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Full Length Research Paper

Commercialisation of research and technology: A multiple case study of university technology business incubators

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One of the most important reasons for developing university technology business incubators (UTBIs) is to permit the commercialisation of technology and research by setting up new firms to graduate into fully-fledged businesses, which are normally referred to as new technology-based firms (NTBFs). Relying on the resource-based theory (RBT) and incubation models, the present research is concerned with proposing a theoretical framework for the enabling factors that influence the graduation of new technology-based firms (NTBFs) that result from the commercialisation of research and technology through to becoming established businesses from a university technology business incubator (UTBIs). A pragmatic philosophy informed the researcher's theoretical lens. This involved the use of a multiple case study using mixed methods that entailed the use of both quantitative and qualitative research techniques in the form of semi-structured interviews with the UTBI's management team. The most significant finding of the research is that there are a number of enabling factors that influence the graduation of NTBFs within a UTBI, the most significant of which are stringent selection and admission criteria, the business support services, financial resources, university entrepreneurial network/mediation and organisational resources. Each of these factors is grouped into three stages: the pre incubation stage, the incubation stage and the graduation stage. The unit of analysis for this research consists of the management team within three UTBIs located in one of the University of Technology in Gauteng Province. Owing to the nature of the sample, the results may not be representative of the remaining UoTs in Gauteng. The study attempts to link the development of business ideas to factors that influence their progression into graduated businesses.

Key words: Commercialisation, enabling factors, new technology-based firms, University of Technology, university technology business incubators.

INTRODUCTION

One of the most important reasons for developing university technology business incubators (UTBIs) is to

permit the commercialisation of technology and research by setting up new firms to graduate into fully-fledged

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businesses, which are normally referred to as new technology-based firms (NTBFs). The latter are considered an integral part of economic growth (Mian, 1996b). Despite the potential contribution of UTBIs to the economy, relatively few studies have investigated and identified the enabling factors that influence the graduation of NTBFs from conception through to becoming established businesses.

This study proposes a theoretical framework of the enabling factors that influence the graduation of NTBFs from UTBIs into established businesses as a result of the commercialisation of research and technology. To achieve this, a multiple case study using mixed methods is employed. The most significant finding of the research is that there are a number of enabling factors that influence the graduation of NTBFs within a UTBI, the most significant of which are stringent selection and admission criteria, the business support services, financial resources, university entrepreneurial network/mediation and organisational resources. Each of these factors is grouped into three stages: the pre incubation stage, the incubation stage and the graduation stage. The rest of the paper is organised as: literature review, followed by research method, analysis and results, discussion and implications, and finally conclusion.

LITERATURE REVIEW

Previous researchers in university-based incubation focused on assessing the value-added contributions of UTBIs to NTBFs. In his seminal work on United States' (US) universities, Mian (1994) focused on assessing the effectiveness of university technology incubators on the growth of NTBFs. Building on this case study, Mian (1996b) found that UTBIs provide the necessary resource-base and environment conducive to this development and add major values, making the UTBI a viable strategy for nurturing NTBFs (Mian, 1996a).

According to Mian (1996a:330), a UTBI is defined as “a multi-tenant building, in and around university campuses, which provide affordable, flexible space and a variety of typical incubator and university related services for technology based tenant firms”.

The current study derives its conception of the UTBI from these views. In a further study carried out a year later, Mian (1997) developed a conceptual framework for assessing and managing the UTBI as a tool for new venture creation. The framework comprises three performance dimensions: programme sustainability and growth, tenant firm's survival and growth, and contributions to the sponsoring university's mission. According to the framework, the key determinants of the UTBI's effective performance are the facility's expected performance outcomes, the degree of consistency of the management policies with the programme's objectives, the scope of available services and their perceived value-added (Mian, 1997).

More recently, Mian (2011) concluded that a research university's active entrepreneurial involvement provides critical value-added inputs that are essential for the creation and development of innovative ventures and new products. With regard to the growth of NTBFs, a series of important studies have examined the critical success factors of the UTBI in order to evaluate their effective operation. Lee and Osteryoung (2004) compared critical success factors for effective operations of UTBIs in the US and Korea. The study found 14 factors in the areas of goal/operations strategy, physical/human resources, incubator services and networked programme. The goal/operations strategy was perceived to be a more important factor in the US than in Korea. In the South African context, Buys and Mbewana (2007) found eight factors that determine the success of incubators. An important conclusion was that these success factors are strongly correlated with each other (Buys and Mbewana, 2007).

While much of this literature focuses on the critical success factors of NTBFs, one school of the thought has focused on the resource-based theory (RBT), formerly known as the resource-based view (Alvareza and Busenitz, 2001; Löfsten and Lindelöf; 2005; Barney et al., 2011), to improve understanding of the enabling factors that determine the success of UTBI. For instance, in their research, Somsuk et al. (2010; 2012) aimed to improve the understanding of enabling factors that determine the success of the UTBI. Using RBT as the base theory and the Q-sort technique to classify enabling factors, they concluded that resources, capabilities and internal drivers found through the RBT hold the possibility of enabling the success of the UTBI programme (Somsuk et al., 2010). The study suggests that strategic resources and their categories are important to the success and improvement of the competitive advantage of technology-based SMEs (Somsuk et al., 2012).

Furthermore, based on the RBT and the absorptive capacity construct, Rothaermel and Thursby (2005a) hypothesised that knowledge flows enhanced incubator-firm performance. They suggested that the incubator firms' absorptive capacity is an important factor when transforming university knowledge into firm-level competitive advantage. In a follow-up study of incubator graduation, Rothaermel and Thursby (2005b) found that strong ties to the sponsoring university not only reduces the probability of new NTBFs failure but also retards timely graduation. The above line of inquiry puts forth the notion that the success of NTBFs may not be attributed to a single success factor (Kumar and Ravindran, 2012), but to a number of factors.

What is a business incubator (BIs)?

Business incubator (BIs) has become a ubiquitous phenomenon (Bergek and Norrman, 2008) which has drawn

broad attention from scholars, regional development practitioners and policy makers (Qian et al., 2011). However, there are several sources of ambiguous definitions (Hackett and Dilts, 2004b:59). A precise definition of the phenomenon has been frustrated by the practice of marketing BIs under different terms (Bøllingtoft and Ulhøi, 2005). In fact, there is an on-going debate regarding definitional issues of the concept.

Based on an extended list of definitions, both researchers and practitioners have presented numerous definitions and descriptions of BIs (for a detailed review see Appendix D; Löfsten and Lindelöf, 2002; Peters et al., 2004; Hackett and Dilts, 2004a, b; NBIA, 2007; Markman et al., 2008; Farsi and Nikraftar, 2011). More importantly, the broader trend has been to expand this definition from “*incubator*” (a facility) to “*incubation*” (a process) (Hallam and DeVora, 2009). There are two essential aspects in today’s definitions of BIs: the actual definition (what it is) and the often-implicit impacts (effects) BIs have in firms, communities, science, and technology (Ratinho, 2011).

Pursuing this further and in order to understand incubation one must begin by understanding the term “*incubate*”. According to the literature, to incubate is not only to contain something in a favourable environment for its appropriate development (Branstad, 2010) but also to give form and substance to it (Hisrich, 1988). With regard to incubation, to incubate fledging companies implies an ability or desire to maintain prescribed and controlled conditions favourable to the development of NTBFs (Hisrich, 1988). Hence, a business incubator is a “*producer*” of business assistance programs. While NTBFs are “*consumers*” of those outputs, who operate in an interdependent co-production relationship with the incubator (Rice, 2002).

Accordingly, a business incubator is a shared office space facility that seeks to provide its NTBFs (i.e. “*portfolio*” or “*client*” or “*tenant-companies*”) with a strategic, value-adding intervention system (i.e. business incubation) of monitoring and business assistance (Hackett and Dilts, 2004b). Conversely, practitioners use the term business incubator to embrace technology centres, science park incubators, business and innovation centres, new economy incubators, and a variety of other models (European Commission, 2002). In this study, the above definition of BIs is considered to be the best one that helps understanding this phenomenon and conducting the current study.

The models of the incubation process

According to Bergek and Norrman (2008), little has been written on incubator models. Other scholars comment that they have yet to encounter such a dynamic model (Phan et al., 2005). Moreira and Carvalho (2012) suggest that the search for models of the business incubation process is on a multifaceted road. It is therefore important

to identify the characteristics of different incubating models, to understand how they work, to assess the value they can add to their particular type of NTBF, and to ascertain the ability of their staff to understand and cater to their clients’ needs (Grandi and Grimaldi, 2004). Bizzotto (2003) defines the incubation process as comprising the following three stages:

Pre-incubation: the stage when the focus is on the generation of project ideas that have the potential of being converted into a profitable commercial business, and on identifying future tenants for the incubator.

Incubation: the stage during which entrepreneurs are provided with the facilities and the strategic support needed.

Post-incubation: the take-off stage when the business is able to continue operations outside the incubator by itself.

The European Commission (2002) presents an incubation model that includes the key processes for generating and developing NTBFs (Figure 1). This model suggests that the way in which business incubators operate can be depicted in terms of a simple input-output model. According to this model the three major elements of incubation are:

Inputs: these mainly consist of stakeholder inputs (e.g. the provision of finance), management resources and projects put forward by entrepreneurs.

Processes: the various inputs are brought together in the business incubation process through the provision of incubator space and a variety of value-adding services to start-up companies.

Outputs: successful companies graduate with positive job and wealth creation impact.

Following this line of thinking, Hackett and Dilts (2004a) propose that NTBFs are selected from a pool of incubation candidates, monitored and assisted, and infused with resources while they undergo early-stage development (Figure 2). According to the model, “*outcomes*” refers to either the survival or failure of an NTBF at the time it exits the incubator, while “*controls*” includes regional differences in economic dynamism, the level of incubator development and the size of incubators. To illustrate the above point, the model is shown as being temporal with arrows in the model indicating the relationships amongst the constructs. The arrows that lie between constructs represent the fact that it is not known whether these constructs overlap; because no one has conducted research using these constructs, the possibility for interaction must be depicted. Arrows going backward from outcomes to the constructs of interest indicate feedback loops that occur over time and through experience, suggesting organisational learning effects (Hackett and Dilts, 2004a).

Other scholars suggest that incubation is very much dependent on the quality of human relationships and occurs via a process of co-production in dyads and triads

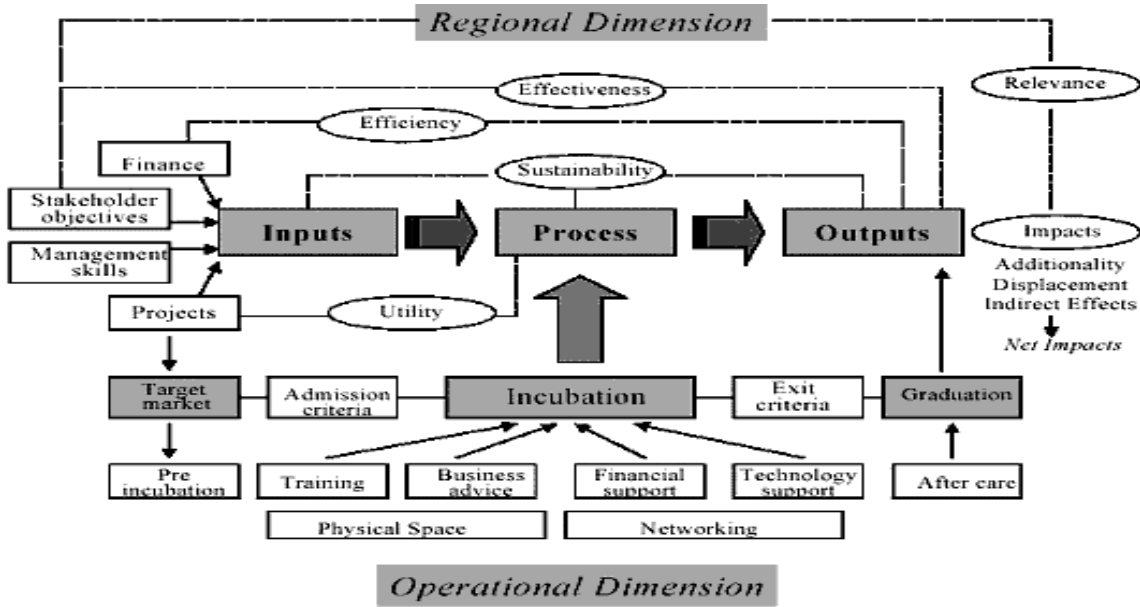


Figure 1. Business incubator model. Source: European Commission (2002).

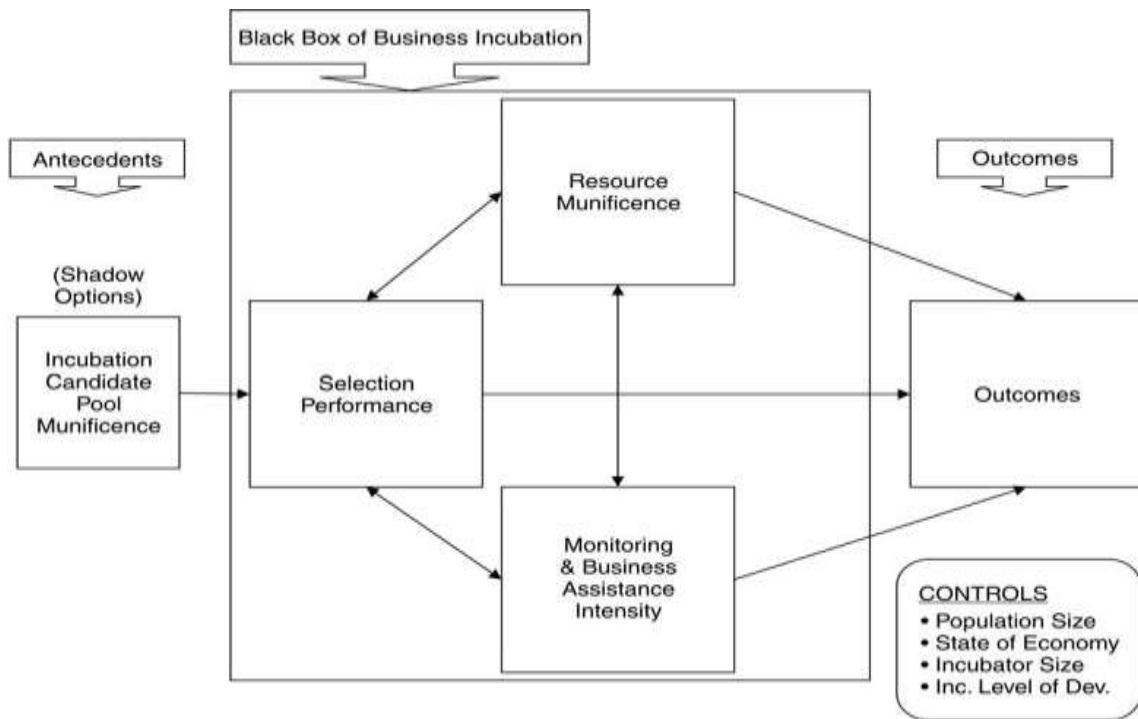


Figure 2. Incubation process model. Source: Hackett and Dilts (2004a).

(Rice, 2002; Ahmad and Ingle, 2011). Without the voluntary and active participation of NTBFs, the mechanisms that facilitate co-production break down (Ahmad and Ingle, 2011). Bergek and Norrman (2008) assert that the three distinguishing factors between different incubation

models are selection, business support and mediation (Table 2). The other factors in their framework include infrastructure and graduation. Selection refers to decisions about which NTBFs to accept for entry and which to reject (Bergek and Norrman, 2008:23).

Table 1. Case selection

Case	Yr established	Description	Location
Case A	2006	Case A seeks to nurture and promote the development and involvement of small and medium businesses within the mineral beneficiation sector, particularly platinum group metals (PGMs). It specialises in assisting aspiring jewellers to acquire skills and build careers in designing and manufacturing platinum group metal jewellery. These small jewellery enterprises are housed either physically or virtually at the UTBI.	Based in North West Province, with a satellite station at an UoT in Gauteng
Case B	2007	Case B improves enterprise performance, enhances profitability and growth, and offers technology and management support to South African information and communications technology (ICT) NTBFs and is geared to help early movers maximise the value of their ideas.	Located at an UoT in Gauteng
Case C	2008	Case C is the first South African business incubator that hosts mixed manufacturing technologies under one roof. This model serves as a one-stop solution to solving the problem of entrepreneurs not having the necessary business and technical skills along with a lack of access to supporting resources in the manufacturing sector.	Located at an UoT in Gauteng

Table 2. Incubation model components.

Incubator model				
Selection	Business support	Mediation	Infrastructure	Graduation

Source: Bergek and Norrman (2008).

The infrastructure consists of localities, office facilities and “administrative” services. Business support is associated with coaching/training activities undertaken to develop the NTBFs. Mediation refers to how the incubator connects the NTBFs to each other and to the outside world. Finally, graduation is related to exit policies, i.e. decisions concerning the circumstances under which NTBFs should leave the incubator (Bergek and Norrman, 2008:23). This paper adopts Bergek and Norrman incubation-model components to identify enabling factors that might influence the graduation of NTBFs in a UTBI.

Theories relevant to business incubation

Resource-based theory

Most of the studies in the incubation literature have utilised the RBT to investigate the critical factors for successful business incubation (Somsuk et al., 2010; Todorovic and Moenter, 2010; Somsuk et al., 2012). According to Barney et al. (2011), resource-based

research has reached such a level of precision and sophistication that it resembles a theory rather than a view. According to Barney (1991:105-106), for a firm’s resources to have the potential to be the basis of a competitive advantage, “(a) it must be valuable, in the sense that it exploits opportunities and/or neutralises threats in a firm’s environment, (b) it must be rare among a firm’s current and potential competitors, (c) it must be imperfectly imitable, and (d) there cannot be strategically equivalent substitutes for this resource that are valuable but are neither rare or imperfectly imitable”.

RBT has been one of the most significant theories in the field of strategic management. However, some researchers have criticised RBT in terms of its theoretical and practical applicability (Priem and Butler, 2001; Akio, 2005; Sheehan and Foss, 2007). According to Priem and Butler, the elemental RBT is not a theoretical structure. Lockett et al. (2009) point out in addition that the RBT is tautological if the firm’s possession of unique capabilities cannot be ascertained independently of their description. Other critics suggest that the RBT’s concepts of “valuable” and “rare” resources do not fulfil the conditions

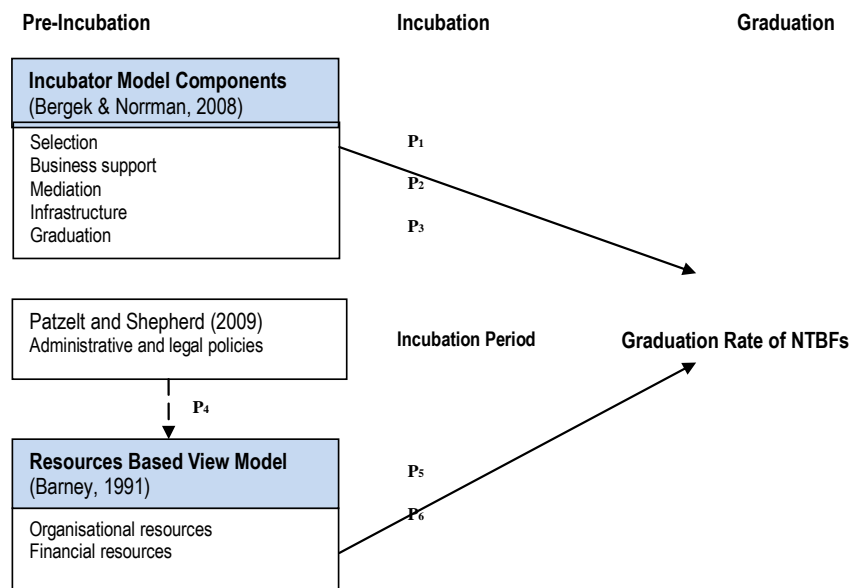


Figure 3. The proposed research model.

for acquiring and realising a competitive advantage (Akio, 2005). Some point out that it lacks the concept of activities and argue that it has not reached its full potential in the field of strategy (Sheehan and Foss, 2007). The RBT model appears well-suited to the present research objectives. It is a compelling theory and can provide insight into the way in which the incubator values and selects NTBFs (Hackett and Dilts, 2004a).

Real options theory

Hackett and Dilts (2004a) employed real options theoretic reasoning to develop a theory of business incubation. This theory seeks to predict and explain how business incubators and the process of business incubation increase the likelihood that new ventures will survive the early stages of development. A real options perspective would view NTBF-selection as the creation of an option with subsequent resource infusions and monitoring and assistance as option exercises (Hackett and Dilts, 2004a). It conceptualises the incubator as an entrepreneurial firm that sources and macro-manages the innovation process within emerging organisations, infusing these organisations with resources at various developmental stage-gates while containing the cost of their potential failure (Hackett and Dilts, 2004a).

Other theories applied to incubation

Using the stakeholder theory, Alsos et al. (2011) investigated how technology incubators manage and balance the expectations of stakeholders, and the effect

on the shaping of technology incubators and their chances of success. The study identified three strategies to balance stakeholders' expectations (Alsos et al., 2011). Another theory that is widely used is the network theory, which proposes that the primary value-added feature of incubators is the set of institutionalised processes and norms that carefully structure and channel knowledge throughout the incubator network in order to create conditions that facilitate the development of NTBFs and the commercialisation of their innovations (Hackett and Dilts, 2004a). They do not provide an integrated, theoretically driven explanation of the factors that constitute the incubation process.

Theoretical framework and propositions

This section will discuss the relevance of all theoretical foundations that constitute the constructs in the theoretical framework. The purpose of this study is to propose a theoretical model of the enabling factors that influence the graduation of NTBFs. The theoretical foundation of this research is based upon the literature, RBT and Bergek and Normman's Incubator model components. Figure 3 shows the research model that proposes RBT and Bergek and Normman's Incubator model components might influence the graduation of NTBFs in a UTBI.

Stringent selection and admission criteria

Researchers have found that tenant survival rate is positively related to a balanced screening profile (Aerts et al., 2007). The aim of the selection process is to identify

business proposals that have a greater chance of success (Bizzotto, 2003). The ideal candidate is likely to be judged on level of innovativeness and potential for growth (Alsos et al., 2011). One way of minimising the number of tenant failures is to subject potential NTBFs to a severe screening process (Aerts et al., 2007). Having in mind the question raised about the selection criteria Bergek and Norrman (2008) forward a four-field matrix consisting of the following strategies: picking-the-winners and idea, picking-the-winners and entrepreneur, survival-of-the-fittest and idea and survival-of-the-fittest and entrepreneur. In view of this, it is expected that proposition *P1: The stringent selection and admission criteria will significantly and positively influence the graduation of NTBFs in a UTBI*

Business support services

Business support is an integral part of business incubation and arguably its most complex dimension (Ratinho et al., 2010). Business support services such as coaching and training are crucial elements of learning within BIs (Bruneel et al., 2012). Bergek and Norrman (2008) suggest that business support strategies may be positioned on a scale from “*strong intervention*” to “*laissez-faire*”. These dimensions will be incorporated to determine the factors that might influence the graduation of NTBFs. Hence, in view of the above, we may deduce that proposition *P2: Business support services are significantly and positively related to the graduation of NTBFs*

University entrepreneurial network/ mediation

The literature defines networking as the access available to the tenants of the incubator to managers, administrative, management, financial, legal, insurance consultants as well as to scientists, academicians, prospective customers, either for a fee or free of charge (Peters et al., 2004). McAdam and McAdam (2008) opine that university links are useful in terms of facilitating and developing networks with third parties and providing access to research and technology. The UTBI's university linkage plays an important role in providing the infrastructure support and the necessary value-added contributions critical for nurturing such businesses (Mian, 1996b). Mediation strategies vary in terms of the type of innovation system in focus: technological, regional or cluster (Bergek and Norrman 2008). As a result of the above, it is assumed that proposition *P3: University entrepreneurial networks are significantly and positively influence the graduation of NTBFs*

Organisational resources

The purpose of the incubator is to provide

resources in those areas where entrepreneurs have gaps (Rice, 2002). Commonly incubators provide clients with affordable and flexible space (Hallam and DeVora, 2009). The physical infrastructure includes rental spaces, equipment, administrative facilities like fax, phone, internet lines, in certain cases labs, conference facilities and so on (Peters et al., 2004). It is expected that proposition *P4: Organisational resources are significantly and positively related to the graduation of NTBFs.*

Access to administrative support and reduction of early-stage operational costs are typical critical barriers which many “new infants” have difficulty in overcoming (Bøllingtoft and Uthøi, 2005). These administrative burdens consume the academic entrepreneur's scarce time and resources in conforming to such bureaucratic requirements (Patzelt and Shepherd, 2009). Similarly, explicit policy forcing graduation might be counter-productive (Rothaermel and Thursby, 2005b). The authors further suggest that university must not institute iron clad policies, but rather to make graduation decisions on a case-by-case basis. The aspiring and established entrepreneurs must be aware of university policy and procedures and of the consequences for breaching the agreements (Dina, 2013). As a result, it is expected that proposition *P5: University administrative and legal policies will have a negative influence on the graduation of NTBFs.*

Access to financial resources

Access to finance offered by a policy program is central and enhances the entrepreneurs' perceived benefits of other policy measures such as providing access to nonfinancial resources (networks, business knowledge) and reducing administrative burdens, but diminishes the perceived benefits of offering tax incentives for new ventures (Patzelt and Shepherd, 2009). UTBIs do not have financial pressure to return a profit, but they are focused on serving the scientific community at the university (Carayannis and von Zedtwitz, 2005). Therefore, based on the above argument, we may infer that proposition *P6: The possession of financial resources will positively influence the graduation of NTBFs.*

METHODOLOGY

This paper is designed to be a multiple case study using mixed methods that entail the use of both quantitative and qualitative research techniques. Quantitative and qualitative data are collected and analysed appropriately at the same time, but the latter is given more weight than the former. Such a design allows the two types of data to integrate at all stages of the project. For this study, a pragmatic paradigm is preferred because they have the ability to embrace multiple cases, quantitative and qualitative data, and multiple research paradigms (Dooley, 2002). This approach relies on a version of abductive reasoning that moves back and forth

between induction and deduction—first converting observations into theories and then assessing those theories through action (Morgan, 2007). The methodology of multiple case studies will be used within this study because of its ability to combine data collection methods such as documents, archival records, interviews, physical artefacts and observations (Eisenhardt, 1989; Yin, 2009).

Basically, a mixed method approach inquiry combines both ideas from qualitative and quantitative research (Creswell, 2009:4; Johnson et al., 2007; Grafton et al., 2011). More importantly, the rationale for mixing data within one study is grounded in the fact that neither quantitative nor qualitative methods in themselves are sufficient to capture the trends and details of a situation (Creswell et al., 2004; Ivankova et al., 2006). This applies to a complex issue of enabling factors that influence the graduation of NTBFs in a UTBI in particular. The study adopts a multiple case-study approach as applied by Mian (1994, 1996a, b, 1997) to assess the value-added contributions of UTBIs to NTBFs. Furthermore, the embedded case study designs points that such studies represent a form of mixed methods research since other research methods are embedded within the study (Yin, 2009:63). The mixed methods approach mixes the insights of qualitative research with the numerical rigor of quantitative research. Quantitative and qualitative data are collected and analysed concurrently, but more emphases are put on the latter

According to Yin (2009), a multiple case study can be used to either (a) predict similar results (a literal replication), or (b) predict contrasting results but for predictable reasons (a theoretical replication). A literal replication describes the conditions under which a particular phenomenon is likely to be found, while a theoretical replication describes the conditions when it is not likely to be found. In this study, the aim of the multiple case selection strategy is to compare and contrast results or theoretical replication, or to explain the conditions under which the factors that enable graduation will be uniquely associated with a particular type of UTBI model. In sum, mixed-methods design is appropriate for case studies (Sharp et al., 2011). In contrast to the use of case studies alone, mixed-methods research enables a researcher to address more complicated research questions (Yin, 2009:64). From the above discussion, it is clear that mixed methods research is the best way to fulfil research objectives and answer research questions. This research considers a combination of a multiple-case study, archives and semi-structured interview approaches in which both qualitative and quantitative research techniques are used in a semi-structured format.

This study's scope has been restricted to three incubators based in a university particularly UoT in Gauteng Province. Such Metropolitan environments with diverse and large-scale industrial activities may be helpful to business incubation (Zhang and Sonobe, 2011). The criteria for the selection of case organisations are as follows: First, since the aim was theoretical replication three different types of incubator organisations had to be selected. Second, the sites were to be officially designated as "UTBIs" as defined by Mian (1996a:330) not BICs, IPis, and CPIs. Third, only UTBIs with at least one graduated tenant were included in the study; hence all the incubators had been established for at least three years and more (Peters et al., 2004). A number of university incubator-incubation researchers in the past have used between two cases (Mian, 1996b; McAdam and McAdam, 2008) and six cases (Mian, 1994, 1996a; Grimaldi and Grandi, 2001). The three case studies included in this research (Table 1) should provide sufficient evidence, through theoretical replication, on which to base this study's key findings.

Sample selection

A sample comprises several "units" and each unit is observed at discrete points in time, comprising "cases" (Gerring, 2004:342). In

the case study method, because the researcher does not use statistical generalisation, but generalises theory, the goal is to obtain replication, not an enumeration (Kohn, 1997). Population, unit, case and observation are nested within each other (Gerring, 2004). A series of case studies might therefore be referred to as a sample (Gerring, 2004). According to Hackett and Dilts (2004b), there are multiple levels of analysis employed in incubator-incubation research which are (a) entrepreneur (individual) level, (b) incubator manager (individual) level, (c) incubatee (group/firm) level, (d) incubator (firm) level, (e) community (local) level, and (f) incubation industry (industry) level. This study will interview the management team (Mian, 1996a, 1997; McAdam and McAdam, 2008) who are directly involved with commercialisation of NTBFs.

A concurrent design utilising identical samples generated through the joint use of probability and purposive techniques was used to sample the UTBI staff who participated in this study. Concurrent mixed-methods sampling involved the selection of units of analysis through the simultaneous use of both probability and purposive sampling (Teddlie and Yu, 2007). Because senior management participated in the study, a clear and accurate picture of the NTBFs was acquired. In this study, quantitative and qualitative data are integrated not only at the stage of results reporting, but also during the processes of data collection and data analysis in order to maximise the integration of two methods. During the data collection stage, semi-structured interviews comprising a survey that contains both Likert-scale questions (quantitative data) and open-ended questions and annual reports (qualitative data) were utilised. The basic data analysis procedure in this study involved conducting separate data analyses for each of the quantitative (STATA) and qualitative data (ATLAS.ti), but the one was related to the other for the purpose of triangulation and embedding. Firstly, data analysis consists mostly of "within-case analysis" and "cross-case analysis". Secondly, data analysis consists of examining, categorising, tabulating, and testing qualitative or quantitative evidence for the initial propositions of the study, as proposed by Yin (2003:104).

ANALYSIS AND RESULTS

The data analysis consisted mostly of "within-case analysis" and "cross-case analysis", which are: the examination, categorisation, tabulation, and testing of the qualitative or quantitative evidence for the initial propositions of the study, as proposed by Yin (2003:104).

Within-case analysis

According to Eisenhardt (1989), within-case analysis involves detailed case-study write-ups for each site. This gives the investigator a rich familiarity with each case, which, in turn, accelerates cross-case comparison (Eisenhardt, 1989).

Case study A

Case A is a non-profit (Section 21) organisation that seeks to nurture and promote the development and involvement of small and medium-sized businesses within the mineral beneficiation sector, particularly the platinum group metals (PGMs) sector.

Pre-incubation stage

The process of selecting and admitting an NTBF is managed by the incubator's management team. During the pre-incubation stage, NTBF applications follow the following three-step process of selection and initiation before approval:

1. They must present the initial business idea
2. They have to start off with the UTBI as a project
3. They must graduate to become a UTBI tenant, when all business systems have been put in place and the business is making an income.

Incubation stage

The main service in Case A is assistance to small and medium enterprises to develop all aspects of their business. During the incubation stage, Case A offers the following services to NTBFs:

1. Access to machinery: state of the art equipment necessary to manufacture jewellery.
2. Platinum loan: assists NTBFs to borrow PGM metals to fulfil their orders.
3. Training centre: Case A has teamed up with the XYZ Further Education and Training (FET) College. The college prepares students for a National NQF Level 3 Certificate in Jewellery Manufacturing in a mass production environment.
4. Organised interactions: Case A has strong links with the South African jewellery manufacturing industry and is able to call on experienced advisors to assist and share information on what works and what does not work in the jewellery manufacturing industry.
5. Marketing of NTBF products: The centre is able to assist NTBFs to reach their clients and distribute platinum jewellery in and around South Africa. Case A also helps NTBFs with information and support to take part in international trade shows that open opportunities for tenants to sell their products internationally and form distribution networks in other countries.
6. Security: Security is very important when dealing with precious metals and expensive materials such as palladium and platinum. NTBFs benefit from high security at a very affordable price, since costs are shared.

The incubation services offered to NTBFs described above was affirmed by the respondent:

"So if you got the skill...but the skill is not up to standard, then while before you are incubated we sort of direct you, to to.... , I will not say training because you know colleges do the training. Basically direct you towards the qualification, we sometimes campaign for NQF to fund such a qualification. So basically,..... it's linking them with the qualifications to have the necessary

qualification to be in the incubator". [P 1: Case A A1.rtf - 1:81 [So if you got the skill...but the skill is not up to..] (19:19) (Super).

Graduation stage

The duration of stay for NTBFs is three years, after which a tenant should be able to operate without the help of Case A. Case A is linked to two institutions of higher education that continuously enrol potential NTBFs for various courses related to jewellery design. The combination of institutional support and incubation services contributes to the incubator's success, hence the timely and successful graduation of NTBFs.

Case study B

Case B is an ICT business and technology incubator that stimulates, grows and launches early-stage, technology-rich businesses through world-class technology incubation, professional business support services and resources, and a network of expert incubation and coaching professionals. The UTBI commenced its activities in 2007, focusing on the incubation of young IT graduates, professionals and disadvantaged groups, with the intention that these individuals pursue entrepreneurship as an alternative to traditional employment.

Pre-incubation stage

During the pre-incubation stage, Case B screens NTBFs on the basis of high-growth potential and innovativeness. The potential NTBFs are required to produce a business plan that outlines their growth potential

Incubation stage

Case B provides an integrated package of workspace, shared office services, access to specialised equipment and value-added services like management assistance, access to finance, marketing and networking support. Businesses within the UTBI fall within various stages of being built, from a concept phase, where a first-cut assessment of the strategic environment is being made, to the development phase, where feasibility and go-to-market strategies are being explored, and, ultimately, the commercial phase, where profitable market opportunities are exploited and the focus is on growing the depth and breadth of the venture. In the words of the Case B manager when asked about the incubation services offered to NTBFs:

"We only give support to NTBFs such as facilities to use, internet and other resources that the NTBFs might

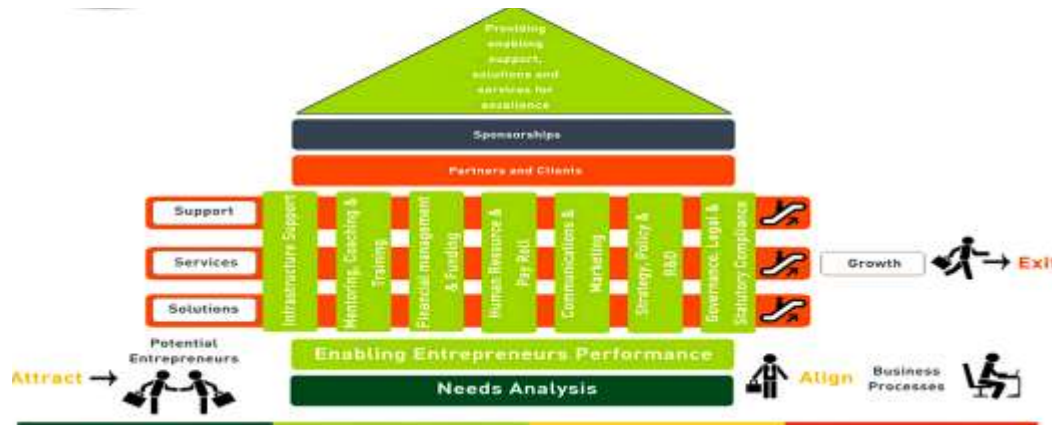


Figure 4. Case B incubation model. Source: Case B website.

require". [P 3: Case B-B1.rtf - 3:4 [We only give support to NTBFs ..] (10:10) (Super)]

Graduation stage

The graduation committee makes the final decision on the graduation of NTBFs. This committee is made up of the board of directors and the sponsors of the UTBI (Figure 4).

Case study C

Case C is a unique institution within the STP group of business-support organisations owing to the fact that it is the first South African business incubator that hosts mixed manufacturing technologies under one roof. This model serves as a one-stop solution to solving the problem of entrepreneurs who do not have the necessary business and technical skills, along with a lack of access to supporting resources in the manufacturing sector. The concept was born from talks between STP, the National Small Industries Corporation (NSIC) and the Brazilian Micro and Small Business Support Service (SEBRAE). The establishment of the concept in 2008 was driven by the UTBI manager.

Pre-incubation stage

Three times each financial year the UTBI pursues a marketing campaign, whereby potential entrepreneurs are invited to apply for the UTBI's programme. Each individual is screened and interviewed and only the most promising individuals are inducted into the programme. The selection of only the best candidates is important to the success of the programme, as a high level of achievement, motivation and determination is necessary to meet the programme's rigorous demands and the post-training demands of an entrepreneurial business.

Incubation stage

The training programme runs for four months on a full-time basis. During this time each NTBF is provided with business and entrepreneurial training twice a week, and technical training three times a week. Assessments are conducted after each module of training is completed in order to ensure that NTBFs are competent on machinery and business skills. Once the training period has been completed, successful NTBFs are assisted in completing a quality, bankable business plan, and are linked to financial institutions and supporting organisations. Each NTBF is monitored on a regular basis to identify and solve any problems that may be experienced before such problems can lead to failure. Once an NTBF has been successfully financed, Case C facilitates and assists in the acquisition and installation of machinery. The UTBI further provides mentoring and coaching services combined with incubation services during NTBFs start-up for an agreed time after start-up to help ensure the lowest possible failure rate for NTBFs (Figure 5).

Therefore, the respondent in this case elaborated the incubation model:

"You see how our model works; we have your skills development program that runs for 3 months. From those 3 months, 120 people are taken to undertake skills development program. From that 120, we know we have 96 that will pass. There are still no NTBFs; they do not have an idea what they want to do as far as the product is concerned. Based on the skills development program they have 9 months to make a decision; that is the pre-incubation, which is right at the establishment phase. Then we have the incubation stage when they register the company, get funding, get a market etc and that is the incubation stage. Then we have what we call post-incubation stage. So, yeah it's different. We work with that we create. That is the primary objective. And then only in April we are opening the existing manufacturing

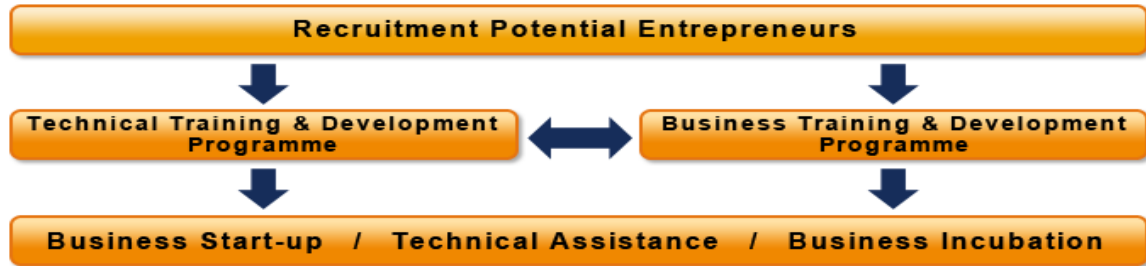


Figure 5. Case C incubation model. Source: Case C website.

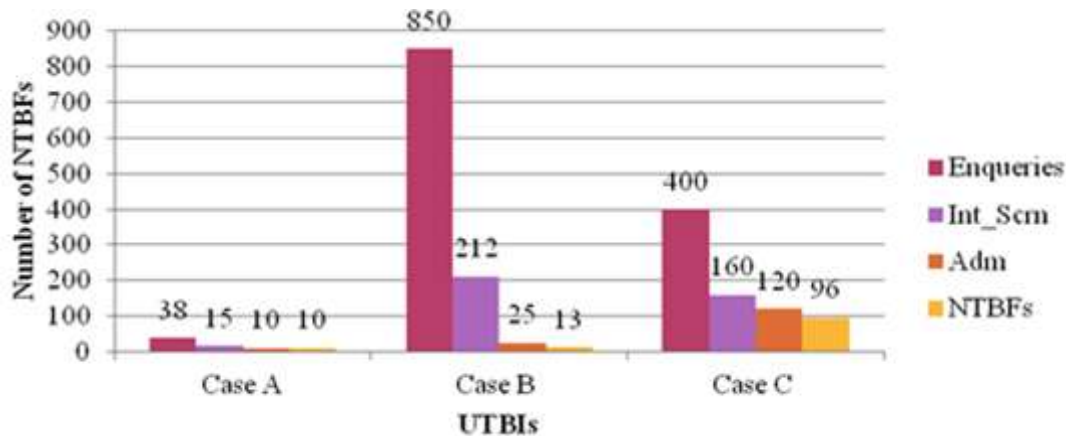


Figure 6. UTBI screening practises.

businesses” [P11: Case C C4.rtf - 11:4 [You see how our model works, i..] (16:16) (Super)].

Graduation stage

The duration period for NTBFs is three years, which is divided into three stages –the pre-incubation stage, incubation stage and post-incubation stage.

Cross-case comparison

According to Eisenhard (1989), the key to a good cross-case comparison is counteracting these tendencies by looking at the data in many divergent ways.

Stringent selection and admission criteria (P1)

The analysis of the interviews across the cases found three codes within the selection family, namely selection criteria and screening, selection panel, and incubation contract. Selection criteria and screening were found to be the most important enabling factor amongst the codes identified within the selection family. This suggests that

stringent selection criteria will ensure that the UTBI selects NTBFs that will graduate successfully and on time.

The following quotes demonstrate a range of views and beliefs held by a management team on the significance of selection criteria screen:

“...We put them through an entrepreneurial test, we give them a questionnaire and ... that qualifies them whether they will be accepted into our programme. We start with the information sections, right! Let me give you a background; we start with information sessions, right! People that are interested we give them information of what we do here and they fill in a questionnaire and from that questionnaire, right, em, em’ they get a call for an interview. The interview then determines if they can become part of this intake for students or NTBFs that will attend our classes” [P 8: Case C C1.rtf - 8:9].

Figure 6 presents the screening factors the UTBIs used to evaluate potential NTBFs graphically.

Company check-sheets or assessment forms have been developed and are used to minimise risk in the selection process (Ascigil, 2006). The stringent selection and admission criteria are a significant factor and positively

influence the graduation of NTBFs in an UTBI. These results are in line with the enabling factors that influence the graduation of NTBFs. Stringent selection criteria thus influence the graduation rate of NTBFs within the UTBI.

Access to business support services (P2)

The analysis of the interviews found six codes that are associated with the business support family: entrepreneurship education and training, access to markets and marketing, international trade assistance, legal registration and compliance, mentoring/coaching, and product design. These are commented on in greater detail below. Entrepreneurship education and training is provided by the UTBIs, which are mostly affiliated to universities in order to develop a spirit of entrepreneurship in the community (Ghasemizad, 2009). For that reason, this code is directly quoted by the interviewee from the cases analysed:

“As colleagues, we also need to be mentored or trained on what we do. So it is one thing that the university should look at and also we as facilitators of these entities” [P 4: Case B2-B2.rtf - 4:3].

The markets in which NTBFs operate are competitive (Löfsten and Lindelöf, 2002), but UTBIs are less “time sensitive” than the private incubators in terms of reducing the time-to-market of NTBFs (Hallam and DeVora, 2009). With regard to access to markets and marketing, comes out to be related to only two cases which are Cases A and B. As corroborated by the respondent in these cases:

“At the moment we are working with some... jewellers that take on the goods or – products that NTBFs produce on consignment. They take products and keep them in a shop you know and they can sale them on a mark-up. We have a shop in Pretoria, a shop in Johannesburg and locally we still work on some, but other than that we also run initiatives like going to the shopping malls and polishing jewellery and exposing them to other segments .We have such initiatives to expose them to more market segments; not only to be exposed to only one” [P 1: Case A A1.rtf - 1:92].

The management team highlighted the importance of international trade assistance to NTBFs. In the words of the Case A manager:

“... We do exhibitions, for example, NTBFs will go to London Fashion Week and obviously they will be able to market their product, but that is through the DTI because on our own and NTBFs on their own its very difficult to actually access such markets. But what we are also doing at the moment, two of our officials within the incubator have gone for international export trade, export

markets training last year and they are currently working on different proposals so that our NTBFs will be able to operate in international markets” [P 1: Case A A1.rtf - 1:93].

The management team pointed out the importance of legal registration of NTBFs among other factors that contribute to the graduation. Legal registration of the company comprises tax-clearance forms, industry regulations and proper registration of the company at the Companies and Intellectual Property Registration Office (CIPRO). As manager A1 remarked:

“If I am saying industry regulations, I am talking about, you know, compliance issues like with the regulator and am am’ Jewellery Council, and after that we basically channel the person in getting the right requirements over and above the company requirements in the jewellery, you know” [P 1: Case A A1.rtf - 1:77].

Mentoring can also lead to business opportunities and referrals for the NTBFs (Davies, 2009). On the other hand, coaching is described as involving seminars or programmes offered either for a fee or free of charge to the NTBFs (Peters et al., 2004). The management teams mentioned the need of mentoring and coaching:

“Case A offers the right equipment combined with correct training and mentorship” [P 5: Case A Business Concept.rtf - 5:12].

“Head office provides workshops, training and coaching to NTBFs” [P 3: Case B-B1.rtf - 3:11].

“NTBFs are monitored on a regular basis, there is coaching and mentoring done. Okay, when we do coaching and mentoring we have NTBFs coming in every Friday. Therefore, NTBFs are obviously here every Friday. Both in business development and technically we have coaching and mentoring on a regular basis” [P10: Case C C3.rtf - 10:15].

Better product design leads to a greater possibility of success in the business. As mentioned before, the markets in which NTBFs operate are competitive. As a result, business support of product design will enable NTBFs to graduate on time. As manager C4 stated:

“We put them in touch with the Technology Innovation amm mm Technology Innovation Agency (TIA) in terms of tooling. For example, SEDA provides a lot of staff like your branding, marketing, amm you know in terms of product prototype development. SEDA is our biggest partner” [P11: Case C C4.rtf - 11:13].

The above quotes perhaps highlight a number of factors associated with the business support services. Therefore,

these services are significantly and positively related to the graduation of NTBFs.

Access to university entrepreneurial network/mediation (P3)

Networks are perceived to be a critical element in the incubation process (Soetanto and Jack, 2011). Networking may involve linking business together, linking individual entrepreneurs together, or connecting entrepreneurs with providers of crucial resources (Hallam and DeVora, 2009). Within the entrepreneurial network\mediation family, this study found five codes, namely external networks, funding network, internal network, link to strategic partners, and link to the university, as described below.

Internal networks refer to the relationship among NTBFs (Soetanto and Jack, 2011). By locating NTBFs under one roof, incubators create opportunities and an environment conducive to them interacting and creating synergies (Abduh et al., 2007; Hallam and DeVora, 2009). As noted from the interviewees:

“We have in-house networking during the incubation process” [P 3: Case B-B1.rtf - 3:12].

External networks refer to the firm's relationship with other institutions such as a university and/or research centre (Soetanto and Jack, 2011). This external network provides services that are not offered by the incubator and helps incubatees to establish contact with universities, government and future investors (Hallam and DeVora, 2009). Manager A1 talked about the external networks that they provide for NTBFs:

“...The types of network are basically determined by the skills, expertise and the gaps that the NTBFs come with, and we are then able to say they need this type of engagement, they need this type of network, you know” [P 1: Case A A1.rtf - 1:90].

Some managers highlighted the importance of linking to strategic partners. They argued that having Memorandums of Understanding (MoUs) with strategic partners have an influence on the graduation of NTBFs:

“SABS (South African Bureau of Standards) – we are currently working on our International Standard Organisation (ISO) compliance certificate and we have quite strong ties with them through the SEDA provincial office and the national office. We have ties with Productivity South Africa – they engage with our NTBFs on an annual basis. They look into compliance in terms of productivity and participating in their competitions. In addition, yeah ... the types of networks and relationship in terms of their documented, we don't have document types of

relationships. We have MoUs with Anglo Platinum, which is the Anglo American Platinum Division where they develop our SMMEs and they have direct impact on SMMEs that are incubated and we have MoUs with North West Province. We have MoUs with the Bojanala district municipality and they also serve on our board. The Local municipality we engaged with them on a regular basis. We have specific relationships. They are sustainable and based on common supply and demand curves with the sector value chain” [P 1: Case A A1.rtf - 1:97].

The UTBI's university linkage plays an important role in providing the infrastructure support and the necessary value-added contributions critical for nurturing such businesses (Mian, 1996b). Links with universities are underlined in the literature as a decisive factor for success (Tang et al., 2010). Technology stations located at the universities, which have cutting-edge technology, are of major advantage to the graduation of NTBFs. The location of technology stations at UoTs points to the importance of these universities in the development of technology-intensive small firms (Ndabeni, 2008). This was also affirmed by all three cases:

“... I will be honest, we have worked with TUT, with which we sort of concluded a MoU last year, and we engaged with Central University of Technology (CUT), engaged with Harmony Jewellery School, which is a college within Witbank. We have engaged obviously here with Orbit College and we sent a few request to Cape Town universities, the one that has a jewellery school. I think its Western Cape or something. And Durban University of Technology (DUT) in Kwa Zulu Natal just to sort of have some networks and be able to establish satellite offices that will be able to incubate jewellers that come out of the university or tertiary institution” [P 1: Case A A1.rtf - 1:94].

Funding networks, another element of entrepreneurial networking, were argued to be influential for NTBFs to access funding. As noted from the interviewees:

“So, the networking possibilities that we offer at the moment are funding linkages and production linkages in terms of the product accessibility into the market” [P11: Case C C4.rtf - 11:19].

University entrepreneurial networks thus significantly and positively influence the graduation of NTBFs.

Access to organisational resources (P4)

Most university incubators provide specialised resources, such as technical or other research capabilities that are not otherwise available to NTBFs (Todorovic and Moenter, 2010). Within the organisational resources family this study found three codes – infrastructure,

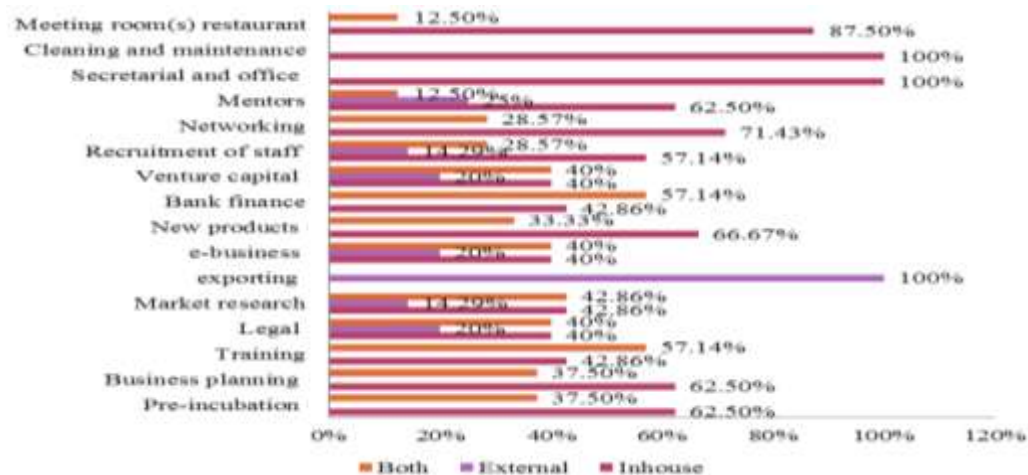


Figure 7. Services offered.

internet and physical resources.

The physical infrastructure includes rental spaces, equipment, administrative facilities like fax, phone and internet lines, and in certain cases labs, conference facilities and so on (Peters et al., 2004). As manager B1 stated:

"We offer the NTBFs the offices, electricity and a platform to discuss their business. However, sometimes our internet is slow and not working" [P 3: Case B-B1.rtf - 3:8].

On the other hand, managers interviewed pointed to the importance of the internet. NTBFs use the internet for research purposes. In the words of a management team:

"They have access to internet services here, am' they free to come in and to speak with us about any problem and, like I said, we are here for mentorship as well all the time" [P 8: Case C C1.rtf - 8:24].

Physical resources represented the physical characteristics of the UTBI, including the size of the incubator (leasable space), age and shared resources like office equipment and machinery. For example, manager C1 stated:

"Am' what we do we are up to date in what we offer them here, like roof-sheeting manufacturing, toilet papers, printing, etc. and chemicals, okay" [P 8: Case C C1.rtf - 8:36].

Figure 7 gives a clear picture of the services offered to NTBFs. NTBFs of the three UTBIs have a wide range of services at their disposal.

For this research, it is assumed that organisational resources are significantly and positively related to the graduation of NTBFs.

University administrative and legal policies (P5)

Administrative and legal policies, including selection and graduation policies were reported on. In the selection policy, in some cases NTBFs were encouraged to register for a qualification or produce a range of skills. Clear recruitment policies must exist to run this stage effectively so that the incubator eventually supports and funds sustainable long-term profitability (Ascigil, 2006). The graduation policy is generally kept flexible, but has an optimal period of three years. IT-based software may take less time to move from pure ideas to actual commercialised products in comparison to a hardware-based product or an agricultural product (Al-Mubarak and Wong, 2011). During the graduation period, the graduation committee decides which NTBFs will graduate based on set measures. After the expiry of this period the rent was raised. Hence, university administrative and legal policies will have a negative influence on the graduation of NTBFs

Access to financial resources (P6)

Generally, NTBFs need and require financial support for their businesses. Within the financial resources family, this study found three codes associated with the financial resources, namely financial loans, financial support and financial grants. However, NTBFs do not have records of accomplishment on which banks may base their lending decisions (Zhang and Sonobe, 2011). In these circumstances, the only way to get started is by the founders providing the finance personally (Löfsten and Lindelöf, 2003). Regrettably, none of the cases provides financial support to NTBFs in the pre-incubation and the incubation stage.

"...For a business to actually take off we don't, we don't"

priorities on financial support. Our priority is the ability to run the business” [P 1: Case A A1.rtf - 1:83].

Access to financial resources will positively influence the graduation of NTBFs.

The nature of incubation changes according to:

1. The varying resource needs of the tenant firm over the duration of the incubation period
2. The tenant firm’s industrial affiliation

As has become clear, the incubation process has three stages. In the pre-incubation stage, the UTBIs provide the following enabling factors: stringent selection and admission, and pre-incubation services. During the incubation stage the UTBIs provide access to business support services, financial resources, organisational resources and university entrepreneurial networking/n mediation. During the graduation stage, UTBIs provides the graduation exit strategy, graduation rate and the incubation period. The present research contributes to the literature on university entrepreneurship, particularly the research stream on new firm creation (Rothaermel et al., 2007). The study attempts to link the development of business ideas to factors that influence their progression into graduated businesses. The findings have provided an insight into the enabling factors that might influence the graduation of NTBFs (Figure 8). This expanded theoretical framework highlights the incubation stages of UTBIs and, most importantly, what each stage constitutes. On examination of Figure 8, it becomes apparent that infrastructure is part of business support and that financial loans are associated with financial and organisational resources. Financial support is in addition, a part of entrepreneurial network/mediation.

The theoretical framework depicts the incubation stages of pre-incubation, incubation and graduation. A pre-incubation stage has also been included in Figure 8 as an enabling factor. The study found that within the pre-incubation stage there are two most important enabling factors that could influence the graduation of NTBFs, namely stringent selection and admission criteria, and pre-incubation services. The figure depicts that incubators have some form of application/screening process, and that service is present during the pre-incubation stage. The pre-incubation service contributes to the graduation of NTBFs and could be a positive motivator for the early growth of NTBFs. Hence, this aspect is also strongly established and all the three research cases supported this enabling factor.

However, the study also found that during the pre-incubation stage UTBIs do not provide financial assistance to NTBFs:

“In the pre-incubation stage, we do not have financial support. It’s just administrative support that we offer. Apart from linking them to our sponsor, we have got

agencies that would finance pre-incubation processes of good ideas” [P 4: Case B2-B2.rtf - 4:30].

With regard to the incubation stage demonstrated in the Figure 8, the study found four main enabling factors that might influence the graduation of NTBFs, namely business support, university entrepreneurial network/mediation, and financial and organisational resources. Within the graduation stage, as shown in Figure 8, the study found the following enabling factors that are important to the graduation of NTBFs: graduation exit strategy, graduation rate and graduation incubation period. The graduation rate of an incubator is related to the question of how many UTBI client firms have used the services offered over the years, and have continued their operations after ceasing the use these services (Science Alliance, 2007). Graduation policies should include time limits and the type/amount/value of services that would be provided by the incubator during the incubation process (Scaramuzzi, 2002). However, some incubators do not formulate their graduation policy clearly – the NTBF has a say in choosing the moment of graduation, or the graduation is related to the question whether or not private equity has been obtained (Science Alliance, 2007). Most university incubators have only two processes, pre- incubation and incubation (Farsi and Nikraftar, 2011).

This study also contributes to the literature on the incubator-incubation discourse, specifically within the context of developing countries like South Africa. Most studies that have investigated the factors influencing the success of incubators to date have been conducted in developed countries such as the US, Germany and Italy.

DISCUSSION AND IMPLICATION

This research has implications for both industry and government strategies. Managers should promote the efficiency of the triple-helix model of academic-industry-government relations, as suggested by Etzkowitz et al. (2000), which enhance the role of technological innovation. For instance, university incubators should have connections with agencies outside the university for finding financial support or for introducing the businesses to related agencies after the incubation period that could provide additional support. Further, by understanding the individual components of the theoretical framework, managers will be in a better position to make decisions concerning NTBFs and thus positively influence the timely and successful graduation of NTBFs. University incubators should operate independently from their institutional administrative and legal policies. In conclusion, management teams need to be specific in their selection policy, the incubation contract and the exit strategy in order to graduate NTBFs on time and successfully. On the other hand, NTBFs should pursue strategies that

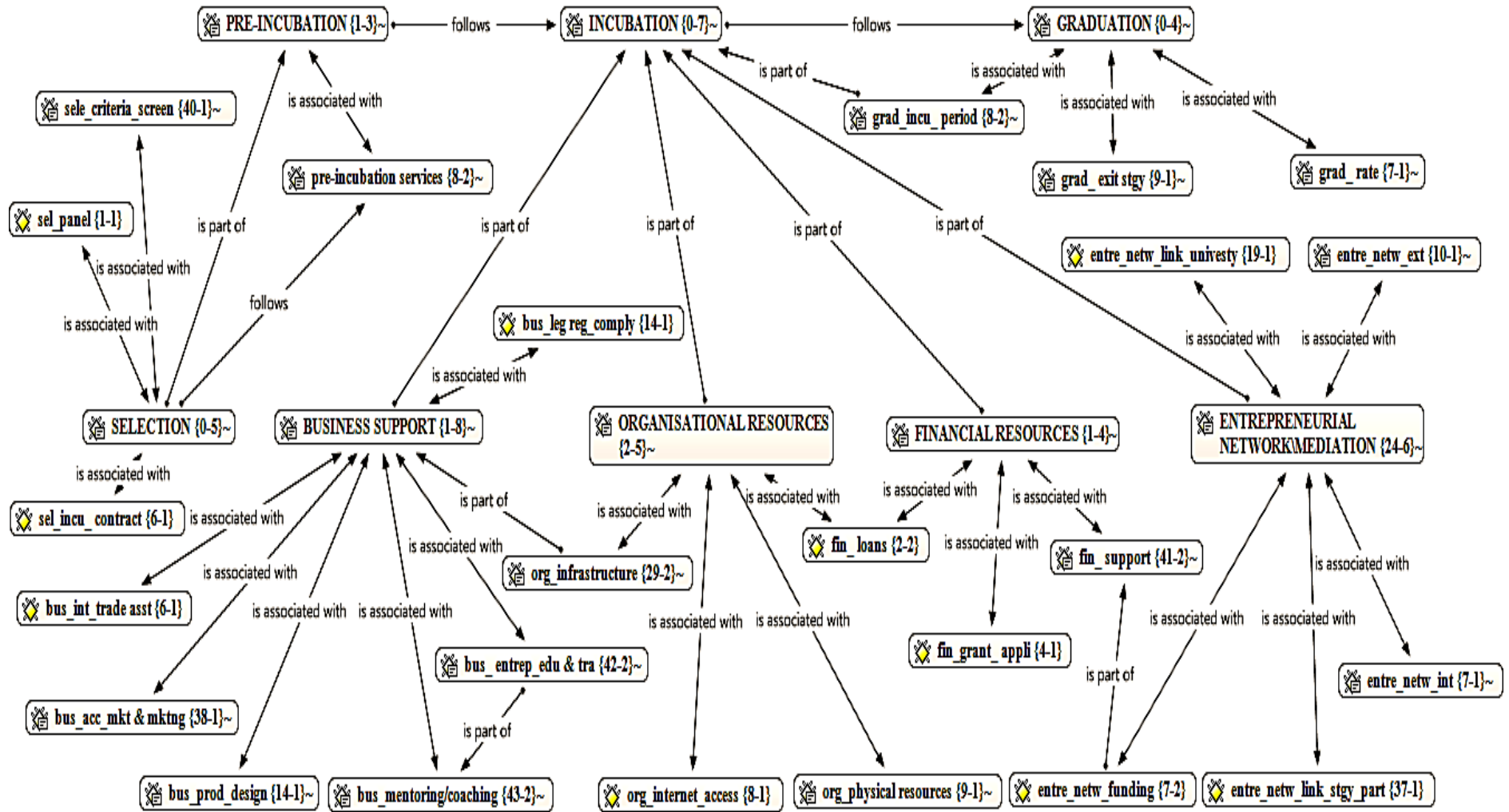


Figure 8. Proposed theoretical framework of factors that influence the graduation of NTBFs.

networks with external resource holders (such as the universities but also other firms etc) in order to succeed (Löfsten and Lindelöf, 2005). Government may be able to improve on efforts to access financial resources. For instance, they could be in a position to offer either a raw-material loan, such as metals, fabrics, etc., for the production requirements of NTBFs, or very low interest rates with a very long period of return as a means of sharing the risks of investing in NTBFs. The final managerial contribution of this study is that the study could serve as a guide for business managers and policy-makers in South Africa when creating policies relating to incubation in general.

CONCLUSION AND FUTURE RESEARCH

South Africa is characterised by having two incubation movements, namely technology stations and business incubators (Ndabeni, 2008). The technology stations programme was developed by the Department of Science and Technology to strengthen and accelerate the interaction between technikons and SMMEs (Ndabeni, 2008). All the technology stations are located at UoTs. XXX UoT hosts three of them (Ndabeni, 2008).

This study found five enabling factors that might influence the graduation of NTBFs. The enabling factors such as selection and pre-incubation services are related to the pre-incubation stage. Business support services, university entrepreneurial networks/mediation, and financial and organisational resources are part of the incubation stage. Within the graduation stage the study found the following enabling factors important to the graduation of NTBFs: graduation exit strategy, graduation rate and graduation incubation period.

The findings of this study provide a theoretical framework for UTBI managers to be successful in establishing high-growth businesses. Each research issue tested was discussed in terms of its connection to past research and its advances from that research. The limitations and implications of the research were addressed, and suggestions were made for future research. The study has highlighted the enabling factors that could influence the graduation of NTBFs within an UTBI. The study has concluded that a number of factors are a pertinent to the graduation of NTBFs. Firstly, the study's limitations could be addressed to further the capacities and the accuracy of the study. Specifically, it would have been optimal to include the perspectives of NTBFs in order to validate the responses given by UTBIs. The sampling additional UTBIs would also have been preferable to allow for a larger and more diverse sample. Second, future research could adopt longitudinal study surveys conducted in multiple incubators, preferably in both traditional and UoT NTBFs. This would have made it possible to gain greater insight into the incubation process and would also have given valuable insight into the development of NTBFs.

Third, it would be useful to investigate incubation

stages and resources to a greater extent since the nature of incubation changes according to the varying resource needs of NTBFs over the duration of the incubation period and according to the NTBFs industrial affiliation (Ahmad and Ingle, 2011). Hallam and DeVora (2009) have commented that the services required by incubatees will change over time as a consequence of the firm's development phase. Interestingly, a mixed method utilising a longitudinal study would look at resource allocation in terms of the incubation stage and how it influences the graduation of NTBFs.

Fourth, successful and timely graduation does not guarantee long-term success (Rothaermel and Thursby, 2005b). The incubator's responsibility and role in achieving sustainability should not end with graduation (Ascigil, 2006). For this reason, future involvement by UTBIs should go beyond graduation, which is clearly an important milestone in the development of a new venture, but investigate the performance of these ventures post-graduation (Rothaermel and Thursby, 2005b). An important question concerns the extent to which UTBIs provide for graduated firms. A similar analysis can be enlightening for technology stations. Another research area for future development could be the conduct of a meta-analysis to identify and rank the enabling factors that influence the graduation of NTBFs within the UTBI. Finally, further research could also be conducted to provide academic evidence as to whether the commercialisation of NTBF products could influence their graduation. It would be interesting to understand the diffusion of university products and how these are adopted in the market using Rogers' (2003) diffusion of innovations model.

Conflict of interest

The authors has not declared any conflict of interest.

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Full Length Research Paper

Microcredit, asymmetric information and start-ups: An Italian case study

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The paper aims to investigate the topic of microcredit with regard to the creation of start-ups, with a view to revisiting the principles, contrasting the informative asymmetries of the bank-company relationship. In this way, the objective is to propose integration of the existing literature, mainly resorting to the academic community and the actors of microcredit, through the offer of reviewing some principles contained within it, as well as the loan process of start-ups. The research approach is based on the multi-method approach for data collection (open interviews, direct observation and open sources), with the inclusion of a single case study.

Key words: Start-ups, microcredit, informative asymmetries, microfinance, gatekeepers.

INTRODUCTION

This paper investigates the function of microcredit with regard to the creation of start-ups, with a view to revisiting the principles, contrasting the informative asymmetries of the bank-company relationship.

Starting with the experience of the Grameen Bank, founded by Muhammed Yunus, microcredit has been diffused with the objective of providing liquidity to the entrepreneurial and social initiatives set up in poorer countries (Yunus, 2007), and also in the form of loans for the development of innovative projects (Teece, 2010) in the rest of the world.

The microcredit programme developed by Yunus and his model of social company, confirm on an international level, the principles on which the business initiatives, activated in poor countries, lead to the economic and

social progress of community (Yunus, 2004). This model activates investment in trust and reputation faced with the granting of an individual or group loan, requesting moral guarantees rather than personal financial guarantees.

So, the analysis of literature is based on the theory of microcredit (Armendàriz de Aghion and Morduch, 2005), including his principles and problems related to funding of start-ups (Gartner et al., 2012), focusing attention on the bank-company relationship (Firth, 1977), influenced by informative asymmetries (Akerlof, 1970).

The objective is to propose integration of the existing literature, mainly resorting to the academic community and the actors of microcredit, through the offer of reviewing some principles contained within it, as well as the loan process of start-ups: the latter are catalysts of

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informative asymmetries due to the unclear informative nature that characterizes future cash flows generated by company activities.

The research approach is based on the deductive-inductive method, with the inclusion of a single case study, related to the project "Prima Idea" activated in 2011 by an Italian credit institution.

Similar to developing countries, where microfinance activities help people in activating economic and social progress, like the start of businesses, in developed countries (such as Italy), loans within the microfinance context assist young people or aspiring entrepreneurs in creating new business. These are people without financial resources who are able to provide moral guarantees.

In this direction, the case study introduces principles coming from microfinance field through an Italian bank initiative, in order to verify their existence applied to the beginning phase of a new business activated by young entrepreneurs. So, people coming from developing and developed countries are similar when they decide to start a business.

Moreover, informative asymmetries are the same in microfinance process of developing and developed countries and the case study aims at reducing the lack of collateral in obtaining funds.

Furthermore, the case study aims at proving that the loan of innovative start-ups, according to the principles of microcredit, generates wealth for the territory in question and for the community.

The use of the multi-method approach for data collection (open interviews, direct observation and open sources) and confirmation of data through the triangulation method lead to the identification of new elements proposed by the case study. In particular, among the different procedure related steps of the initiative in question, evaluation and selection provide an important contribution for greater conceptualisation of the supply process of microcredit and its principles. The creation of an assessment commission, consisting of gatekeepers, recognized in the academic and banking figures and in the world of entrepreneurs, guarantees the assessment and approval of start-up initiatives, as well as the bank-company relationship of informative asymmetries. From here, the characteristics of the Prima Idea project refer to the phenomenon of microcredit, promoting the idea of reviewing some of the main doctrinaire principles.

The article has the following structure. After the introduction, section two provides a brief literary analysis of the microcredit theory, the forms of informative asymmetries in the bank-company relationship for the funding of modern start-ups. Section three describes the research approach. Section four proposes the case study related to the "Prima Idea" project. Section five presents discussions related to the case study and implications on research. Section six illustrates the conclusions, the limitations of the study and suggests future research.

THEORETICAL BACKGROUND

The theory of microcredit

According to the theory of microcredit, granting of small loans to poor people or to people without any form of sufficient financial back-up, to launch entrepreneurial activities, includes paying back of this amount in several instalments, without having to provide any financial guarantees.

Microcredit was born in poor countries with the objective of alleviating economic unbalances and to promote social progress towards the supply of small loans (Bashir et al., 2013). Birth of the Grameen Bank, taking care of failure of financial services and the institutional policies of poor countries, has defined the following principles:

1. customers from micro-finance institutions are mainly women and they handle loans with a view to re-invest the amounts of money received;
2. the creation of groups of customers, with no joint responsibilities, for access to credit is obligatory;
3. the payment periods are characterised by short periods of time;
4. no collateral guarantees exist in granting of loans;
5. relationships of trust with customers are favoured, as well as the infliction of implicit fines in the case of non repayment of the loan. In this case, an example is non-admission to the subsequent tranches of the loan.

In developing and developed countries, the emission of small loans for the activation of modern entrepreneurial projects has become a strategic factor of success, especially during the set-up stage of the initiative itself (Myers and Majluf, 1984).

The models of microcredit recognised in the doctrine are the following:

1. informal traditional. It is granted by local money lenders, pledges, friends and family and for consumer credit;
2. group loans of the informal credit market;
3. small loans provided by traditional banks or credit institutions such as cooperative credit institutions, popular banks and savings institutions diffused throughout the world;
4. Grameen bank model;
5. non-governmental bank-organisation partnerships.

Supply of microcredit is carried out according to peer lending and individual lending methods.

The first funding method was created with the joint liabilities model proposed by the Grameen Bank. It corresponds to the method of loan emission in favour of an entrepreneurial group. Its characteristics include the emission of small amounts of money, for a short period of time, the absence of kinship between the beneficiaries of the microcredit, belonging of the beneficiaries to the

same community, the execution of different economic activities funded by the microcredit.

The loan is granted on a rotation basis or at the same time as the loan received by other members of the group: each participant receives a loan when a loan granted to another member of the group expires (continuous sequence method) or at the same time as the others receive the loan.

With confirmation of the Grameen Bank paradigm, all of the participants act as guarantor of the loan received by the group, with the aim of guaranteeing individual non-fulfilment; with this method of emission of the loan, interest rates for the loan are high. Furthermore, it is possible that the credit institution activates recovery programmes.

Individual learning is among the most ancient forms of microcredit, used in developed countries and in developing countries of Latin America. The emission of small loans is associated with the supply of adequate guarantees. Morduch and Armendariz (2004) sustain that micro-finance is extended to this method of loan emission to companies, even if Yunus's idea of social activity has been replaced by that of a profitable activity.

Hermes and Lensink (2007) investigate into the methods of granting of loans by micro-finance institutions, highlighting acceptance of the layout of individual liabilities compared with those of a group.

Furthermore, the Indian microcredit model exists. It provides for granting of micro-credit in favour of groups mainly consisting of women (Self-Help Groups), who administer the loan within the group itself. The beneficiary groups of the loan are connected with rural banks.

Further studies investigate the theory of microcredit and its principles, analysing the economic conditions of those who resort to this form of loan in under-developed countries. Pitt and Khandker (1998), as well as Johnson and Rogaly (1997) have highlighted an improvement in living conditions in poor countries, as well as a growing accumulation of activities and capital due to the supply of microcredit.

Morduch (1999) investigates the function of microcredit with regards to poverty, highlighting improvements in economic conditions due to the emission of small loans. Further literature analyzes business opportunities that customers are willing to develop through the concession of a small loan.

Banerjee et al. (2013) identify in entrepreneurs who have already launched a business, the possibility of using credit to increase the size of their activities; in other cases, the entrepreneurs that need to start a business, tend to use consumer credit of another kind.

Basher (2010) investigates the effects of relations between entrepreneurial initiatives and the granting of loans according to the rules of microcredit. Funding of start-ups depends on their real possibility of development in the market (Gartner et al., 2012; Singh and Janor, 2013). In this scenario, the innovative nature is interpreted

as a combination of ideas and routine activities (Schumpeter, 1934), or the discovery, in another form, of the opportunities available on the market (Kirzner, 1997) for the offer of products and services.

The revolution of microcredit announced by Robinson (2001), the statement made by the United Nations in 2005 and the Nobel Peace Prize to Yunus in 2006, introduce the importance of construction of a relationship of trust between a credit institution and a company, also guaranteed by the reputation of the entrepreneurs. In Italy, a public law authority exists (National Authority for Microcredit) that deals with the promotion of development of these relationships. In this regard, with legislative reforms made (Leg. Decree 169/2012), they have defined criteria and limits (a maximum of 25,000 euro for a micro-company and 10,000 euro for social requirements) that qualify microcredit as such, allowing for forms of assistance for the beneficiaries of the loan and a list of funders with the Bank of Italy.

Finally, studies exist such as the ones carried out by Besley and Coate (1995) and Wydick (2001) that investigate into the role of social relations between members of the entrepreneurial group benefitting from the microcredit.

The role of informative asymmetries

The relationship between a credit institution and a company is influenced by the presence of informative asymmetries (Almeida de Faria and Gomes da Silva, 2013; Akerlof, 1970). They derive from an informative unevenness compared with the success of the investment in the start-up project. The entrepreneur has an informative advantage with regards to the value of the project and the commitment to achieve the initiative and the desired result.

Problems deriving from informative asymmetry are fixed to the phase that the bank-company relationship is going through. Three steps can be recognized (Guttman, 2008):

- a). the start-up project must be created (the early stage);
- b). the start-up project has been launched;
- c). the start-up project has been completed.

During the early stage (a), the mechanism of adverse selection intervenes (Robinson, 2001). The credit institutions find it difficult to understand the risks deriving from funding of the start-up. The latter is characterized by a high level of precariousness with regards to future cash flows generated by the innovative entrepreneurial project. The informative asymmetries act as a barrier, complicating the assessment with to how much and how to fund the start-up of the activity. Application of interest rates by credit institutions intervenes according to the default risk of the project funded (Stiglitz and Weiss, 1981). The credit institution increases its interest rates, together with an increase in the level of risk of the investment, the

number of transactions and costs borne to issue the loan.

The interest rates affect the entrepreneurial risk in two ways: as the rate increases, adverse selection also increases; higher market prices discourage even the most convinced of investors; due to the effect of informative asymmetry, the individuals receiving the credit are isolated from the risk and, therefore much riskier initiatives are normally undertaken with greater payoffs when success is achieved.

Further implication of informative asymmetry descends from moral hazards according to the principles of the theory of agencies and separation between property and control (Jensen and Meckling, 1976). Once the loan has been granted (b), the moral hazard intervenes in the relations between the bank-company through release by the entrepreneur in completing the investment activated due to the loan received. In this case, the entrepreneurs are isolated from the risk because, as they are not providing financial guarantees, they can violate any contractual regulations, focusing their attention on much riskier initiatives.

The enforcement of financial guarantees stimulates entrepreneurs to pay back the loan.

The simulated failure of a start-up (c) is materialized in non repayment of the loan received from the credit institution. The proceeds achieved by the investment are concealed.

The credit institutions face informative asymmetry through a request for financial guarantees to face funding of the start-ups. This system is presented as an entrance barrier for entrepreneurs without any form of financial back-up.

In the context of microcredit, according to the Grameen Bank model, moral guarantees are considered very important (Sonne, 2010).

Part of the literature suggests reshaping of the problems related to informative asymmetries through funding with action of the entrepreneurial initiatives: the companies that innovate, in reality, appear to resort to share capital (Aghion et al., 2004). Credit institutions face the problem of moral hazard by helping debtors undertake risks that do not compromise bank profit. According to Morduch (1999) informative asymmetries are reshaped due to the repetitive nature of interaction between the parties, including repetition of payments to pay back the loan. Once again, with the introduction of notional collateral, the entrepreneur provides financial guarantees in order to guarantee the bank against failure risk simulated by the start-up. Under the impulse of this orientation, strengthening of shared screening and monitoring activities contrasts the adverse selection and moral hazard mechanism (Ghatak, 2000; Armendáriz de Aghion and Gollier, 2000; Stiglitz, 1990). Literature suggests termination of the conflict of interests between bank and company through the introduction of entrepreneurs into the deposit banking system, therefore their introduction to the banking system as shareholders.

With regard to the principles of microcredit, the informative asymmetries are reshaped by the granting of group loans (Guttman, 2007) and by the development of relational investments based on intangible dimensions.

With reference to the first aspect, belonging of several entrepreneurs to the same territory and their mutual familiarity represents an incentive for the creation of groups with reliable partners. In the Yunus model (Yunus, 2004), the creation of groups consisting of relations is prohibited owing to the joint liability condition within the participants. In fact, the presence of relations in the same group, in obtaining funds does not guarantee the bank. The credit institution is guaranteed against the risk of failure of the initiative through joint liability of the loan by the members of the entrepreneurial group. The Yunus model has undergone developments, including introduction of the group solidarity mechanism for joint entrepreneurial action. Granting of microcredit to fund innovative start-ups (Cassar, 2004) is based on relationships of trust and not only on economic action. Moral obligation by the entrepreneur to pay back and honour his commitments undertaken prevails. Furthermore, a profile exists that is connected with the reputation of the company that activates, on a territorial level: non repayment of the loan damages the reputation of entrepreneurs on the relative territory.

RESEARCH APPROACH

The research approach is based on an analysis of each single case study related to funding of innovative entrepreneurial activities, according to the principles of microcredit.

Through a deductive-inductive approach, the “Prima Idea” case study is introduced. It refers to a project activated in 2011 by an Italian credit institution (Banca Popolare del Cassinate or BPC), due to the ideative contribution of the university world (University of Cassino and Southern Lazio). The case study contributes towards improving existing literature, with a view to greater conceptualization of the principles of microcredit and contrasting the existing informative gap in relations between the bank and company. Therefore, special attention is given to the following aspects of the case study: the characteristics of the Prima Idea project for funding of innovative start-ups; comparison of the characteristics of the Prima Idea project with the principles of microcredit; the evaluation and selection model adopted by BPC for an assessment of the start-up projects (Delanoe, 2013), through the gatekeepers (academic and bank figures and the entrepreneurial world) to guarantee the success of the procedures.

Collection of the information has been performed through a research protocol that is extremely important for the elaboration and transfer of data, as recommended by Yin (1994). Precisely, the research protocol includes

the following steps:

1. the objective of the case study has been defined through a summary document of the project idea;
2. subsequently, the procedures for data collection have been defined, through definition of informative sources and research questions related to the case study. In particular, the work group consisting of four people has dealt with the definition of how to gain access to information, including the times and methods for definition of interviews; documents and some reports have been drawn up for data collection and comparison activities; a data saving procedure has been created with the objective of facing any possible unexpected events;
3. the guidelines for preparation of the case study have been defined, indicating the essential points of the narrative format of the project.

Acquisition of data has been performed through a multi-method approach that has allowed for sourcing of information through the following sources:

1. six open interviews were carried out in the head office of the bank during the period ranging from the start of the initiative in 2011 and April 2013. The interviews were registered using electronic equipment. The first interview involved the President of the bank, with the objective of understanding the reasons for the initiative: subsequently four interviews were carried out with the Marketing Managers of the credit institution in order to understand, apart from the reasons, the steps of the adhesion procedure to the initiative and the operative nature of the funding system; the interview carried out with the Trust Office Manager of the bank (also a member of the assessment commission of the start-up initiatives) was carried out with the objective of understanding the project selection procedure, the reasons related to the selection of initiatives and activation of the preliminary trust phase with regards to the start-ups selected;
2. an open interview was carried out with one of the two scholars of the assessment commission. The interview, registered using electronic equipment, involved the rector of the University of Cassino and Southern Lazio, with the objective of understanding how the gatekeepers work in selecting the start-up initiatives, identifying their differential contribution in academic figures;
3. direct observation of the data related to the case study has been carried out through participation in two public events of presentation and awards ceremony of the start-up projects approved by the bank and authorized for the funding. The events were held, respectively, in November 2011 (Think tank. Credit to youngsters for the growth of value) and in April 2013 (Ora et Labora et Lege);
4. in the administration offices of the bank all documents necessary for compilation of internal reports, including regulations of the initiative, minutes of the meetings of the commission and trust cases, prepared for the collection

of data related to the Prima Idea initiative were collected;

5. public sources were used such as the website of the bank and newspaper articles to interpret the objective of the initiative and to understand the thought of public opinion. Further investigations related to research into similar initiatives, created by other credit institutions on an Italian level.

The validity of the results illustrated in the case study is based on the triangulation approach, therefore on the comparison of different types of information collected compared with the sources used.

The case study introduces and verifies principles of developing countries' microfinance field through an Italian programme on loans for young entrepreneurs, by reducing informative asymmetries coming from the lack of collateral in obtaining funds and the absence of information about the new business. Moreover, the case study aims at proving that the loan of innovative start-ups generates wealth for the territory and for the community.

Case analysis

The study case refers to the Italian project "Prima Idea", launched by Banca Popolare del Cassinate, in collaboration with the University of Cassino and Southern Lazio, for the funding of modern projects by young entrepreneurs.

The initiative was born in 2011. According to details that emerged from the first phases of data collection, the emission of small loans, in analogy with microcredit, means promoting the scientific and technological progress of a territory, of entrepreneurial activities and of innovation, with a view to developing local economy and social wellness.

The technical characteristics of the project "Prima Idea", referred to in the first two interviews to the Marketing Manager and summarized in the web page of the initiative, available on the website of BPC (www.bancapopolaredelcassinate.it), are the following: the announcement for access to credit by the innovative start-ups has prepared a rotating plafond of euro 1,000,000, to be issued in twenty chirographic loans of 50,000 euro each for each initiative approved; the credit is granted to individuals of under 40 years of age for the development of entrepreneurial initiatives aimed at protecting the territory, development of the economy of knowledge and innovation, as well as social inclusion; the initiative does not consider interest rates or fee costs and the loan can be paid back in 10 years and can be integrated if the entrepreneurial project generates positive effects on employment; the individual plafond is doubled when the entrepreneurial project includes the employment of at least 5 individuals, employed by a fixed or temporary employment contract of no less than 18 months.

Table 1. Innovative start-up initiatives approved and funded according to each field of activity and year of approval.

Field	2011	2012
Sanitary	X	
Artistic creations		X
Musical (recording industry)	X	
Industrial production of additives and colorants for plastic material	X	
Export of products/web platform		X
Energy efficiency		X
Web Agency and communication office		X
Import/Export of clothing/technological clothing		X

Source: our elaboration based on data research.

According to details that emerged from subsequent interviews to the Marketing Manager of the bank, the Prima Idea initiative provides constant support to the birth and growth of new business opportunities that generate value, especially in the territory in which the bank, the university and the initiative funded. The funding mechanism, of a rechargeable nature, guarantees recreation of the plafond available for new start-up activities when each instalment of the loan granted is paid. The sourcing of data from different locations, including the regulations of the initiative, have allows for reconstruction of the stops provided for emission of the microcredit. The steps are the following:

1. submission of innovative start-up projects;
2. evaluation and selection of the projects by an assessment commission consisting of six members of the academic, banking and entrepreneurial world;
3. social meetings for presentation of the projects approved and awarded by the procedure;
4. trust procedures and emission of the loan. The selection of the projects approved according to step 2 implies the loan request, by the proponents, through activation of the preliminary trust case. This phase is followed by emission of the loan:

1. tutorials. The credit institution provides all of the entrepreneurial initiatives approved and funded with a tutorial system for the set-up of company activities.
2. Special emphasis should be given to the assessment and selection phase of the start-up projects, including the involvement of an assessment commission, created by the bank, in an analysis of different projects. Each start-up project undergoes a strict assessment project that guarantees both parties involved in the relationship.

The procedure for admission to the loan includes assessment of the entrepreneurial initiatives by six different professionals, recognized as gatekeepers: two academic figures, two entrepreneurs and two bank members.

The commission deals with the creation of assess-

ments of technical and economic feasibility of the business initiatives, guaranteeing their project validity, through assessment independence and the highly specialized competence of the commissioners, with a view to reducing the informative asymmetries between bank and company. Approval by the commission of each single initiative allows for young entrepreneurs without sufficient financial back-up to gain access to credit in order to launch innovative activities. The assessment commission was summoned officially six times during the period in question. As of 2013, twenty six projects were presented and assessed. Eleven initiatives have been approved: eight initiatives have been funded. From Table 1, it is possible to interpret the figures related to the projects approved and subsequently funded in 2011 and 2012. The classification provided below includes the field of belonging of the start-ups.

The assessment commission has drawn up punctual assessments of each project involved in the initiative, adding critical observations, according to each case.

The approval rate of start-up projects presented is 42%: approximately 73% of them have gained access to funding of the entrepreneurial idea. The kind of proponents is equivalent to 64% of males and 36% of females.

The start-ups created have undertaken the following legal form:

1. cooperative company (25%);
2. general partnership (13%);
3. limited liability company (25%);
4. sole trader (38%).

The amount of funds generally issued amounts to € 330,000. The recharging mechanism of the general plafond, provided by the bank, exists.

The interview with the Trust Office Manager, as well as the interview with the University Rector, was useful to understand that the assessment process of initiatives, based on an analysis of documentation requested by the Prima Idea project, have been supported by direct

meetings with young entrepreneurs. The young entrepreneurs have been asked to present documentation integrations to investigate the assessments made by the gatekeepers.

This aspect has also been assessed through an analysis of the minutes of the meetings held by the assessment commission.

As of 2013 there are no administrative irregularities registered and each start-up project approved and funded by BPC is duly being repaid. However, reconstruction of these flows covers a short term period of time.

According to indications provided by the rector of the University, as a member of the assessment commission, the university professors are used to investigating into the professional skills of the people that they normally interact with. Their ability to provide judgments is confirmed by feedback created in time. Even their skills of a sociological and anthropological nature are missing in other technical figures of the assessment commission. Teachers have knowledge related to the value of a project idea: this is regardless of the assessment of a purely financial nature. Therefore, meetings with young entrepreneurs allow for greater appreciation of the project idea and the skills of the applicants. In this regard, the rector has commented as follows (in Italian language): *"...the success or failure of an entrepreneurial product depends on technical skills as well as the project idea, managerial skills and the enthusiasm of the company"*.

From a comparison of the Prima Idea project of BPC with another two Italian banks (Start-Up Initiative by Intesa San Paolo and the Start-Up by Unicredit) the characteristics of these initiatives can be highlighted, identifying the distinctive elements (Table 2). The sources of information used for the collection of this data mainly originate from websites of the credit institutions involved (www.intesasanpaolo.com and www.unicredit.it). As far as BPC is concerned, open sources have been used as well as the data collected from the administration departments of the bank.

Table 2 shows that the Prima Idea differs from the other two initiatives. The mechanism that guarantees a rotating plafond is definitely the distinctive element par excellence, typical of the phenomenon of microcredit, together with the absence of financial guarantees, replaced by an investment in trust and by the interest rate.

DISCUSSION

This section highlights the distinctive contribution provided by this study and the methods with which it proposes a review of the existing literature.

The theory of microcredit focuses attention on the principles and effects that it generates with regards to the company, including funding of entrepreneurial activities. The principles of microcredit, in light of the analysis carried out, may be summarized as follows:

1. granting of loans, with reduced amounts;
2. granting of loans to poor individuals or without financial means;
3. granting of loans according to the state of progress of work and repayment in small fixed amounts;
4. high reimbursement rates (in modern conception);
5. absence of financial guarantees and presence of moral guarantees.

The informative asymmetries of the bank-company relationship confirm the level of uncertainty of future performance of the initiative funded by the bank, as well as the need to adequately assess the project related characteristics of the project to be funded. In reality, the start-ups represent the catalyst par excellence of the informative asymmetries due to the unclear informative nature of the financial data: it is difficult to predict future cash flows generated by initiatives with a high innovative and technological content.

The credit institutions defend themselves through an increase in the loan and the request for financial guarantees.

In light of this, an analysis of the study case allows us to propose a review to the main principles of microcredit, by virtue of the characteristics and the procedure related steps of the Prima Idea project of BPC.

In this hypothesis, the supply process of microcredit undergoes several forms of development, with a view to contrasting the problems related to informative asymmetries.

The case study refers to the principles of microcredit, emphasizing the assessment and selection phase that is vital to guarantee the success of the initiative promoted by the bank and the launch of new modern activities generating long term value.

In this regard, the judgment of technical and economic feasibility of the gatekeepers, recognised in the combination of the academic, entrepreneurial and bank figures, guarantees the success of the procedures, certifying the assessment of the start-up initiative, in respect of the parties involved in the relationship.

The gatekeepers play a very important role in the granting of loans due to their scientific, technical and professional skills, as well as directly knowledge of the territory in which they operate respectively.

The proposal of recognising the figure of the gatekeepers as actors of the microcredit system allows us to identify their function according to the guarantee of the bank-company relationship.

They carry out professional control and certification services of the information and/or of the project initiatives to be funded.

In general the gatekeepers recognise rating agencies, banking institutions and companies that provide insurance on the goodness of the project related initiative of an innovative nature in professors, solicitors, accountants, auditors, professionals and analysts.

Table 2. Start-up Initiatives launched by BPC, Intesa SanPaolo and Unicredit.

Project name/ characteristics of the initiative	Prima idea by BPC	Start-Up initiatives by Intesa San Paolo	Start-Up by Unicredit
Type of activity that can be funded	Innovative Activities promoted by entrepreneurs aged between 18 and 40	young For technology (social ventures, ICT, biotech, mobile/mobility, clean technology, nano technology)	Aspiring entrepreneurs (absence of indications related to the activity). Company activities already registered with the Chamber of Commerce for no more than 21 months and certificates of activity initiation
Amount that can be funded for start-ups	50,000 euro	No limit is indicated	100, 000 euro
Interest rate	Rate 0	Not indicated	Fixed or variable rate
Maximum duration of the loan	10 years	Not indicated	7 years with pre-amortisation of 24 months
Plafond that can be funded	1,000,000 euro with research mechanism	Not indicated	Not indicated
Guarantees	Moral	Not indicated	- Trusts for at least 60% of the amount – personal means for 30% of the amount
Project Assessment	The assessment and selection phase is guided by highly specialised gatekeepers (academic, entrepreneurial and banking world)	An assessment and selection phase is indicated by the industry experts and technology specialists	Not indicated
Other	Tutorial activities for launch of the start-ups		

Source: our elaboration based on data research.

If, on the one hand, their activities are based on the achievement of information related to entrepreneurial proposals, on the other hand their activities tend to highlight potential irregularities related to the start-up projects being assessed.

The gatekeepers differ from stakeholders as they are not personally interested in the project action. Their duty is to monitor and/or observe the imperfections of the projects presented to the microcredit system, with a view to certifying

credibility (Kraakman, 1984) of the innovative initiatives with regards to microfinance and, in general, of the credit institutions and of the funders.

Goergen et al. (2010) argue: “*The gatekeeper must therefore certify the credibility of a corporation vis-à-vis outsiders by pledging its reputational capital.*”

We believe that recognition of the function of gatekeepers, for the microcredit system, contri-

butes to contrasting the informative asymmetries of the bank-company relationship. The combination of their specialised skills, originating from the academic, entrepreneurial and banking world guarantees the assessment and selection phase of the projects to be funded and also qualifies the start-up project.

In particular, university professors have the ability to judge the real value of the project idea, recognizing the entrepreneurial reputation through

Table 3. Traditional and reviewed conception of the microcredit theory.

Principles	Traditional conception	Conception reviewed (Prima Idea)
1. Loan of a reduced amount	X	X
2. Identification of the beneficiary individuals of loans according to the economic/group loan criteria	X	X
3. Loans according to state of progress of the initiative/repayment in small instalments	X	X
4. Reimbursement rate of the loan	X	
5. Moral guarantees	X	X
6. Financial guarantees	X	
7. Principle of guarantee (gatekeepers)		X
8. Tutorial and support (gatekeepers)		X

Source: our elaboration based on data research.

the professional and human component. In other words, professors recognize the skills of young entrepreneurs, with knowledge of the territory in which they operate.

In this perspective, the business plans presented for the launch of start-up initiatives reveal the skills of the applicants, who are assessed by the academics twice: documentation related to the projects created and face to face meetings.

Furthermore, the professional skills of gatekeepers are provided to start-ups even in the launching phase of company activities. This contrasts the phenomenon of moral hazards and simulated failure.

The performance of moral guarantees favours investments in trust and in reputation to the detriment of the definition of an interest rate. The Prima Idea case stimulates the activation of moral guarantees, funding company activities at zero interest rate.

An assessment of the project that precedes the funding phase of the assets of the applicant has been replaced by an assessment of young entrepreneurs, recognised as individuals.

Therefore, reputation replaces real guarantees, favouring the confirmation of reliability of each individual established, in the case in question, through the gatekeepers and meetings with young entrepreneurs.

The role played by reputation in these processes guides the analysis towards research into objective assessment methods of intangible capital owned by young entrepreneurs. In this regard, among the various reputational forms, the true, the good and the beautiful can be recognised. This classification is confirmed in part of the literature (Klewes and Wreschniok, 2009), that distinguishes success and individual competence, from the integrity and social responsibility of young entrepreneurs, including their level of attraction and uniqueness.

In other words, the cognitive, ethical and aesthetic references of entrepreneurs are assessed on a general level by the academics of the assessment commission, together with the business plans of each innovative idea.

Table 3 illustrates the traditional principles of microcredit together with the ones that the case study proposes.

The implications deriving from the case study allow us to propose the idea of conceptualization of the microcredit principles, with special attention to the following:

1. the presence of gatekeepers from the academic, entrepreneurial and banking work guarantees the bank-company relationship against informative asymmetries in all phases of the relationship (principles 8 and 9, Table 3). The specialized skills of these gatekeepers support the start-ups in every phase of company activities;
2. with reference to the previous point, the function of the university professors appears to be different compared with the assessments destined to identify the professional skills of young entrepreneurs on the territory that they belong to. This aspect fills the gaps of informative asymmetries, promoting an increase in the reputation capital. The latter is currently assessed through the human and professional component. However, it is suitable to investigate this aspect by analytically analyzing the dimensions that qualify the entrepreneurial reputation;
3. the absence of interest rates and the request for financial guarantees stimulates the activation of moral guarantees, contrasting at the same time the informative asymmetries (principles 4 and 7, Table 3);
4. the characteristics of the Prima Idea project promote economic, social and territorial progress in which the bank-company relationships are developed, for the launch of start-up initiatives.

In light of this, the launch of a call for academic communities aims at verifying the principles defined by the Prima Idea project, with special reference to the guarantee function carried out by the gatekeepers, together with the performance of moral guarantees, activating long term trust relations. The assessment of young entrepreneurs, carried out through the skills of the university professors and the replacement of the reputation with the

supply of real guarantees, stimulates the growth of intangible capital on the territory.

These aspects represent useful contrasting action of the informative asymmetries in the bank-company relationship, as well as generators of long term value.

CONCLUSIONS, LIMITATIONS AND PROPOSAL FOR FUTURE RESEARCH

This research proposes a review of the principles of microcredit, combined with the birth of innovative start-ups. The latter are the main catalysts of informative asymmetries in the bank-company relationship as their nature makes future cash flows generated by the entrepreneurial initiative aleatory.

With the objective of contrasting the informative asymmetries of the bank-company relationship and reviewing the principles of microcredit, the case study "Prima Idea" suggests certification of the assessment process of entrepreneurial projects, through the skills of specific gatekeepers, as well as stimulating moral guarantees to the detriment of application of interest rate, and tutorials in the launch of company activities.

The launch of a call to the academic community, therefore, aims at checking the validity of the model proposed by Prima Idea in other national and international contexts.

With reference to the limits of the article, the need to collect empirical proof that proves the function of guaranteeing the gatekeepers is highlighted, with special attention to the function of the university professors, comparing the performance of the activities funded. We believe that the validity of this research may provide important results where the time period in question is at least three years.

The main conclusion of the paper is that through conceptualization of the principles of the microcredit, the case study proposes useful contrasting action of the informative asymmetries, which include the following aspects:

1. the activities carried out by the gatekeepers, especially in the professional figures of the academic world, the bank-company relationship is guaranteed;
2. the moral guarantees characterise the microcredit system and stimulate the activation of investments in trust and reputation. Long term bank-company relationships are activated, without the weight of interest rates and financial guarantees. Wealth is generated in the relative territory.

The main limitations in terms of research include the impossibility of control, over an adequate period of time, cash flows generated by the start-ups funded by the Prima Idea project. This analysis is useful to confirm assessment of the projects selected by the gatekeepers and activated due to the granting of moral guarantees.

Furthermore, as indicated in the analysis of literature,

the legislative decree 169/2012 has introduced the various limits for recognition of Italian microcredit. The analysis carried out up until now has been completed by virtue of the traditional principles of microcredit, mainly inspired by the Grameen Bank model.

Future research, therefore, should aim at confirming the relationship between cash flows generated by the start-up initiatives funded and the variables that conceptualise the supply process of microcredit according to the BPC model.

Conflict of Interests

The authors have not declared any conflict of interests.

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Full Length Research Paper

What drives Chinese private colleges' internationalization?

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Internationalization of private higher education has attracted considerable interest recently. After clarifying the status quo of Chinese private colleges, we proposed the conceptual model of Chinese private colleges' internationalization. This paper adopted a "strategy tripod" perspective in integrating the impact of the resource-, contingency-, and institution-based factors on Chinese private colleges' internationalization. Propositions were developed to indicate the driving forces of Chinese private colleges' internationalization and showed the influence of Chinese private colleges' internationalization on their performance like reputation and income. Generally, internationalization of Chinese private colleges was an important way to improve their performance in the long run.

Key words: Chinese private colleges, internationalization, driving forces, strategy tripod.

INTRODUCTION

With the development of private higher education all around the world, study on private colleges becomes a continuing trend. Private colleges refer to colleges responsible for their own funding, along with internal governance and management, the relationship to government and public authorities, and their planning. In the existing literature, private colleges in the United States, Poland, Britain, Hungary, and Russia have been explored. Yet very little is known about private colleges in China.

Due to economic globalization, internationalization of private colleges is not a new phenomenon. Hurtado et al. (2013) thought internationalization had become a key theme in higher education. Huang (2007) provided a detailed description of transnational higher education in

China, he just concentrated on joint operations and programs which are one of the forms of internationalization and it was primarily suitable to public higher education. Hence, to study on internationalization of Chinese private colleges is supplementary to existing literature.

There are literatures on motivations of internationalization of higher education, but they have focused on internationalization of public higher education, not private colleges. Moreover, the existing literatures have focused on the goals of internationalization. While one of the forms of internationalization and it was primarily suitable to public higher education. The author argues that internationalization itself is in particular a goal.

As a result, the lack of study on the factors driving

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Chinese private colleges' internationalization is a major gap.

Therefore, the study of Chinese private colleges' internationalization not only can provide theoretical guidance to private colleges, but also can fill in the major gap and enrich the existing international literature.

There are two purposes in this paper. First, we integrate the resource-based view, contingency theory, and the institution-based view to seek the driving factors of Chinese private colleges' internationalization. Based on resource-based view entrepreneurial spirit is a very important factor driving the internationalization of Chinese private colleges. Based on contingency theory industry competition is a motivation of Chinese private colleges' internationalization. Based on the institution-based view governmental supportive regulations cannot be neglected in Chinese private colleges' internationalization.

Second, the author attempts to propose the fundamental relationship between internationalization and private colleges' performance. My aim is to fill in the two major gaps in the higher education internationalization literature by addressing two fundamental questions: (1) What is the driving factors of some Chinese private colleges to engage in internationalization? (2) What are the effects of Chinese private colleges' internationalization on their performance?

The remainder of this paper is organized as follows: First is the review of related literature. Second is on the status quo of Chinese private colleges. Third, strategy the tripod perspective is used to analyze the driving factors of Chinese private colleges' internationalization, advancing some related propositions. Fourth, a conceptual model is proposed that links entrepreneurial spirit, industry competition, and governmental supportive regulation to internationalization and links internationalization to its effects. Fifth is the measurement of the related variables and then conclusion.

LITERATURE REVIEW

The existing literature examines two basic questions about private colleges. The first question is: what is the development history of private colleges? From the literature private colleges have been discussed in some countries such as the United States, Poland, Britain, Hungary, and Russia. Williams and Colby (1991) traced the history of the private junior college in the United States. Szabłowski (2001) argued that private higher education institutions in Poland were not as well treated as public institutions. Beloff (2001) showed launching process of a British private college which focused on liberal education. Gömbös (2003) introduced private colleges in Hungary. Petrenko and Glanzer (2005) described the development of private Christian colleges in Russia. To sum up' they all

concerned the history of private colleges.

The second question addresses the operation of private colleges. For example, Russo and Coomes (2003) argued that the long term pricing strategy of private college must be sensitive to its basic mission. Rood (2009) examined first-generation students' college choice and persistence at a private Christian college in the U.S. Northeast. Jones (2010) explored general education assessment at private historically black colleges and universities. Giles (2012) indicated the impact of adult degree programs on private college or university.

Internationalization is a popular term, and there are many ways to define it. Scott (2000) argued that internationalism of the university took two main forms—internationalism associated with imperialism and internationalism focusing on science and scientific method. Huang (2003b) who was interested in Chinese higher education indicated internationalization had changed from activities concerning traditional outflows of international scholars, faculty members, and students to those relating to transnational higher education and internationalization of curricula. Altbach and Knight (2007) argued that internationalization included the policies and practices undertaken by academic systems and institutions—and even individuals—to cope with the global academic environment.

As for the motivations for internationalization, Altbach and Knight (2007) argued profit-seeking, knowledge and language acquisition, demand absorption and many others were the motivations for internationalization. Chen and Weng (2008) proposed that the internationalization of higher education was driven by inner power of knowledge universality and outer power of politics, economy and culture. According to Wang (2014), apart from the mutual understanding approach for internationalization of higher education, there were capacity-building approach, the skilled migration approach and revenue-generating approach. And she argued that there were different motives in accordance with different approaches. For instance, revenue-generating approach had more concern of generating revenue.

The status quo of Chinese private colleges

There are two kinds of full-time teachers in Chinese private colleges: senior teachers who have rich life and teaching experiences and young teachers who are innovative and risk-taking. Full-time staff are supplemented by part-timers, who include retired scholars of distinction and persons on-the-job in firms who have teachers' qualification certificate. Part-time faculty can afford important financial savings.

A majority of income of Chinese private college come from tuition. In Chinese private colleges, every student



Figure 1. The status quo of private colleges' internationalization in China.

must be able to afford to pay the fees charged. The tuition is constrained by the education committee, to illustrate, most of the Chinese private colleges in Shanghai can only charge one student tuition 10000RMB per year. Small part of majors like art can charge one student tuition 13000RMB or 15000RMB per year.

As at April 24, 2012, there are altogether 403 independent private colleges in China. Last year, my students and I had searched 403 Chinese private colleges' WEB sites one by one. We found that some private colleges showed communication or cooperation with other schools abroad. As for international behavior, to visit foreign schools or to be visited by foreigners is very popular. Some provinces in the East or middle of China are doing better in private colleges' internationalization than others; examples include. Shanxi Province, Jiangsu Province, Liaoning Province, Zhejiang Province, Anhui Province, Hubei Province, Hunan Province, Guangxi Province, Guangdong Province, Henan Province, Fujian Province, Jiangxi Province, and Hebei Province. In direct-controlled municipality, Beijing City and Shanghai City are doing better in private colleges' internationalization than Tianjing City and Chongqing City. In Figure 1, the provinces with better internationalization are marked with green color. Beijing City and Shanghai City are also labeled.

Some Chinese private colleges do better in internationalization. For example; Xi'an International University, Xi'an Siyuan University, and Xi'an Fanyi University are in

Shanxi province doing well in internationalization. Wuyishan Vocational College is in Fujian province doing well in internationalization. Nanhua College of Industry and Commerce, and Lingnan Institute of Technology are in Guangdong province doing well in internationalization. Hebei Foreign Studies University, and Shijiazhuang Economic Vocational College are in Hebei province doing well in internationalization. Wuchang University of Technology, and Wuhan College of Foreign Language and Foreign Affairs are in Hubei province doing well in internationalization. Hunan International Economics University, and Hunan Institute of Information Technology are in Hunan province doing well in internationalization. Silicon Lake College, Xi'an Jiaotong-Liverpool University and Sanjiang University are in Jiangsu province doing well in internationalization. Zhejiang Shuren University, and The University of Nottingham Ningbo China are in Zhejiang province doing well in internationalization. Guangxi Economic Vocational College, and Talent International College Guangxi are in Guangxi province doing well in internationalization. Xinyang International Vocation Institute is in Henan province doing well in internationalization. Jiangxi Fenglin College of Foreign Economy and Trade are in Jiangxi province doing well in internationalization. He University is in Liaoning province doing well in internationalization. Beijing City University is in Beijing doing well in internationalization. Sanda University is in Shanghai doing well in internationalization. In greater detail, those typical private colleges are shown

Table 1. Typical private colleges doing well in internationalization.

Typical private colleges doing well in internationalization	Province or direct-controlled municipality
Beijing City University	Beijing city
Hebei Foreign Studies University	Hebei Province
Shijiazhuang Economic Vocational College	Hebei Province
He University	Liaoning Province
Zhangzhou College of Science & Technology	Fujian Province
Wuyishan Vocational College	Fujian Province
Jiangxi Fenglin College of Foreign Economy & Trade	Jiangxi Province
Xinyang International Vocation Institute	Henan Province
Wuchang University of Technology	Hubei Province
Wuhan College of Foreign Language & Foreign Affairs	Hubei Province
Hunan International Economics University	Hunan Province
Hunan Institute of Information Technology	Hunan Province
Nanhua College of Industry and Commerce	Guangdong Province
Lingnan Institute of Technology	Guangdong Province
Guangxi Economic Vocational College	Guangxi Province
Talent International College Guangxi	Guangxi Province
Xi'an Siyuan University	Shanxi Province
Xi'an Fanyi University	Shanxi Province
Xi'an International University	Shanxi Province
Sanda University	Shanghai city
Zhejiang Shuren University	Zhejiang Province
The University of Nottingham Ningbo China	Zhejiang Province
Anhui Sanlian University	Anhui Province
Anhui Foreign Languages University	Anhui Province
Silicon Lake College	Jiangsu Province
Xi'an Jiaotong-Liverpool University	Jiangsu Province
Sanjiang University	Jiangsu Province

as Table 1.

According to the direction of the internationalization, private colleges can implement the "going out" and "please come in" strategy. "Going out" can be called "outward internationalization". "Please come in" can be called "inward internationalization", similar to argument of Internationalization at Home (Horn et al., 2012). The "going out" strategy means China actively participates in pushing the indigenous talent to the world and the "please come in" strategy means China is eager to attract talent all around the world to work in China. Horn et al. (2012) argued strategy of recruiting international students and strategy of infusing international content into the curriculum can be termed Internationalization at Home.

There are many forms of internationalization. Avila (2007) clarified programmatic structures for internationalization, including interinstitutional agreement, student mobility, faculty mobility, international networks for research and teaching, the internationalization of the curriculum, cooperation in research.

According to Huang (2007), more foreign higher education services in China were imported than those exported. After searching all of the Chinese private colleges' WEB sites, like Huang (2007), the author finds most of the Chinese private colleges that are engaging in some internationalization are practicing inward internationalization. Their international behaviors include accepting foreign interviews, inviting overseas choir (for example, Hunan international Economics University), enrolling overseas students (for example, Xi'an International University; Talent International College Guangxi), hiring foreign teachers (for example, Zhejiang Shuren University; The University of Nottingham Ningbo China), importing foreign advanced management technology (The University of Nottingham Ningbo China ;Hainan Technology and Business College; Xi'an Siyuan University), and operating jointly (for example, Xi'an Jiaotong-Liverpool University; The University of Nottingham Ningbo China). Specially, the University of Nottingham Ningbo China is now enrolling students internationally and joint

training international doctors.

Some Chinese private colleges that are engaging in some internationalization are adopting outward internationalization. Their "going out" way includes sending a few students to study abroad (for example, Wuhan College of Foreign Language and Foreign Affairs; Xi'an International University; Hebei Foreign Studies University; Talent International College Guangxi), sending some students to work abroad (for example, Xinyang International Vocation Institute; Anhui Sanlian University), sending a few teachers to study abroad (for example, Beijing City University; Shijiazhuang Economic Vocational College; Zhejiang Shuren University; Sanda University), participating in the international forum (Talent International College Guangxi), dispatching some students to foreign schools for paid internships (for example, Shanghai Zhongqiao College; Yang-en University), dispatching some graduates to work in other countries (63 graduates from Xinyang International Vocation Institute once were hired in South Korea) and investing in foreign countries. But investing abroad is risky. Chongqing Hailian Vocational Technical College invested in Australia in 2002 and several years later it failed.

Strategy tripod Perspective

Peng (2005) argued that the institution-based view was a new leg of the international business strategy. Then Peng et al. (2008) argued the institution-based view, in combination with the industry- and resource-based view, puts the strategy tripod on firmer ground. Peng et al. (2009) believed the institution-based view had enriched the strategy discipline, leading to a strategy tripod. Because the strategy tripod framework exposed multi-level influence on international strategies, more and more papers on international business are from the strategy tripod perspective. To illustrate, Gao et al. (2010) focused on export behaviors using strategy tripod perspective. Xie et al. (2011) examined foreign firms' strategic positioning in the host country from strategy tripod perspective. Krull et al. (2012) studied the internationalization of engineering consulting firms from strategy tripod perspective. Like them, this work adopts the strategy tripod perspective on driving factors of Chinese private colleges' internationalization.

The resource-based view and proposition development

The resource-based view envisions the organization as a collection of strategic resources which are heterogeneously distributed across organizations (Barney 1991) to achieve a sustainable competitive advantage. Internal

organizational resources are all assets, capabilities, organizational processes, organization attributes, information, knowledge, and so forth (Barney, 1991). Based on that, it is argued that resources include human resources, property, information, entrepreneurial spirit and so on. Entrepreneurial spirit which manifested among all the entrepreneurs is the spirit of risk-taking, being innovative and proactive. With its risk-taking nature, an entrepreneurial person is willing to devote the necessary resources to opportunities that may result in costly failures. Innovativeness is the proclivity to engage in and support novelty, new ideas, creative processes, and experimentation which lead to new products, services, or technological processes (Lumpkin and Dess, 1996). The proactive quality requires substantial financial and managerial commitment.

The person who has entrepreneurial spirit has a propensity to engage in the pursuit of new market opportunities and the renewal of existing areas of operation. They are willing to bear hardships and stand hard work. They are enterprising and proactive. They hope to lead a private college to be big, strong and distinctive. Internationalization of Chinese private colleges includes intake of foreign students, so it is a way to be big. Internationalization of Chinese private colleges boosts graduates' obtaining employment, so it is a way to be strong. What is more, internationalization is just a way to make a private college to be distinctive.

In China, chairman of the board of directors in private college is entrepreneur (Pettigrew, 1979) who takes primary responsibility for mobilizing people and other resources to initiate, give purpose to, build, and manage a new organization. It is the entrepreneurial spirit that enhances the internationalization of Chinese private colleges. As a case in point, Talent International College Guangxi is pursuing internationalization because of the chairman of the board of directors, Hou Zhenmei. Thus, it is proposed that entrepreneurial spirit will be positively related to Chinese private colleges' internationalization.

Proposition 1: From the resource-based view, entrepreneurial spirit will be positively related to Chinese private colleges' internationalization. The entrepreneur who has entrepreneurial spirit in a Chinese private college will be prone to pursue internationalization.

Contingency theory and proposition development

Contingency theory holds that organizations adapt their structures in order to maintain fit with changing contextual factors, so as to attain high performance (Sousa and Voss, 2008). Contingency variables include national context, organizational context, strategic context and other environmental variables. The author takes the perspective

that contingency theory can be a very useful theoretical lens to view the internationalization of Chinese private colleges.

Chinese private colleges are competitive in searching for students and enrollment. There are main three reasons. First, the family planning policy in China which has been carried out for more than 30 years leads to nationwide enrollment declines. Second, enrollment arrangement in China needs to follow the stipulations from the Ministry of Education. For instance, only the university entrance exam candidates who are in excess of or equal to the prescribed admission score can be admitted. Moreover, it is only when the candidates selecting the very Chinese private college would be enrolled. Third, private colleges in China are to some extent been looked down on. In China the candidate needs to fill in three universities or colleges including private colleges he or she wants to attend. Private colleges in China usually row in the back in the admissions handbook.

Thus, to a private college in China which hopes to attract student enquiries and admissions, there should be distinguishing feature. Internationalization is the very distinguishing feature. Private colleges with internationalization will attract candidates who want to go abroad in the future. Private colleges with internationalization will also attract candidates who want to learn foreign language well. Private colleges with internationalization will even attract candidates who are from foreign country. So internationalization strategy of private colleges in China is imminent.

In addition, private colleges in China not only compete with public universities, but also with other private colleges. Intense competition in enrollment is undeniable for Chinese private colleges. Intense competition is characterized by heavy advertising, diverse product alternatives including all kinds of majors, and added services. A case in point was that when one private college opened a new major enrolling well in 2011, many private colleges opened the same major in 2012. In such conditions, internationalization may be desirable. For example, they can attract foreign students to learn Chinese or study for diploma in the domestic campus.

Therefore, the following is proposed:

Proposition 2: From contingency theory, industry competition has a positive effect on Chinese private colleges' internationalization. When the competitive intensity becomes greater, the desirability of internationalization for Chinese private colleges will be stronger.

The institution-based view and proposition development

The institution-based view asserts that organizations sharing the same environment will be isomorphic to other

organizations, that is, organizations will resemble each other and behave similarly over time. When an organization is uncertain about what to do, it may imitate other successful organization. The institution-based view focuses on the interplay between institutions and organizations (Gao et al., 2010). Strategic activities are socially and normatively defined because their motives derive from an actor's propensity to legitimate or account rationally for such activities (Dacin et al., 2007). Institutions exert three types of isomorphic pressure on organizations. That is coercive, normative, and mimetic (DiMaggio and Powell, 1983). Thus institutions shape both the goals and means of the organization.

Institutions include laws, regulations, norms, customs and so on. Trilokekar (2010) highlighted the contributions of Canadian federal government to the internationalization of Canadian higher education. Governmental supportive regulations refer to institutional policies and practices favoring internationalization. Wang (2014) counted the frequency of internationalization in several education policy in China, and found that initially the policy granted universities the autonomy to engage in international academic exchange and cooperation; then the policy proposed comprehensive international tactics which encourage Chinese students to study overseas and admit foreign students to study in Chinese universities.

Sometimes Education Commission in China carries out some aid programs, for example, scholarship program for both Chinese and foreign scholars. The document of 2003-2007 Action Plan for Revitalization of Education highlighted the significance of the private sector. Thus, Chinese private colleges are explicitly encouraged by the regulations. This action of internationalization might do merely because of supportive regulations from the government. And this action might do merely due to other colleges starting the action. Also, it is asked to set up a specialized sector coping with international affairs. Then Chinese private colleges have to create international exchange sector advancing their internationalization. They are all supportive regulations from the government which enhance Chinese private colleges' internationalization.

Thus, the following proposition is made:

Proposition 3: From the institution-based view, governmental supportive regulations play a big role in driving Chinese private colleges' internationalization. The more governmental supportive regulations, the more Chinese private colleges will engage in internationalization.

Internationalization and performance

It is accepted that business performance is a multi-dimensional and highly complex phenomenon (Lenz, 1981). In previous studies, performance can be a firm's

sales growth, return on investment, profit and market share. Assessment of performance can be a difficult and complex task. Peng and Luo (2000) argued performance could be measured both financially and strategically.

From the perspective of students, internationalization of universities will prepare graduates to enter positions that perpetuate the status quo, it also offers opportunities to create global citizens who challenge the hegemony of world structures and argue for social transformation, emancipation, and social democracy (Allen and Ogilvie, 2004). From the perspective of the universities, Altbach and Knight (2007) argued that developing countries seek to attract foreign students to their universities to improve the quality and cultural composition of the student body, gain prestige, and earn income. In this paper, based on Altbach and Knight (2007), performance of a Chinese private college mainly includes the school's reputation and income.

Internationalization and reputation

Reputation has been defined as the knowledge about an organizational true characteristics and the emotions toward the organization held by stakeholders (Weigelt and Camerer, 1988). According to Sauder and Fine (2008), reputation is a signal providing an assurance of quality in the face of uncertainty.

Chinese private colleges with internationalization show comprehensive strength, for international activities, involve in many resources and show inclusion of multiculturalism. So internationalization means the ability of the university or college. Colleges with high comprehensive ability are associated with good reputation. Moreover, internationalization also means that the graduates may have a greater chance of finding a better job. The reputation value of a Chinese private colleges is high in a society where their impressions of certain colleges to screen job applicants and the reputation value is even higher if the college is also applied as a criterion (Tao, 2007). In addition, Chinese private colleges which perform internationalization can upgrade teachers. Teachers who have once lived in another country own a wider field of vision than others. Usually, Chinese private colleges with a number of those teachers mean quality of teaching.

Therefore, Chinese private colleges which perform internationalization will get good reputation. Private colleges with internationalization influence the college's reputation positively.

Proposition 4a: Internationalization has a positive effect on reputation of Chinese private colleges.

Internationalization and income

Earning money is a key motive for all internationalization

projects in the for-profit sector and for some traditional nonprofit universities with financial problems (Altbach and Knight, 2007). Income-seeking is the common trait of Chinese private colleges. Where does their income come from? First, a majority of income of Chinese private college come from tuition payments, that is, the money paid by students. Second, a relatively small proportion of income is from other sources. Some income may be from firms if the private college cooperates with firms such as renting out the classroom in the holidays. Some income may be from donation of a benefactor or outside donor organization; only a very small part is from the education committee's support.

In the short run, private colleges to pursue internationalization will involve in many resources, for example, financial aid, and related services. In the long run, private colleges with internationalization can find a new way to enhance income. As a result, more and more overseas Chinese concern the college and the college will get more donations. Further, more and more firms care for the college, so the college will have more cooperation chances and get more income. Moreover, the education committee will give more opportunity to the private college. That is, the government will give more incentives to the private college which has become international. More important, more students' enrolment leads to more tuition. What's more, many countries recruit international students to earn profits by charging high fees—including Australia, Canada, the United Kingdom, and the United States (Altbach and Knight, 2007). China is no exception.

Therefore, private colleges with internationalization influence the college's income. In the long run, internationalization has a positive effect on income of private colleges in China.

Proposition 4b: Chinese private colleges' internationalization has a positive effect on income in the long run.

A conceptual model

Based on the view, a framework is presented as Figure 2, which can be tested through a series of regression models. The core tenet of this model is that it integrates the resource-based view, contingency theory, and the institution-based view to seek the driving factors of Chinese private colleges' internationalization. Based on resource-based view, entrepreneurial spirit is a very important factor driving the internationalization in Chinese private colleges. Based on contingency theory industry competition is a motivation of Chinese private colleges' internationalization. Based on the institution-based view governmental supportive regulations are the factors that cannot be neglected in Chinese private colleges' internationalization. In addition, internationalization is related to private colleges' performance. Internationalization of

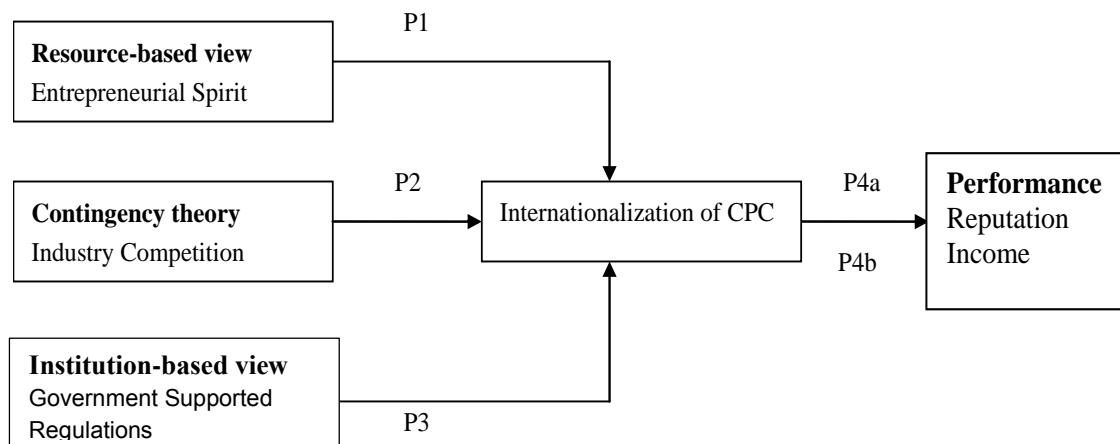


Figure 2. The conceptual model of Chinese private colleges' (CPC) internationalization.

higher education can be interpreted as a result, as a direction of cultivating students' ability, as a kind of education spirit, as a set of activities, and as a kind of trend and processes (Wang and Liu, 2009). In this model, internationalization of Chinese private colleges is the way to acquire performance such as reputation improvement and income increase.

Measures

When available, existing measures can be adopted or adapted. When existing scales of the constructs are not available, measure can be guided by conceptual definitions.

Entrepreneurial Spirit construct. The scale can be adapted from Ang and Hong (2000). Entrepreneurial spirit includes several dimensions: risk-taking propensity, achievement orientation, innovation, and desire to gain status. Items like "I'm willing to take substantial risks for substantial returns", "I don't like doing things which I do not know much about" and "I have a strong preference for high-risk projects" can be used for "risk-taking propensity". Item like "When I do something, I see to it that it gets done excellently" can be used for "achievement orientation". Items like "I can beat around difficulties through creativity" and "It is welcome to introduce internationalization strategy" can be used for "innovation". Items like "I want to be accorded high status in the society" and "Social status is not an important consideration when I choose my career" can be used for "desire to gain status". Measure of each item ranges from one to five, that is a five-point scale.

Industry Competition construct. This can be measured with the total number of private colleges, the total number of graduates from private colleges, the total number of

entrants into private colleges, the total number of students attending the college admission examination in the last five years. These data can be found in National Bureau of Statistics of China.

Governmental Supportive Regulations construct. Measure of each item is on a scale from one to five, with one indicating low governmental supportive regulation and with five indicating high governmental supportive regulation. Ask board of education in various provinces to "provide travel support for faculty to attend foreign colleges", "provide faculty with released time to develop international projects" as well as "provide funding for international projects" (Ray and Solem, 2009).

Internationalization of CPC. The construct can be measured with a five-item scale that one means inconformity to the fact, and five means to conform well to the fact. Ask faculty members and students to evaluate items. For example, "Our college has engaged in some international projects for a long time", "I have participated in an international program", "Our principal pays attention to internationalization strategy", "There are some reports on internationalization of our college", "International activities of our college are related with a lot of foreign country".

Performance measures. Reputation can be measured with a five-item scale developed for this study by drawing on Volkwein and Sweitzer (2006). From arguments of Volkwein and Sweitzer (2006), structural characteristics such as mission, governance, age, size, wealth influence reputation. And faculty recruitment, salaries, support, research publication, and scholarly productivity can also influence reputation. Besides, student academic success, student growth, graduation rates, and alumni attainment can influence reputation too. They concluded the bigger is the better, regardless of the measure of size. So enrollment can be one of the indicators of reputation.

The nationally developed ranking can be relied upon:

Top 100 Private Colleges published by Chinese Alumni Association. The index is made of three indicators, which are talent training, educational investment, and social prestige. Although the rankings are not perfect, the private college in the list is interpreted as the best-known. The reason is that objective data are to be measured.

However, reputation can also be measured through surveys with an advantage. That is, the choice of weights attached to various measures is left to the respondents, not to the investigator (Williams and Dyke, 2008). Reputation can be measured with a five-scale. Items are like "our college has a good reputation because of internationalization in the recent year". If you evaluate one, you disagree with the item, and if you evaluate five, you agree with the item greatly.

Income can be measured with a five-scale that captured the total revenue change between after-international-activity and before-international-activity. Ask financial managers and the principal in Chinese private colleges to evaluate items. For example, "As for income of the last year, our college benefited from international projects" and "our college expanded in enrollment because of international projects".

Conclusion

The paper makes several contributions. Theoretically, a "strategy tripod" perspective is adopted in integrating the impact of the resource-, contingency-, and institution-based factors on Chinese private colleges' internationalization and it is argued that internationalization of Chinese private colleges is the way to improve performance such as reputation and income.

Therefore, the conceptual model of Chinese private colleges is a significant theoretical contribution. The insights from this paper enrich the literature of private higher education and the literature of internationalization of higher education. Empirically, the author and her students searched 403 Chinese private colleges' WEB sites last year and this paper lists detailed private colleges which do well in internationalization. Methodologically, the author borrows study method from management discipline. This approach allows innovation in the pedagogy discipline. Although being a conceptual paper, the author suggests that quantitative studies be conducted. She not only puts forward propositions, but also explains how the constructs in the conceptual framework could be measured.

Several limitations of this study should be noted and point to the need for further research. First, quantitative studies need to test the advanced propositions and deepen this paper. Further research should pay more attention to data collection. Second, the status of Chinese private colleges is not all-sided because the research

design is not longitudinal. Future work should consider adopting longitudinal design. Third, although entrepreneurial spirit, industry competition, government supportive regulations are factors driving Chinese private colleges' internationalization, they are by no means exhaustive. Further research should explore other important factors.

Conflict of Interests

The authors have not declared any conflict of interests.

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