through the survey will be aggregated and survey data will be non-identifiable.

Interviews for this research will be conducted via telephone or by using internet and mobile devices using applications such as Skype and Whatsapp. The student researcher will conduct all interviews and will ask questions to assist in understanding the range of services available to tenants at incubators and the uptake of these services in relation to the tenancy experience. The questions will examine the availability and contribution of the supports offered to tenants and how they may assist in supporting psychological capital. Should you agree to participate in an interview for this research, the schedule of questions will be provided to you in advance. Interviews will take approximately one hour.

During the interview, hand-written or typed notes will be made by the researcher and the interview will be audio recorded. All information collected, including notes/audio recordings, will be treated confidentially and will only be used to identify the main themes of the interview; they will not be used to identify individuals. The named researchers are the only people who will have access to these notes/recordings. The researchers may use participants' quotes and comments from the surveys and interviews to support their research findings. These may be presented in reports and publications that are publicly accessible. All participant comments used for such purposes will have all potential identifiers removed to ensure participant anonymity and confidentiality.

Survey and interview data will not include any information that can be used to identify individual participants. Although the number of interviews is small ($n = 50$) your comments will not affect your privacy/anonymity. This is because all information provided by you will be de-identified prior to analysis and, furthermore, interviews will be conducted with tenants at incubators around the world providing an additional layer of anonymity to data findings.

The information you share will be used for this PhD research with data used for the preparation of the thesis, and research papers for publication, conference papers and presentations, and industry-based stories for general publication. The research findings will provide important insights for the incubator industry and for incubator management in guiding the provision of support services that facilitate both tenants' business growth as well as psychological development.

All named researchers for this study have extensive experience in conducting research and abiding by the ethical principles in conducting this research. This project has received approval from the Federation University Australia's Human Research Ethics Committee (project number: A17-110).

All research data for this study will be retained, securely, for a minimum of five years. Thereafter it be destroyed in accordance with the Institutional requirements for data security.

Although this research comprises two studies, you may choose to participate in none, one or both studies.

Your participation in this research is voluntary and you are free at any time up until and while completing the survey and interview to withdraw your participation, without explanation. There are no consequences for withdrawing from this research. However, if you wish to withdraw from this study after information has been aggregated - it is then unable to be individually identified - so from this point it is not possible to withdraw your information/data. You may also choose not to respond to all questions in the interview/survey, just answer the questions you are comfortable with.

Please note that participation in this research is in no way associated with the incubator nor will feedback be provided to the manager about participation or non-participation in the study.

If you choose to participate in this research, your consent is assumed through the completion and submission of the survey and in the provision of your first name and email contact in relation to participation in study 2. For participation in the interview, please review the consent form provided and either (a) sign the form and return it to the student researcher prior to commencement of the interview, or (b) provide verbal consent to the researcher prior to commencing the interview. Your verbal consent will be recorded and documented by the researcher.

It is unlikely that you will experience any distress when completing the survey or by participating in the interview. However, in the unlikely event that you are concerned about what has been asked we advise that you follow the protocols for accessing professional support through your incubator, or contact a medical health practitioner. For incubator tenants located in Australia you may wish to access the Beyond Blue information line (1300 224 636), Lifeline (131 114) or the Mental Health Advice Line (Ph. 1300 280 737) for expert advice, support and information to deal with personal challenges and stress.

For further details about this research, please contact Dr Angela Murphy aa.murphy@federation.edu.au (T: +61 3 5327 6198) or Alison Ollerenshaw: a.ollerenshaw@federation.edu.au (T: + 61 3 5327 6201).

Further details about this research are also available by contacting Prof Suzanne McLaren: s.mclaren@federation.edu.au or Assoc Prof Helen Thompson: h.thompson@federation.edu.au

A YouTube video briefly outlining the research and inviting tenants to participate is available at: **https://www.youtube.com/watch?v=nOpyQidO5Qo**

If you have any questions, or you would like further information regarding the project titled The relationship between business incubator services and the psychological capital of tenants, please contact the Principal Researcher (**Dr Angela Murphy, Principal Researcher**) at the Centre for eResearch and Digital Innovation **EMAIL:** aa.murphy@federation.edu.au **PH:** +61 3 5327 6198

Should you (i.e. the participant) have any concerns about the ethical conduct of this research project, please contact the Federation University Ethics Officers, Research Services, Federation University Australia, P O Box 663 Mt Helen Vic 3353 or Northways Rd, Churchill Vic 3842. Telephone: (03) 5327 9765, (03) 5122 6446 Email: research.ethics@federation.edu.au CRICOS Provider Number 00103D

Appendix G

Tenant survey

Demographics:

The following questions are about you and your business. Please respond to the questions using the drop down menus and comment boxes provided. If there is a question you are unable to respond to, leave that question blank and move onto the next question.

What is your age?

What is your gender? Options: Male; Female; Transgender; Prefer not to say; Other

What is your highest level of education? Options: Secondary/High school; Tertiary education –

undergraduate; Tertiary education – postgraduate; Other:

How long has your business been operating for? Options: Months/years

How long have you/your business been working within an incubator? Options: Months/years

Which of the following best describes the industry your business operates in? Options:

- ◯ Retail trade
- ◯ Wholesale trade
- ◯ Communication services
- ◯ Property and business services
- ◯ Finance and insurance
- ◯ Health and community services
- ◯ Education
- ◯ Cultural and recreational services
- ◯ Transport and storage
- ◯ Personal and other services
- ◯ Accommodation, cafes and restaurants
- ◯ Agriculture, forestry, fishing and hunting
- ◯ Mining
- ◯ Manufacturing
- ◯ Electricity, gas and water supply
- ◯ Construction
- ◯ Other

Do you have any employees in your business? Options: Yes; No
If, Yes: How many employees do you have?

The following questions are about your incubator. Please respond to the following questions using the drop down menus and comment boxes provided. If there is a question you are unable to respond to, leave that question blank and move onto the next question.

In which country is your incubator located?

In which area is your incubator located? Options: Urban; Regional; Other

In which year was the incubator your business is located in, founded? Options:

I don't know; Year:

How would you describe the industry focus of the incubator your business is located in? Options:

○ Mixed use
○ Consulting and business related services
○ Technology, web related
○ Media
○ Research and development
○ Services and retail
○ Manufacturing
○ Health and community services
○ Creative industries
○ Other

Which funding model best describes the incubator your business is located in: Options:

○ Public, not-for-profit
○ Profit-based entity
○ University-affiliated entity
○ I don't know
○ Other

Which of the following best describes the priorities of the incubator your business is located in: Options (Please choose **all** that apply):

☐ Jobs creation
☐ Enhancing the community's entrepreneurial climate
☐ Retaining business in local community
☐ Building/accelerating growth in local industry
☐ Diversifying the local economy
☐ Identifying local spin-off/spin-out opportunities
☐ Commercialising technologies
☐ Supporting other entrepreneurs and the community
☐ Generating benefits for the sponsoring organisation
☐ Revitalising distressed neighbourhood
☐ Moving people from welfare to work
☐ I don't know
☐ Other:

About the incubator services:

The following questions are about the space, physical resources and infrastructure available at your incubator

Thinking about space, physical resources and infrastructure, please indicate whether the following services and features are available <u>at your incubator</u>, and how important were these are to you/your business.

1. Do you have access to workspace and amenities (e.g. desk; office space; meeting rooms; warehouse/design space) at your incubator? Options: Yes / No / Don't know:

> **If YES to Q1: Have you used the workspace and amenities (e.g. desk; office space; meeting rooms; warehouse/design space) at your incubator in the past 6 months? Options: Yes / No:**
>
> > **If YES:** Please estimate how frequently you use the workspace and amenities (e.g. desk; office space; meeting rooms; warehouse/design space) at your incubator. Options: daily; weekly; fortnightly; monthly; less frequently than monthly

Please rate the importance of having workspace and amenities (e.g. desk; office space; meeting rooms; warehouse/design space) at your incubator, to you/your business. Options (10 point rating scale): 1 = no importance; 5 = moderate importance; 10 = high importance

If NO: Please rate the importance of having workspace and amenities (e.g. desk; office space; meeting rooms; warehouse/design space) at your incubator, to you/your business. Options (10 point rating scale): 1 = no importance; 5 = moderate importance; 10 = high importance

If NO or DON'T KNOW to Q1: If workspace and amenities (e.g. desk; office space; meeting rooms; warehouse/design space) were available at your incubator, how important do you think this would be to you/your business? Options (10 point rating scale): 1 = no importance; 5 = moderate importance; 10 = high importance

2. Do you have access to administrative support at your incubator? Options: Yes/ No / Don't know:

If YES to Q2: Have you used the administrative support at your incubator in the past 6 months? Options: Yes / No:

If YES: Please estimate how frequently you use the administrative support at your incubator. Options: daily; weekly; fortnightly; monthly; less frequently than monthly

Please rate the importance of having administrative support at your incubator, to you/your business. Options (10 point rating scale): 1 = no importance; 5 = moderate importance; 10 = high importance

If NO: Please rate the importance of having administrative support at your incubator, to you/your business. Options (10 point rating scale): 1 = no importance; 5 = moderate importance; 10 = high importance

If NO or DON'T KNOW to Q2: If administrative support was available at your incubator, how important do you think this would be to you/your business? Options (10 point rating scale):
  1 = no importance; 5 = moderate importance; 10 = high importance

3. Do you have access to technology (e.g. internet and current technology infrastructure) at your incubator? Options: Yes / No / Don't know:

If YES to Q3: Have you used the technology (e.g. internet and current technology infrastructure) at your incubator in the past 6 months? Options: Yes / No:

If YES: Please estimate how frequently you use the technology (e.g. internet and current technology infrastructure) at your incubator.
Options: daily; weekly; fortnightly; monthly; less frequently than monthly

Please rate the importance of having technology (e.g. internet and current technology infrastructure) at your incubator, to you/your business. Options (10 point rating scale):
1 = no importance; 5 = moderate importance; 10 = high importance

If NO: Please rate the importance of having technology (e.g. internet and current technology infrastructure) at your incubator, to you/your business. Options (10 point rating scale): 1 = no importance; 5 = moderate importance; 10 = high importance

If NO or DON'T KNOW to Q3: If technology (e.g. internet and current technology infrastructure) was available at your incubator, how important do you think this would be to you/your business? Options (10 point rating scale): 1 = no importance; 5 = moderate importance; 10 = high importance

4. Do you have access to a low cost rental/leasing agreement at your incubator? Options: Yes/ No / Don't know:

If YES: Please rate the importance of having low cost rental/leasing agreement at your incubator, to you/your business. Options (10 point rating scale): 1 = no importance; 5 = moderate importance; 10 = high importance

If NO or DON'T KNOW to Q4: If a low cost rental/leasing agreement were available at your incubator, how important do you think this would be to you/your business? Options (10 point rating scale): 1 = no importance; 5 = moderate importance; 10 = high importance

5. Is the location of your incubator convenient to home, public transport, shops, schools? Options: Yes / No / Don't know:

If YES to Q5: Please rate the importance of having your incubator conveniently located to home, public transport, shops, schools, to you/your business. Options (10 point rating scale): 1 = no importance; 5 = moderate importance; 10 = high importance

If NO or DON'T KNOW to Q5: If the location of your incubator was convenient to home, public transport, shops, schools, how important do you think this would be to you/your business? Options (10 point rating scale): 1 = no importance; 5 = moderate importance; 10 = high importance

6. Do you have access to other infrastructure and services (e.g. car parking, child care, cafe) at your incubator? Options: Yes / No / Don't know:
If YES to Q6: Have you used the other infrastructure and services (e.g. car parking, childcare, cafe) at your incubator, in the past 6 months? Options: Yes / No:

If YES: Please estimate how frequently you use the other infrastructure and services (e.g. car parking, childcare, cafe) at your incubator.
Options: daily; weekly; fortnightly; monthly; less frequently than monthly

Please rate the importance of having other infrastructure and services (e.g. car parking, childcare, cafe) at your incubator, to you/your business. Options (10 point rating scale): 1 = no importance; 5 = moderate importance; 10 = high importance

If NO: Please rate the importance of having other infrastructure and services (e.g. car parking, childcare, cafe) at your incubator, to you/your business. Options (10 point rating scale): 1 = no importance; 5 = moderate importance; 10 = high importance

If NO or DON'T KNOW to Q6: If other infrastructure and services (e.g. car parking, childcare, cafe) were available at your incubator, how important do you think this would be to

you/your business? Options (10 point rating scale): 1 = no importance; 5 = moderate importance; 10 = high importance

The following questions are about the business support services available at your incubator.

Thinking about business support services, please indicate whether the following services or activities are available <u>at your incubator</u>, and how important were they to you/your business?

1. Do you have access to business mentoring and coaching at your incubator? Options: Yes / No / Don't know:

> **If YES to Q1: Have you used the business mentoring and coaching at your incubator in the past 6 months? Options: Yes / No:**
>
> > **If YES:** Please estimate how frequently you use the business mentoring and coaching at your incubator. Options: daily; weekly; fortnightly; monthly; less frequently than monthly
> >
> > Please rate the importance of having the business mentoring and coaching at your incubator, to you/your business. Options (10 point rating scale):
> > 1 = no importance; 5 = moderate importance; 10 = high importance
> >
> > **If NO:** Please rate the importance of having the business mentoring and coaching at your incubator, to you/your business. Options (10 point rating scale):
> > 1 = no importance; 5 = moderate importance; 10 = high importance
>
> **If NO or DON'T KNOW to Q1**: If the business mentoring and coaching was available at your incubator, how important do you think this would be to you/your business? Options (10 point rating scale): 1 = no importance; 5 = moderate importance; 10 = high importance

2. Do you have access to business development, training and education at your incubator? Options: Yes / No / Don't know:

> **If YES to Q2: Have you accessed the business development, training and education at your incubator in the past 6 months? Options: Yes / No:**
>
> > **If YES:** Please estimate how frequently you access business development, training and education at your incubator. Options: daily; weekly; fortnightly; monthly; less frequently than monthly
> >
> > Please rate the importance of business development, training and education at your incubator, to you/your business. Options (10 point rating scale): 1 = no importance; 5 = moderate importance; 10 = high importance
> >
> > **If NO:** Please rate the importance of having business development, training and education at your incubator, to you/your business. Options (10 point rating scale):
> > 1 = no importance; 5 = moderate importance; 10 = high importance
>
> **If NO or DON'T KNOW to Q2**: If business development, training and education was available at your incubator, how important do you think this would be to you/your business? Options (10 point rating scale): 1 = no importance; 5 = moderate importance; 10 = high importance

3. Do you have access to specialised business supports and services (e.g. professional business advice; marketing; financial management; funding advice; legal advice; ecommerce) at your incubator? Options: Yes / No / Don't know:

> **If YES to Q3: Have you accessed specialised business supports and services (e.g. professional business advice; marketing; financial management; funding advice; legal advice; ecommerce) at your incubator in the past 6 months? Options: Yes / No:**
>
> > **If YES:** Please estimate how frequently you use the specialised business supports and services (e.g. professional business advice; marketing; financial management; funding advice; legal advice; ecommerce) at your incubator. Options: daily; weekly; fortnightly; monthly; less frequently than monthly
> > Please rate the importance of having specialised business supports and services (e.g. professional business advice; marketing; financial management; funding advice; legal advice; ecommerce) at your incubator, to you/your business. Options (10 point rating scale): 1 = no importance; 5 = moderate importance; 10 = high importance
> >
> > **If NO:** Please rate the importance of having specialised business supports and services (e.g. professional business advice; marketing; financial management; funding advice; legal advice; ecommerce) at your incubator, to you/your business. Options (10 point rating scale): 1 = no importance; 5 = moderate importance; 10 = high importance
>
> **If NO or DON'T KNOW to Q3**: If specialised business supports and services (e.g. professional business advice; marketing; financial management; funding advice; legal advice; ecommerce) were available at your incubator, how important do you think this would be to you/your business? Options (10 point rating scale): 1 = no importance; 5 = moderate importance; 10 = high importance

The following questions are about networking opportunities available at your incubator.

Thinking about networking, please indicate whether the following services or activities are available <u>at your incubator</u>, and how important were they are to you/your business?

1. Are there opportunities, available at your incubator, to network with incubator staff and tenants for business-related knowledge exchange and support? Options: Yes / No / Don't know:

> **If YES to Q1: Have you taken the opportunity to network with incubator staff and tenants for business-related knowledge exchange and support, at your incubator in the past 6 months? Options: Yes / No:**
>
> > **If YES:** Please estimate how frequently you use network with incubator staff and tenants for business-related knowledge exchange and support**,** at your incubator. Options: daily; weekly; fortnightly; monthly; less frequently than monthly
> >
> > Please rate the importance of networking with incubator staff and tenants for business-related knowledge exchange and support at your incubator, to you/your business. Options (10 point rating scale): 1 = no importance; 5 = moderate importance; 10 = high importance
> >
> > **If NO:** Please rate the importance of networking with incubator staff and tenants for business-related knowledge exchange and support at your incubator, to you/your

business. Options (10 point rating scale): 1 = no importance; 5 = moderate importance; 10 = high importance

If NO or DON'T KNOW to Q1: If opportunities were available at your incubator to network with incubator staff and tenants for business-related knowledge exchange and support, how important do you think this would be to you/your business? Options (10 point rating scale): 1 = no importance; 5 = moderate importance; 10 = high importance

2. Are there opportunities, available at your incubator, to network with other incubator tenants for social support? Options: Yes / No / Don't know:

If YES to Q2: Have you taken the opportunity to network with other incubator tenants for social support, in the past 6 months? Options: Yes / No:

If YES: Please estimate how frequently network with other incubator tenants for social support. Options: daily; weekly; fortnightly; monthly; less frequently than monthly

Please rate the importance of networking with other incubator tenants for social support. Options (10 point rating scale): 1 = no importance; 5 = moderate importance; 10 = high importance

If NO: Please rate the importance of networking with other incubator tenants for social support. Options (10 point rating scale): 1 = no importance; 5 = moderate importance; 10 = high importance

If NO or DON'T KNOW to Q2: If opportunities were available at your incubator to network with other tenants for social support, how important do you think this would be to you/your business? Options (10 point rating scale): 1 = no importance; 5 = moderate importance; 10 = high importance

3. Are there opportunities, available at your incubator, to network with members of the wider business community, including business and industry funding bodies, potential business partners and/or customers? Options: Yes / No / Don't know:

If YES to Q3: Have you taken the opportunity, available at your incubator, to network with members of the wider business community, including business and industry funding bodies, potential business partners and/or customers, in the past 6 months? Options: Yes / No:

If YES: Please estimate how frequently you network with members of the wider business community, including business and industry funding bodies, potential business partners and/or customers? Options: daily; weekly; fortnightly; monthly; less frequently than monthly

Please rate the importance of networking with members of the wider business community, including business and industry funding bodies, potential business partners and/or customers, to you/your business. Options (10 point rating scale): 1 = no importance; 5 = moderate importance; 10 = high importance

If NO: Please rate the importance of networking with members of the wider business community, including business and industry funding bodies, potential business

partners and/or customers, to you/your business. Options (10 point rating scale): 1 = no importance; 5 = moderate importance; 10 = high importance

If NO or DON'T KNOW to Q3: If opportunities were available at your incubator to network with members of the wider business community, including business and industry funding bodies, potential business partners and/or customers, how important do you think this would be to you/your business? Options (10 point rating scale): 1 = no importance; 5 = moderate importance; 10 = high importance

The following questions are about the selection and operation of your business at your incubator.

Thinking about the process for entering and operating your business at your incubator, which of the following features were required and/or offered and how important were these to you/your business?

1. Did your application to join the incubator involve the submission of your curriculum vitae and/or participation in a selection interview? Options: Yes / No / Don't know:

> **If YES to Q1: Did your application to join the incubator, and the submission of your curriculum vitae and/or participation in a selection interview, occur in the past 6 months? Options: Yes / No:**
>
> > **If YES:** Please rate the importance of submitting your curriculum vitae and/or participation in a selection interview, to you/your business. Options (10 point rating scale): 1 = no importance; 5 = moderate importance; 10 = high importance
> >
> > **If NO:** Please rate the importance of submitting your curriculum vitae and/or participation in a selection interview, to you/your business. Options (10 point rating scale): 1 = no importance; 5 = moderate importance; 10 = high importance
>
> **If NO or DON'T KNOW to Q1**: If your application to join your incubator had involved the submission of your curriculum vitae and/or participation in a selection interview, how important do you think this would be to you/your business? Options (10 point rating scale): 1 = no importance; 5 = moderate importance; 10 = high importance

2. Did your application to join the incubator involve the preparation/submission of a business plan? Options: Yes / No / Don't know:

> **If YES to Q2: Did your application to join the incubator and prepare/submit a business plan, occur in the past 6 months? Options: Yes / No:**
> > **If YES:** Please rate the importance of having preparing/submitting a business plan to your incubator, to you/your business. Options (10 point rating scale): 1 = no importance; 5 = moderate importance; 10 = high importance
> >
> > **If NO:** Please rate the importance of having preparing/submitting a business plan to your incubator, to you/your business. Options (10 point rating scale): 1 = no importance; 5 = moderate importance; 10 = high importance
>
> **If NO or DON'T KNOW to Q2** If your application to join your incubator had involved the preparation/submission of a business plan, how important do you think this would be to you/your business?? Options (10 point rating scale): 1 = no importance; 5 = moderate importance; 10 = high importance

3. Have you received information from the incubator about the duration of time you, as a tenant, can remain at the incubator? Options: Yes / No / Don't know:

> **If YES to Q3: How long can you remain in your incubator for?**
>
> > **Was information provided to you in the last six months about the duration of time you, as a tenant, can remain at the incubator? Options: Yes / No:**
> >
> > **If yes or no:** Please rate the importance of having information about the duration of time you can remain at your incubator, to you/your business. Options (10 point rating scale): 1 = no importance; 5 = moderate importance; 10 = high importance
>
> **If NO or DON'T KNOW to Q3**: If information had been provided about the duration of time you can remain at the incubator, how important do you think this would be to you/your business? Options (10 point rating scale): 1 = no importance; 5 = moderate importance; 10 = high importance

4. Do staff at your incubator conduct regular reviews with you about your business progress? Options: Yes / No / Don't know:

> **If YES to Q4: Have you participated in a review with incubator staff about your business progress in the last 6 months? Options: Yes / No:**
> > **If YES or NO:** Please rate the importance that regular reviews with incubator staff about your business progress has to you/your business. Options (10 point rating scale): 1 = no importance; 5 = moderate importance; 10 = high importance
>
> **If NO or DON'T KNOW to Q4**: If incubator staff provided regular reviews with you about your business progress, how important do you think this would be to you/your business? Options (10 point rating scale): 1 = no importance; 5 = moderate importance; 10 = high importance

Psychological Capital Questionnaire <inserted in tenant survey>

Mind Garden permits only a sample of three questions from the Psychological Capital Questionnaire to be reproduced in any publication, including theses. A selection of questions from the Psychological Capital Questionnaire include:

4. I feel confident to set targets/goals in my business.

5. Right now I see myself as being pretty successful at my business.

6. I always look on the bright side of things regarding my business.

The researchers will be continuing to collect data for this study through interviews. Would you be willing to participate in an interview with the researcher about your experiences? Options: Yes/No

If Yes: To enable the researchers to contact you organise an interview, please provide your first name and email address below.

Name:

Email address:

Appendix H

<u>Interview Schedule (Incubator tenants)</u>

1. Tell me about the type of incubator you are located at?

2. When did you join your business incubator and why did you choose this option to grow your business?

3. Please outline the experiences (advantages and disadvantages) of operating your business from the incubator: for you? Your business?

4. In what ways has the incubator supported you to identify and achieve your business related goals?

5. Has being in an incubator influenced the way you respond to difficulties and challenges with your business? In what ways have you been supported to overcome these challenges?

6. In what ways has your involvement with the business incubator influenced your confidence in your own business development?

7. Has being located in a business incubator influenced the approach and directions towards your current (and future) business activities?

8. Has being in an incubator enabled you to succeed at your business goals and to remain focused on these goals, or establish new business goals?

9. Has locating your business within an incubator met your expectations?

10. Please describe the role of the business incubator manager/CEO and/or incubator staff in the delivery of services at the business incubator – and to you/your business?

11. Is there a role for incubators and incubator managers in supporting tenants' wellbeing as they develop their business? If so, what is this role?

12. Have you experienced such support, for your wellbeing, at your incubator? Please describe your experiences and the contribution this has had on you and your business? (Prompters: support from within the incubator and staff – and others? Who provided the support; when and how frequently; how did it support well-being and what was the contribution of this experience on you/your business?)

13. In what ways do you/your business incubator connect with the wider community? How has this influenced or informed your business?

14. Please list your 3 most influential aspects (positive and negative) of being in the business incubator and why?

Appendix I

Consent Form
Human Research Ethics Committee

Federation
UNIVERSITY·AUSTRALIA

PROJECT TITLE:	The relationship between business incubator services and the psychological capital of tenants.
RESEARCHERS:	Dr Angela Murphy (Principal researcher) Alison Ollerenshaw (PhD student) Prof Suzanne McLaren (Associate researcher) Assoc Prof Helen Thompson (Associate researcher)

Code number allocated to the participant:	

<u>Consent – Please complete the following information:</u>

I _____ of _____

hereby consent to participate as a subject in the above research study.

The research program in which I am being asked to participate has been explained fully to me, verbally and in writing, and any matters on which I have sought information have been answered to my satisfaction.

I understand that: all information I provide (including questionnaires) will be treated with the strictest confidence and data will be stored separately from any listing that includes my name and address.

- All information I provide will be treated with the strictest confidence and data will be stored separately from any listing that includes my name and email address.
- An audio recording and hand written notes of the interview will be made and used only by the named researchers.
- Aggregated results will be used for research purposes and may be reported in scientific and academic journals.
- The number of interviews being conducted is small (n = 50 or less) however my comments will not affect my privacy/anonymity. This is because all information I provide will be de-identified by the researchers prior to analysis and, furthermore, interviews will be conducted at incubators around the world providing an additional layer of anonymity to the data collected.
- The researchers may use participants' interview quotes and comments to support their research findings. These may be presented in reports and publications that are publicly accessible.
- I am free to withdraw my consent at any time during the study in which event my participation in the research study will immediately cease and information/data obtained from it will not be used. I understand the exception to this is if I withdraw after information has been aggregated - it is unable to be individually identified - so from this point it is not possible to withdraw my information/data, although I may still withdraw my consent to participate.

SIGNATURE:_____   **DATE:** _____

Appendix J

Approval with Comment

Human Research Ethics Committee

Principal Researcher:	Angela Murphy
Other/Student Researcher/s:	Alison Ollerenshaw Suzanne McLaren Helen Thompson
School/Section:	**CeRDI**
Project Number:	**A17-110**
Project Title:	**The relationship between business incubator services and the Psychological Capital of Tenants**
For the period:	26/07/2017 **to** 31/03/2019

Approval has been granted to undertake this project in accordance with the proposal submitted for the period listed above, with Comment. *Quote the Project No: A17-110 in all correspondence regarding this application.*

Please note: It is the responsibility of the Principal Researcher to ensure the Ethics Office is contacted immediately regarding any proposed change or any serious or unexpected adverse effect on participants during the life of this project.

In Addition: Maintaining Ethics Approval is contingent upon adherence to all Standard Conditions of Approval as listed on the final page of this notification – and comment from the Committee.

COMMENT: Submit Business Incubator Approvals when available and prior to commencement of recruitment of tenants.

COMPLIANCE REPORTING DATES TO HREC:
Annual project report:
26/07/2018
Final project report:
30/04/2019

The combined annual/final report template is available at:
http://federation.edu.au/research-and-innovation/research-support/ethics/human-ethics/human-ethics3

Irene Hall
Ethics Officer
26 July 2017
Please note the standard conditions of approval on Page 2:

Office Use Only							
RM		Sig Dates		Shared Drv:		Matrix		Notes:

STANDARD CONDITIONS OF APPROVAL

1. Conduct the project strictly in accordance with the proposal submitted and granted ethics approval, including any amendments made to the proposal required by the HREC.

2. Advise (email: research.ethics@federation.edu.au) immediately of any complaints or other issues in relation to the project which may warrant review of the ethical approval of the project.

3. Where approval has been given subject to the submission of copies of documents such as letters of support or approvals from third parties, these are to be provided to the Ethics Office prior to research commencing at each relevant location.

4. Submission for approval of amendments to the approved project before implementing such changes. A combined amendment template covering the following is available on the HRE website: http://federation.edu.au/research/research-support/ethics/human-ethics/human-ethics3
    - Request for Amendments
    - Request for Extension. Note: Extensions cannot be granted retrospectively.
    - Changes to Personnel

5. Annual Progress reports on the anniversary of the approval date and a Final report within a month of completion of the project are to be submitted by the due date each year for the project to have continuing approval.

6. If, for any reason, the project does not proceed or is discontinued, advise the committee by completing the Final report form.

7. Notify the Ethics Office of any changes in contact details including address, phone number and email address for any member of the research team.

8. The HREC may conduct random audits and / or require additional reports concerning the research project as part of the requirements for monitoring, as set out in the National statement on Ethical Conduct in Human Research.

Failure to comply with the *National Statement on Ethical Conduct in Human Research* (2007) and with the conditions of approval will result in suspension or withdrawal of approval.

Appendix K

Ethics amendments applications: date of approval; reason for amendment

Amendment Number	Amendment details	Approval date granted by ethics office	Reason for amendment
1	Minor modification to survey questions; Additional information added to plain language information statement (PLIS); Revised cover letter.	19 October 2017	Wording of survey altered to be more incubator domain-specific; Inclusion in PLIS of statement that de-identified quotes and comments provided from participants would be used to support the research findings; Cover letter revised to reflect amendments to survey and PLIS.
2	Longitudinal research component removed; proposed increase to the number of tenants to participate in the study; inclusion of new recruitment strategies and promotion to increase research participation. This included a YouTube video, becoming a member of Business Incubation and Innovation Australia, making telephone contact with incubators.	15 January 2018	When the amendment application was submitted recruitment of participants to the study was very low. A revised study design was development that also included a range of strategies to promote the study with the aim of recruiting more incubator tenants to participate in the research.
3	The addition of two additional questions were incorporated in the interview schedule for tenants.	5 March 2018	The additional questions were developed to broaden the understanding of the role of incubators in supporting tenants' wellbeing and psychological capital.
4	The design and implementation of a second study to examine the relationship between the characteristic services of business incubators on tenants, from the perspective of incubators managers.	21 May 2018	This second study was developed to capture insights from managers about their perceptions of the direct and indirect role of the supports and services offered to tenants at the incubator.
5	Approval for an external company to transcribe six interviews recordings.	18 September 2018	Sought approval for six interviews to be transcribed using a transcription service.
6	Extension to the date for data collection (to December 2019).	4 March 2019	To enable research data verification with participants, as required.

Appendix L

<Insert date>

To the CEO / Director / Manager, <u>Name of incubator</u>

Good morning,

My name is Alison Ollerenshaw and I am contacting you about my PhD research which is exploring the relationship between business incubator services (such as networking; mediation and training) and the wellbeing of tenants. I am conducting this research together with Dr Angela Murphy, Prof Suzanne McLaren and A/Prof Helen Thompson at Federation University Australia.

As the manager/director or staff member at a business incubator, or similar organisation, I wish to invite you to participate in this research. The research involves participation by both tenants, <u>and from you, as a manager or staff member at a business incubator</u>. Those who agree to participate in this research are invited to complete a brief, online survey that takes 5-10 minutes to complete. An optional interview is also being offered.

The research findings will provide important insights for the incubator industry in guiding the provision of support services that facilitate both tenants' business growth as well as their positive psychological development and wellbeing.

Further information about the research is included in the plain language information statement (PLIS), and in the attached letter of invitation.
 To access the survey, please visit the homepage for the survey:
http://www.cerdi.edu.au/phd_study_managers
Please note that this project has received approval from the Federation University Australia's Human Research Ethics Committee (project number: A17-110).

I hope that you will be able to assist me by participating in my research. If you require any further information about this research, please contact me, or any of the researchers listed below.

Yours sincerely,
Alison

Alison Ollerenshaw   Dr Angela Murphy
PhD researcher   Principal researcher
Federation University Australia   Federation University Australia
E: a.ollerenshaw@federation.edu.au   E: aa.murphy@federation.edu.au
T: +61 3 53276201   T: +61 3 5327 6198

Associate Prof Helen Thompson   Prof Suzanne McLaren
Associate researcher   Associate researcher
Federation University Australia   Federation University Australia
E: h.thompson@federation.edu.au   E: s.mclaren@federation.edu.au

Appendix M

<Insert date>

Dear incubator manager,

I am contacting you about research that I am undertaking as a PhD student, together with Dr Angela Murphy, Prof Suzanne McLaren and A/Prof Helen Thompson, from Federation University Australia. The research is exploring the relationship between business incubator services and the psychological capital of tenants.

This research involves participation from managers and tenants at incubators worldwide. Incubator managers who agree to participate in this research will be asked to complete a brief online survey that takes approximately 5-10 minutes to compete.

Interviews are also being conducted for this research which you may also wish to participate in. Interviews take about an hour to complete.

The research findings will provide important insights for the incubator industry in guiding the provision of support services that may facilitate both tenants' business growth as well as their positive psychological development.

If you are interested in participating in this study please refer to the attached plain language information statement (PLIS) which outlines the extent of participation in this research.

Alternatively you may wish to visit the homepage for the survey where further information is provided about this research: **http://www.cerdi.edu.au/phd_study_managers**

This project has received approval from the Federation University Australia's Human Research Ethics Committee (project number: A17-110).

Please note that participation in the research is voluntary and data is treated confidentially. Information about your participation (or non-participation) in this research is not shared with the incubator where you are located.

If you require any further information about this study, please contact the student researcher, or one of the other researchers listed below.

Yours sincerely,
Alison Ollerenshaw

Alison Ollerenshaw	Dr Angela Murphy
PhD researcher	Principal researcher
Federation University Australia	Federation University Australia
E: a.ollerenshaw@federation.edu.au	E: aa.murphy@federation.edu.au
T: +61 3 53276201	T: +61 3 5327 6198
Associate Prof Helen Thompson	Prof Suzanne McLaren
Associate researcher	Associate researcher
Federation University Australia	Federation University Australia
E: h.thompson@federation.edu.au	E: s.mclaren@federation.edu.au

BALLARAT   PO Box 663   Ballarat VIC 3353 Australia
BERWICK   PO Box 859   Berwick VIC 3806 Australia
GIPPSLAND PO Box 3191 Gippsland Mail Centre VIC 3841 Australia
WIMMERA   PO Box 300   Horsham VIC 3402 Australia

EMAIL info@federation.edu.au
CALL   1800 FED UNI
WEB   federation.edu.au
ABN 51 818 692 256 | CRICOS PROVIDER No. 00103D | RTO CODE 4909

Appendix N

Plain Language Information Statement

School of Health Sciences and Psychology, Faculty of Health and the

Centre for eResearch and Digital Innovation (CeRDI)

Plain Language Information Statement: Incubator managers and staff

PROJECT TITLE	The relationship between business incubator services and the psychological capital of tenants.
PRINCIPAL RESEARCHER	Dr Angela Murphy
STUDENT RESEARCHER	Alison Ollerenshaw
ASSOCIATE RESEARCHERS	Prof Suzanne McLaren; Assoc Prof Helen Thompson

Thank you for your interest in this research being conducted by PhD student Alison Ollerenshaw, under the supervision of Dr Angela Murphy, Prof Suzanne McLaren, and Assoc Prof Helen Thompson from Federation University Australia. We are conducting research examining the support services offered at business incubators, such as networking, mediation and training, and their relationship to the positive psychological development of tenants within incubators. Data for this research is being collected from both incubator tenants, and incubator managers/staff. This research is partially supported by funds from the City of Melton and the Western Business Accelerator and Centre for Excellence.

As a manager and/or staff member at a business incubator (or similar facility) we wish to invite you to participate in this research. Participation in this research involves a brief online survey that takes approximately 5-10 minutes to complete. Interviews are also being conducted for this research and participation is completely voluntary. This study is exploring the relationship between the characteristic services of business incubators and tenants' psychological wellbeing, from the perspective of incubator managers and staff.

The survey for incubator managers and staff asks questions ask about you and your incubator including the type and location of your incubator, the range of services offered and the time you interact with tenants. A further set of questions asks you to rate the importance of various support services usually offered at incubators.

Should you agree to complete the survey, please click on the link provided in the email. Upon completing the survey you will then be invited to participate in an interview. If you agree to participate in an interview, you will be asked to supply your name and email address to enable the student researcher to contact you and schedule the interview. Your responses will remain anonymous and your email address will be removed from your survey responses, and participant codes will be used to match data between the survey and/or interview responses to ensure confidentiality. All data collected through the survey will be aggregated and survey data will be non-identifiable.

Interviews for this research will be conducted via telephone or by using internet and mobile devices using applications such as Skype and Whatsapp. The student researcher will conduct all interviews and will ask questions to assist with understanding the range of services available to tenants at incubators and the uptake of these services, drawing upon your perspective. The questions will also examine the availability and contribution of the supports offered to tenants at incubators and how you perceive that these may assist in contributing to tenant wellbeing and their positive psychological capital. Should you agree to participate in an interview for this research, the schedule of questions will be provided to you in advance. Interviews take approximately one hour.

During the interview, hand-written or typed notes will be made by the researcher and the interview will be audio recorded. All information collected, including notes/audio recordings, will be treated confidentially and will only be used to identify the main themes of the interview; they will not be used to identify individuals. The named researchers are the only people who will have access to these notes/recordings. The researchers may use participants' quotes and comments from the surveys and interviews to support their research findings. These may be presented in reports and publications that are publicly accessible. All participant comments used for these purposes will have all potential identifiers removed to ensure participant anonymity and confidentiality.

Survey and interview data will not include any information that can be used to identify individual participants. Although the number of interviews with managers is small ($n = 50$) your comments will not affect your privacy/anonymity. This is because all information provided by you will be de-identified prior to analysis and, furthermore, interviews will be conducted with managers at incubators around the world providing an additional layer of anonymity to data findings.

The information you share will be used for this PhD research with data used for the preparation of the thesis, and including research papers for publication, conference papers and presentations, and industry-based stories for general publication. The research findings will provide important insights for the incubator industry in guiding the provision of support services that may facilitate both tenants' business growth as well as potentially contributing to their psychological development.

All named researchers for this study have extensive experience in conducting research and abiding by the ethical principles in conducting this research. This project has received approval from the Federation University Australia's Human Research Ethics Committee (project number: A17-110).

All research data for this study will be retained, securely, for a minimum of five years. Thereafter it be destroyed in accordance with the Institutional requirements for data security.

Although this research comprises two methods (surveys and interviews), you may choose to participate in none, one or both studies.

Your participation in this research is voluntary and you are free at any time up until and while completing the survey and interview to withdraw your participation, without explanation. There are no consequences for withdrawing from this research. However, if you wish to withdraw from this study after information has been aggregated - it is then unable to be individually identified - so from this point it is not possible to withdraw your information/data. You may also choose not to respond to all questions in the interview/survey, just answer the questions you are comfortable with.

Please note that participation in this research is in no way associated with your incubator nor will feedback be provided to the incubator about your participation or non-participation in the study.

If you choose to participate in this research your consent is assumed through the completion and submission of the survey and in the provision of your first name and email contact should you wish to participate in the interview. To participate in the interview, please review the consent form provided and either (a) sign the form and return it to the student researcher prior to commencing the interview, or (b) provide verbal consent to the researcher prior to commencing the interview. Your verbal consent will be recorded and documented by the researcher.

It is unlikely that you will experience any distress when completing the survey or by participating in the interview. However, in the unlikely event that you are concerned about what has been asked we

advise that you follow the protocols for accessing professional support through your workplace, or contact a medical health practitioner. For incubator managers and staff located in Australia you may wish to access the Beyond Blue information line (1300 224 636), Lifeline (131 114) or the Mental Health Advice Line (Ph. 1300 280 737) for expert advice, support and information to deal with personal challenges and stress.

For further details about this research, please contact Dr Angela Murphy aa.murphy@federation.edu.au (T: +61 3 5327 6198) or Alison Ollerenshaw: a.ollerenshaw@federation.edu.au (T: + 61 3 5327 6201).

Further details about this research are also available by contacting Prof Suzanne McLaren: s.mclaren@federation.edu.au and Assoc Prof Helen Thompson: h.thompson@federation.edu.au

A YouTube video briefly outlining the research which has been developed for incubator tenants. This may be of interest to you and is available at: **https://www.youtube.com/watch?v=nOpyQidO5Qo**

If you have any questions, or you would like further information regarding the project titled The relationship between business incubator services and the psychological capital of tenants, please contact the Principal Researcher *(Dr Angela Murphy, Principal Researcher)* at the Centre for eResearch and Digital Innovation **EMAIL:** aa.murphy@federation.edu.au   **PH:** +61 3 5327 6198

Should you (i.e. the participant) have any concerns about the ethical conduct of this research project, please contact the Federation University Ethics Officers, Research Services, Federation University Australia,
P O Box 663 Mt Helen Vic 3353 or Northways Rd, Churchill Vic 3842.
Telephone: (03) 5327 9765, (03) 5122 6446; Email: research.ethics@federation.edu.au
CRICOS Provider Number 00103D

CRICOS Provider No: 00103D   V2 2017

Appendix O

<u>**Manager survey**</u>

The following questions are about you, the business incubator, and the supports and services offered at the incubator you work in. Please respond to the questions using the drop down menus and comment boxes provided. If there is a question you are unable to respond to, leave that question blank and move onto the next one.

In which country is your business incubator located?

In which geographical area is your business incubator located? Options: Urban, Regional, Other:

What is your role at the incubator? Options: Director; Manager; CEO; Other:

How long have you been employed in this role, at the incubator, for? Options: Years/months

As a percentage, please estimate how much time per day you spend with tenants at your facility?

Have you previously, or currently, been an entrepreneur or small business owner? Options: Yes / No

---

Please indicate the level of importance of the following incubator services and features using the following scale: 1 = no importance; 5 = moderate importance; 10 = high importance

Space, physical resources and infrastructure:

> Workspace and amenities (e.g., desk; office space meeting rooms; warehouse/design space) for tenants

> Access to administrative support for tenants

> Provision of technology services (e.g., internet and current technology infrastructure) for tenants

> Low cost rental/leasing agreement for tenants

> Convenient location with access to other infrastructure and services (e.g., car parking; child care; café)

Business Support Services:

> Business mentoring and coaching for tenants

> Provision of business development, training and education for tenants

> Provision of specialised business services and supports (e.g., professional business advice;

> Marketing; financial management; funding advice; legal advice; ecommerce) for tenants

Networking:

> Enabling tenants to network with incubator staff and other tenants for business-related knowledge exchange and support.

> Enabling tenants to network with other tenants for social support.

> Enabling tenants to network with members of the wider business community, including business and industry funding bodies, potential business partners and/or customers.

Selection, Entry and Exit:

> Having tenants apply to join the incubator by having them submit a Curriculum Vitae and/or participate in a selection interview.

> Having tenants apply to join the incubator by having them prepare and submit a business plan.

> Providing tenants with information about the duration of time they can remain at the incubator.

> Scheduling regular reviews with tenants about their business progress.

Please indicate the level of importance of each of the following roles and the contribution of incubators, using the following rating scale: 1 = no importance; 5 = moderate importance; 10 = high importance

Business growth

Wealth creation

Jobs growth

Tenant wellbeing (business / other)

Regional economic development

The researchers are continuing to collect data for this study through interviews with incubator managers and staff. Would you be willing to participate in an interview: Yes/No

If Yes: To enable the researchers to contact you organise an interview, please provide your first name and email address below.

> Name:
> Email address:

Appendix P

<u>Interview Schedule (incubator managers and staff)</u>

1. Please tell me about the incubator you work in?

2. What is your role – and that of other staff – at the incubator in which you work? What is the scope of services that you provide at the incubator? And to tenants?

3. What do you perceive are the advantages and disadvantages for tenants and small businesses in operating from your incubator?

4. What do you perceive is the role of incubator services in supporting tenants to identify and achieve their business goals?

5. To what extent should incubators influence how tenants approach and respond to challenges with their business? In what ways have tenants been supported by the incubator services to overcome these challenges?

6. What do you consider is the role of incubators in supporting and building tenant's confidence in their own business development? Can you provide examples from your own experiences with working with tenants?

7. What is the role of business incubators to guide tenants with their current (and future) business activities and goals? Please explain. Are there particular services at the incubator that influence this?

8. What role do incubators have in guiding tenants towards their business goals and to remain focused on these goals? And to establish new business goals? How has this been facilitated at your incubator?

9. What is the role of incubators and incubator managers/staff in supporting tenants' wellbeing as they develop their business?

Appendix Q

Consent Form
Human Research Ethics Committee

Federation
UNIVERSITY·AUSTRALIA

PROJECT TITLE:	**The relationship between business incubator services and the psychological capital of tenants.**
RESEARCHERS:	**Dr Angela Murphy (Principal researcher)** **Alison Ollerenshaw (PhD student)** **Prof Suzanne McLaren (Associate researcher)** **Assoc Prof Helen Thompson (Associate researcher)**

Code number allocated to the participant:	

Consent – Please complete the following information:

I _____ of _____

hereby consent to participate as a subject in the above research study.

The research program in which I am being asked to participate has been explained fully to me, verbally and in writing, and any matters on which I have sought information have been answered to my satisfaction.

I understand that all information I provide (through surveys and interviews) will be:

- Treated with the strictest confidence and data will be stored separately from any listing that includes my name and email address.
- An audio recording and hand written notes of the interview will be made and used only by the named researchers.
- Aggregated results will be used for research purposes and may be reported in scientific and academic journals.
- The number of interviews being conducted is small (n = 50 or less) however my comments will not affect my privacy/anonymity. This is because all information I provide will be de-identified by the researchers prior to analysis and, furthermore, interviews will be conducted at incubators around the world providing an additional layer of anonymity to the data collected.
- The researchers may use participants' interview quotes and comments to support their research findings. These may be presented in reports and publications that are publicly accessible.
- I am free to withdraw my consent at any time during the study in which event my participation in the research study will immediately cease and information/data obtained from it will not be used. I understand
  the exception to this is if I withdraw after information has been aggregated - it is unable to be individually identified - so from this point it is not possible to withdraw my information/data, although I may still withdraw my consent to participate.

SIGNATURE:_____   **DATE:** _____

Appendix R

Annual/Final Project Report

Human Research Ethics Committee

Please indicate the type of report	☐ Annual Report (**Omit 3b & 5b**) ☒ Final Report
Project No:	A17-110
Project Name:	The relationship between business incubator services and the psychological capital of tenants.
Principal Researcher:	Dr Angela Murphy
Other Researchers:	Alison Ollerenshaw, Prof Suzanne McLaren, A/Prof Helen Thompson
Date of Original Approval:	26 July 2017
School / Section:	CeRDI
Phone:	03 5327 6198
Email:	aa.murphy@federation.edu.au

Please note: For HDR candidates, this Ethics annual report is a separate requirement, in addition to your HDR Candidature annual report, which is submitted mid-year to research.degrees@federation.edu.au.

1) Please indicate the current status of the project:				
1a) Yet to start				☐
1b) Continuing				☐
1c) Data collection completed				☒
1d) Abandoned / Withdrawn:				☐
1e) If the approval was subject to certain conditions, have these conditions been met? (If not, please give details in the comments box below)		☒ Yes		☐ No
Comments:				
1f) Data Analysis	☐ Not yet commenced	☐ Proceeding	☒ Complete	☐ None

1g) Have ethical problems been encountered in any of the following areas:		
Study Design	☐ Yes	☒ No
Recruitment of Subjects	☐ Yes	☒ No
Finance	☐ Yes	☒ No
Facilities, Equipment	☐ Yes	☒ No
(If yes, please give details in the comments box below)		
Comments:		

2a) Have amendments been made to the originally approved project?	
☐ No	☒ Yes
2b) If yes, was HREC approval granted for these changes?	
☒ Yes	**Provide detail:** ☒ Yes **Application for Amendment to an Existing Project** ☐ Yes **Change of Personnel** ☒ Yes **Extension Request**
☐ No	**If you have made changes, but not had HREC approval, provide detail as to why this has not yet occurred:**
2c) Do you need to submit any amendments now?	
☒ No	☐ Yes **Application for Amendment to an Existing Project** ☐ Yes **Change of Personnel** ☐ Yes **Extension Request** *** NB: If 'Yes', download & submit the appropriate request to the HREC for approval:** **Please note: Extensions will not be granted retrospectively. Apply well prior to the project end date, to ensure continuity of HRE approval.**

3a) Please indicate where you are storing the data collected during the course of this project: (Australian code for the Responsible conduct of Research Ch 2.2.2, 2.5 – 2.7)
As outlined in the original ethics application, storage of all data and information is contained in a locked cabinet, in a locked room located in the Centre for eResearch and Digital Innovation (the office location for the student and principal researchers on this application). Data collected via the online surveys and audio recordings are stored on a password protect FedUni computer/laptop and on a password protected web-based database.
3b) Final Reports: Advise when & how stored data will be destroyed **(Australian code for the Responsible conduct of Research Ch 2.1.1)**

The data will be disposed of by the principal researcher through the process of negotiation with the data disposal officer, at Federation University. The data will be disposed after 5 years. However, electronic data from this research may be retained for longer, as needed.

4) Have there been any events that might have had an adverse effect on the research participants OR unforeseen events that might affect continued ethical acceptability of the project?

☒ No   ☐ Yes   *** NB: If 'yes', please provide details in the comments box below:**

Comments:

5a) Please provide a short summary of results of the project so far (no attachments please):

Data collection is now complete. A total of 105 surveys and 40 interviews were conducted with incubator tenants and incubator managers, for this PhD research. Analysis of both the qualitative and quantitative data for tenants revealed support for the original hypotheses indicating that three of the four incubator characteristic services influence tenants' psychological capital. The evidence from the data collected from managers also highlights the importance and of these support services on tenants. The manager data is largely consistent with the findings from tenants.

5b) Final Reports: Provide details about how the aims of the project, as stated in the application for approval, were achieved (or not achieved).
(Australian code for the Responsible conduct of Research 4.4.1)

Two studies were completed for this PhD research. Study one involved tenants at business incubators, and the second study was conducted with managers at business incubators. The overarching aim of both studies was to examine whether a relationship exists between the characteristic services offered at business incubators and the psychological capital of tenants within these facilities and whether this relationship is reflected in the narrative experiences of tenants and managers.

The above aim was achieved through the data collected from tenants and managers at business incubators. For tenant participants, 30 surveys were completed and 12 in-depth, semi-structured interviews were conducted. Analysis of both the qualitative and quantitative data revealed support for the aims of the research, and the specific hypotheses associated with this study. It offers evidence that most of the incubator characteristic services influence tenants' psychological capital. Similarly, the narrative perceptions from managers, in study two, provides complementary insights to support the predicted relationships.

This research informed the development of a conceptual framework outlining the relationships between three of the four characteristic incubator services of space, physical resources, and infrastructure, business support services, and networking, and incubator tenants' hope, efficacy, resilience, optimism, and psychological capital. There are broad implications from the research findings for the incubator industry, which have been documented in the PhD thesis which is expected to be lodged for examination at the end of 2019.

6) Publications: Provide details of research dissemination outcomes for the previous year resulting from this project: eg: Community seminars; Conference attendance; Government reports and/or research publications
Publications from this research have been prepared or are currently underway. One paper has been reviewed and is under consideration with the Journal of Global Entrepreneurship Research. A second paper is currently being planned based on the findings from the data collected from incubator tenants and managers.

7) The HREC welcomes any feedback on: • **Difficulties experienced with carrying out the research project; or** • **Appropriate suggestions which might lead to improvements in ethical clearance and monitoring of research.**
The student researcher experienced difficulties recruiting tenants at incubators to participate in the research. Despite extensive efforts by the student over an extended period of time, only a small number of participants participated in Study 1. The low participation numbers meant that revisions to the original study plan were necessary and the longitudinal component of the first study was deemed unachievable due to low participation numbers. A new approach to the research involving s second, related study, with incubator managers was therefore designed. Ethics approval for amendments to the original project were sought to ensure ethical compliance. This new study provided a unique direction for the research and complements the data collected in study 1. However, this 'new direction' required extensive work and required extended time to complete all data collection for both studies. This however has now been achieved.

8) Signatures			
Principal Researcher:	Dr Angela Murphy	**Date:**	14 Nov 2019
Other/Student Researchers:	Alison Ollerenshaw	**Date:**	14 Nov 2019
	Prof Suzanne McLaren	**Date:**	14 Nov 2019
	A/Prof Helen Thompson	**Date:**	14 Nov 2019