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Global Connectivity, Knowledge and Innovation for Sustainability and Growth: New Paradigms of Theory and Practice

Editors

Vidya Atal
Ram Sewak Dubey

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Society for Global Business & Economic Development (SGBED): Two decades of Accomplishments

■ **Dr. C. Jayachandran, President, SGBED**

It is my honor to present to you all the 14th SGBED conference organized at the beautiful facilities of the Feliciano School of Business in June 21-24, 2016. We are grateful to Montclair State University President Dr. Susan A. Cole for her interest in SGBED activities as reflected in her participation and presentation of keynote addresses in several of our conferences. Dr. Cole's continued support and encouragement to engage in international collaboration that advance research and teaching had a significant impact on our accomplishments. Our Provost Dr. Willard Gingerich, Feliciano School of Business Dean Dr. A. Gregory Cant and Vice- Dean Dr. Kimberly Hollister, and Dr. Robert Prezant, Dean, College of Science and Mathematics have enthusiastically supported the idea of bringing the SGBED 14th conference to Montclair and helped in crafting a theme that reflects the interdisciplinary nature of the conference. They have provided generous support in terms of financial, physical and above all the encouragement to make this possible. Almost two decades ago, thanks to a US Federal grant Dr. Philip LeBel, former dean of the MSU Business School and myself had an opportunity to meet with President Dr. Sun Weiyan and Dean Dr. Lin Guijun at the University of International Business and Economics (UIBE) in 1995 in Beijing and developed a collaborative proposal to advance academic research and scholarship at an international level and today I am happy that this initiative had matured over the years.

Driven by the above objective, SGBED had successfully implemented 13 major conferences in Beijing (1997, 1999, 2000), Guangdong (1998), Chennai (1998), Bratislava (2001, 2009), Bangkok (2003), Guadalajara (2004), Seoul (2005), Kyoto (2007), Singapore (2011), Ancona, Italy (2014). Five research symposia were implemented in Nanjing (2015), IIM Bangalore (2012), Barcelona (2010), Dubai (2009) and Bangkok (2006). These conferences and research symposiums have attracted more than 4,000 academics and generated peer reviewed publications in 20 volumes of proceedings containing more than 2.000 research papers and several special issues of peer reviewed journals, and five books of readings.

Highlights of the 14th Conference held at the Feliciano School of Business: The SGBED conference presented at the brand new facility of the Feliciano School of Business reflects a feeling of home coming and an accomplishment which started with an informal relationship between Montclair State Center for International Business (CIB) and UIBE, had now matured with a global reach to advance interdisciplinary research that focus on international business and development issues. The 14th conference is jointly presented by Feliciano School of Business and Montclair State PSEG Institute for Sustainability Studies along with UIBE, Curtin School of Business, EADA Business School, FOX School of Business, IIMB, Comenius University in Bratislava, University of Guadalajara, VIT University, and other partner institutions.

Unlike the earlier conferences, the 14th conference is presented in a four day format to facilitate pre-conference workshops: doctoral symposium for Ph.D. scholars and a workshop on manuscript development; besides the conference facilitates a full-day event, "Understanding Global Value Chains: How to Prepare Students for Success in an Increasingly Interconnected World" for Community College faculty and administrators from the Northeast. This event is presented by the Centers for International Business Education & Research (CIBERS) of Temple Fox School of Business, University of Connecticut and Michigan State. The main conference is organized into plenary sessions, multiple concurrent sessions and a poster session to facilitate discussion of more than 150 research submissions from 30 + countries. For the first time, the 14th conference will use Skype to facilitate such of those participants who cannot participate in person. Besides publishing the conference proceedings, the conference will facilitate publication of selected papers in five peer reviewed journals. The conference will end with a gala dinner, awards distribution and a cultural tour of New York City.

Most importantly, this conference wouldn't have been possible without the dedicated work of several colleagues. Our Co-Chairs, Drs. Yam B. Limbu and Susana Yu, proceedings editors Drs. Vidya Atal and Ram Dubey, and Dr. Amy Tuninga, Director, PSEG Institute of Sustainability Studies, along with a committed group of

50 + regional coordinators, Phil Mattia at Feliciano School of Business and Ms. Martina Brogliotti at Universita Politecnica delle Marche, Italy who managed the web support have been instrumental in making this conference possible.

Making the Academic Conferences Affordable & Impactful: Unlike other academic organizations, SGBED does not collect annual membership fee and largely depend on institutional support, sponsorships and the support provided by a large network of coordinators make these conferences affordable and also global. Besides our participants like the SGBED format as it provides a balance between academic scholarship and practice by presenting leaders from government and business.

Notable Government Leaders: Government officials who spoke at the SGBED conferences include: China: The Vice-Premier Hon. Li Lanqing, Madame Wu Yi, Ministry of Foreign Trade and Economic Cooperation, Hon. Chen Yuan, Dy. Governor of Peoples' Bank of China, Hon. Wang Guangxian, Dy. Governor of Guizhou Province; India: Her Excellency Justice Fathima Beevi, Governor of Tamil Nadu, The Tamil Nadu Hon. K. Anbazhagan, Minister of Education, The US Consulate General Ms. Michele J. Sison, Slovakia; The Charge D'Affairs of the USA in Slovakia, Mr. Douglas C. Hengel, Hon. Ivan Miklos, Deputy Prime Minister of Slovakia for Economic Affairs, Hon. Lumomir Fogas, Deputy Prime Minister of Slovakia for Legislation and Maria Kadlecikova, Deputy Prime Minister of Slovakia for European Integration.

Nobel Laureates & Leaders from Academia: Former President of Montclair State University Dr. Irvin Reid, and President Dr. Susan A. Cole have delivered keynote at different conferences in China, Mexico, Bratisvala and Bangkok; Dr. Edmund Phelps, Nobel Laureate in Economics delivered a keynote in Bangkok; and Dr. Ferid Murad, Nobel Laureate gave a keynote on science and development in Mexico. Dr. Peter Buckley, former President, Academy of International Business (AIB) delivered in keynote in Beijing; Dr. Howard Thomas, former AACSB President and Dean of the Singapore Management University, Provost & Professor Dr. Raj. Srivastava and Dr. G. Viswanathan, Chancellor, VIT University delivered a keynote in Singapore.

Notable Business Leaders: Dr. Raja Mitra of World Bank, Mr. Max Qu, Chairman & CEO of HI Sun Technology Ltd, Mr. Steven Carroll, China Group Controller of Motorola, Mr. Bill Bowers, VP & Controller of Motorola, Mr. Peter O'Connor, CEO, Asia Pacific Region for CIGNA International, Dr. Michael Zipp, MD, Henkel Investment CO. Ltd, Mr. David Alstrom, VP, Ericsson (China) Company Ltd, Mr. Andy Lai, Greater China Marketing Director for HP, Mr. John Parker, Chairman, American Business Council, and Mr. Ron Sommers, CEO, Mangalore Power Co, Mr. Slaomir Hatina, Chairman of the Board of Directors of Slovnoft, Mr. Jozef Uhrik, General Manager of Volkswagen, Mr. Stefenec, President, Coca-Cola Beverages, Mr. Marian Nemec, President, National Bank and Mr. Ludomir Slahor, President, EXIMBank were invited to deliver keynote in Beijing, Chennai, Bangkok, Seoul, Kyoto and Bratislava.

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Some thoughts for the Future:
SGBED is soliciting institutions to sponsor the 6th research symposium in the summer of 2017 and the 15th International conference in the summer of 2018. Interested institutions or coordinators can submit a proposal. SGBED also invites proposals to establish a journal, either online or in print. Any scholar interested in taking a leadership towards this effort is invited to submit a proposal.

Thank you for your continued support and cooperation.

Preface

The world is becoming increasingly interconnected across all fronts at an unprecedented pace; it is deemed that networks, knowledge and innovation, and entrepreneurship drive growth and development. The rise of emerging markets and growth of global supply chains are attributed to globalization and ICT; nations and firms continue to form strategic levers using the power of comparative advantage; and human capital worldwide is becoming more mobile and virtually engaged despite the national boundaries. The developments have also caused dramatic structural and organizational changes and disruption of traditional businesses and job markets. Global investments in commodities and indiscriminate exploitation of natural resources affected the sustainability of global ecosystems. Equal access to education, knowledge and health are also under the microscope. The challenges of rising inequalities in wealth and income, economic stagnation, unemployment, and the impact of globalization have also taken the center stage of public discourse. These trends bring heightened levels of responsibility to business, institutions and society.

In view of the strategic importance of these challenges, the 14th International Conference of the Society for Global Business & Economic Development (SGBED) invited academic and professional perspectives in the form of empirical research, case studies and applications on a wide range of related topics. The overwhelming response received from scholars and practitioners from around the world bear testimony to the importance of the chosen theme and currency of the conference.

The papers included in these Proceedings have been selected through a rigorous review process of over 300 scholarly papers. Both full papers, as well as selected papers in the abstract form are published here. Altogether, the selected papers and research abstracts represent over 150 universities located in 40 different countries. The sheer size and scope of the conference necessitated the publication of the proceedings in the CD-ROM format.

The full papers have been divided in broad categories of themes: Accounting, taxation and business law; Economics, finance, real estate, banking and public policy; Entrepreneurship, SMEs and NGO; Information technology and operation management; International business, MNEs and global issues; Management, organizational behavior, corporate governance, legal issues and human resources; Marketing, services, e-commerce, sports and tourism; Pedagogy; and Sustainablity and environmental issues. These papers cover a broad range of issues. To name a few, the topics related to global, regional and country level trends in trade and investment, innovations and volatility in financial markets, rapid advancement of Information and Communications Technology and its influence on business delivery system, pedagogy, sports tourism, new trends in risk and resource management, cultural conflict, environmental equity and challenge of sustainable growth, choice of appropriate corporate governance system, and, enforcement of international accounting standards have received a great deal of attention in the conference contributions. Accordingly, the papers have been grouped under 9 sections representing the major topics of the conference. An additional section, section 10, has been added to accommodate all the selected abstracts with interesting ideas for future research.

Contributions from authors around the world helped make this volume an integrated, cohesive inquiry into the major drivers of global business today and the required directions for sustainable growth in business activities in the future. We express our sincere gratitude to all these authors.

We believe these proceedings offer some of the best information available in the area of global business and economic development. We hope this publication will contribute to the success of those willing to pursue scholarly research on global business trends in the context of a changing environment.

Editors

Disclaimer:

All papers and abstracts included in this volume have been formatted to ensure uniformity in style of representation. Uniform formatting could possibly modify some of the figures appearing in the papers. In view of the variations in writing styles and language proficiency of the authors, proof reading of these papers was kept confined to ensuring conformity with the APA style. Harmonization of language skill reflected across papers was beyond the scope of the editorial process. Language and grammar used in the papers, thus, remain to be the sole responsibility of the respective authors.

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Personality Types in Buyer-Seller Interactions

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Abstract

Operations in sales and purchasing have become increasingly complex. Business-to-business (b-to-b) markets now focus on intangibles and services rather than tangibles. Due to this change in the business market, long-term partnerships between sales and buying organizations have become more important. Sales have also seen a recent shift towards developing relationships and value-based sales interactions; interest in seeing value formation from an interactional perspective is on the rise. As a result, it is important to understand a buyer's value expectations for sales interactions from the perspective of their personality type. This study aims to determine the expectations that business buyers have for buyer-seller interactions from the point of view of the buyer's personality. Using the Myers-Briggs Type Indicator, 20 professional business buyers and 51 professional salespeople were analysed. To better understand the buyer's expectations, the personalities were compared and qualitative interviews were conducted. It was found that a buyer's expectations for sales interactions are influenced by their personality, which can be used to the advantage of sales organizations to satisfy the buyer.

Keywords: business-to-business, buyer-seller interaction, professional business buyer, complex business environment, expectation, Myers-Briggs Type Indicator, MBTI, personal selling, personality types

Introduction

Given the current commercial climate, it can be challenging to distinguish one's business offerings from the solutions and services sold by competitors; most companies in an industry provide the same services and technologies. Interestingly, the sales team and their interactional activities towards buyers may be the one aspect that sets a business apart. Research shows that the selling process is moving towards maintaining relationships; often, the salesperson is the only link between the business buyer and the sales organization (Dixon & Tanner, 2012). The sale takes place between the business buyer and the salesperson on a personal level (Echeverri & Skalen, 2011; Hohenschwert & Geiger, 2015). Current sales literature lacks information about the relation-based interactional business environment (Corsaro and Snehota, 2010; Eckheverri et al., 2011; Hohenschwert et al., 2015; Salomonson et al., 2012), and so research has been increasingly interested in value and value formation (Blocker, Cannon, Panagopoulos, & Sager, 2012; Haas, Snehota, & Corsaro, 2012). However, there are very few studies from the buyer's point of view (Hohenschwert & Geiger, 2015; Salomonson, Åberg, & Allwood, 2012).

This study tries to fill the gap in sales literature by focusing on the buyer's perspective and examining their interactional value expectations for sales interactions. The sales literature to date does not appear to have been able to define the buyer's relational and interactional expectations (Blocker et al., 2012; Dion, Easterling, & Miller, 1995; Dixon & Tanner, 2012; Doney & Cannon, 1997; Grönroos & Voima, 2013; Haas et al., 2012; Rodriguez, Dixon, & Peltier, 2014). Recent studies show that a business buyer's expectations for the initial sales meeting differ from those of the salesperson. Buyers believe that salespeople lack professional preparation and follow up, innovativeness, organizational commitment, long-term partnerships and customer insight (Kaski, Hautamäki, Pullins, & Kock, in press). The sales literature does not address the buyer's expectations of what should happen in sales interactions, nor does it define the process of relational orientation in sales (Biong & Selnes, 1995; Sheth & Sharma, 2008). Therefore, salespeople require more knowledge of the relational aspects of buyer-seller interactions

from the perspective of personality to better understand and define how the buyer interprets the interactional value formation (Echeverri & Skalen, 2011; Hohenschwert & Geiger, 2015). This study will focus on the personality types of buyers and look for interactional expectations beyond psychological needs with the aim of determining the buyer's personal expectations of the sales interaction.

Selling activities are required to continually evolve into an interactional approach since information about products, solutions, services and where to buy is readily available (Adamson, Dixon, and Toman, 2012; Kim, 2014). Research indicates that if the buyer was at one time passive in the buying process (Cash & Crissy, 1964), today the impetus is on the buyer to initiate business interactions (Agndal, 2006; Liang & Parkhe, 1997; Overby & Servais, 2005). As selling has changed from selling products to selling services and intangibles, buying may also be seen as a shift from the transactional buying of products to the relational buying of solutions and intangibles. This change will affect sales organizations; transactional selling will shift to digital channels and salespeople will move towards relational selling activities (Adamson et al., 2012; Rackham & De Vincentis, 1999). The relational and interactional skills of the sales force are becoming more important than ever, and this rapidly changing aspect of business requires a salesperson's self-efficacy and confidence in their own personality and behaviour (Dion et al., 1995; Haas et al., 2012; Tuli, Kohli, & Bharadwaj, 2007). Furthermore, salespeople need to be able to help customers see different possibilities in their role as an architect of change for their customers (Dixon & Tanner, 2012). This study will examine sales interactions from an individual perspective between the salesperson and the business buyer, where the buyer's interactional expectations need to be met (see Baumann & Le Meunier-FitzHugh, 2014; Hohenschwert & Geiger, 2015).

Since the sales profession has become more demanding than ever, it is necessary to study expectations for buyer-seller interactions within the scope of this new reality. Sales literature often focuses on the salesperson's perspective with relatively few studies from the business buyer's point of view (Blocker, Cannon, Panagopoulos, & Sager, 2012; Borg & Johnston, 2013; Dixon & Tanner, 2012; Haas et al., 2012; Salomonson et al., 2012). This study will concentrate on the buyer's expectations of buyer-seller interactions by considering their point of view and personality type, with the prediction that these factors will influence the buyer's expectations of interaction.

Theoretical Background

Managing Buyer-Seller Interactions

The sales profession can be defined as a human-driven interaction in a value creation context. This definition transforms the traditional interpretation of sales by describing it as a human-driven phenomenon (Dixon & Tanner, 2012). Additionally, recent sales research focuses on value creation and interaction in buyer-seller encounters (Echeverri & Skalen, 2011; Haas et al., 2012; Salomonson et al., 2012). However, existing sales literature neglects to fully consider the interaction-based understanding of what salespeople should do to fulfil a buyer's needs, or how to better understand human perspectives and draw out a buyer's latent needs and motives (see Haas et al., 2012).

In their need-satisfaction theory, Cash and Crissy (1964) conclude that customers buy because they have needs to be satisfied. From this perspective, the sales profession must provide solutions by identifying needs; however, the role of sales is more demanding now and needs identification is not enough. Buyers look for long-term relationships, and their demands come from a more comprehensive perspective and skill set than ever before (Haas et al., 2012; Hohenschwert & Geiger, 2015). This may be due to a buyer's complex business and solution needs, to which it may be challenging to find answers without consultation and help from other companies in a similar position. However, buyers differ in how they prefer to be approached, how much information they need and how they make decisions (Dion et al., 1995). As a result, salespeople must have a deep understanding of different business buyers in order to help them see their business possibilities and to meet their expectations (Blocker et al., 2012; Dixon & Tanner, 2012; Tuli et al., 2007).

Considering these changes in buying and selling, the sales department is no longer only a tactical group executing the strategy of the company (Cron, Baldauf, Leigh, & Grossenbacher, 2014; Piercy, 2010). Sales organizations play a crucial role in today's business world. Grönroos and Voima (2013) have studied interaction-based value and claim that face-to-face buyer-seller interactions are how customers perceive value. While sales

literature provides varying definitions of value, this paper will define value formation as interactional and dependent on both the buyer and the seller (Woodruff & Flint, 2006).

In b-to-b sales, buyers often have the power to choose where to buy, and by extension select who will best satisfy their needs and go ahead to sales interaction. Sales literature has frequently discussed adapting to the buyer by using influencing tactics and communication (Spiro et al., 1977; McFarland, Challagalla, & Shervani, 2006; Weitz, 1981; Weitz, Sujan & Sujan, 1986; Williams & Spiro, 1985). Evidence suggests that salespeople, rather than buyers, adapt their approach according to the situation (Edvardsson, Holmlund, & Strandvik, 2008), but there is no research to assist them with determining a buyer's expectations or personality type. Without knowing the personal needs behind the expectations, adapting to a customer's needs can be challenging. Regardless, salespeople need to adapt to different situations and customers by providing tailored solutions (Román & Iacobucci, 2010; Weitz et al., 1986). Recent studies show that adaptive selling behaviour has resulted in increased sales performance and better relationships with the buyer (Giacobbe, Jackson, Crosby, & Bridges, 2006).

Personality Types

The Myers-Briggs Type Indicator (MBTI) can assist sales organizations in identifying the expectations of a buyer. While there are several ways to conceptualize and assess personality, this study will focus on the MBTI. This personality assessment is based on Carl Jung's theory of psychological types and it reports personality types on four scales: Extraversion – Introversion, Sensing – iNtuition, Thinking – Feeling, and Judging – Perceiving (Myers, 1990). According to Myers (1990), the MBTI is primarily concerned with the differences in how people focus their attention, absorb information, make decisions, and adapt to situations. The eight preferences are combined into sixteen types, each representing a certain set of characteristics (Myers & McCaulley, 1985). These preferences are (Myers, 1990):

- Extraversion   (E)   Interested in people and things in the world around them;
- Introversion   (I)   Interested in the ideas in their minds that explain the world;
- Sensing   (S)   Interested in what is real and can be seen, heard and touched;
- Intuition   (N)   Interested in what can be imagined and seen with 'the mind's eye';
- Thinking   (T)   Interested in what is logical and works by cause and effect;
- Feeling   (F)   Interested in knowing what is important and valuable;
- Judging   (J)   Interested in acting by organizing, planning, deciding;
- Perceiving   (P)   Interested in acting by watching, trying out, adapting.

As Myers and McCaulley state (1985): […] according to theory, each of the 16 types results from a preference for one pole of each of the four preferences over the opposite pole. A preference of any dimension is designed to be psychometrically independent of the preferences of the other three dichotomies, so that the preferences on the four dichotomies yield sixteen possible combinations called types, denoted by the four letters identifying the poles preferred (e.g., ESTJ, INFP). The theory postulates specific dynamic relationships between the preferences. For each type, one process is the leading or dominant process and a second process serves as an auxiliary (functions S/N, T/F). Each type has its own pattern of dominant and auxiliary processes and the attitudes (E or I) in which these are habitually used. Determining these dynamic relationships is enabled by the J-P dichotomy of the MBTI. The characteristics of each type follow from the dynamic interplay of these processes and attitudes. (p. 2-3)

The four functions, including the opposite dichotomies, are briefly defined according to Myers (1992):

- Extraversion – Introversion: extraverts direct their energy toward people and objects in their environment. They like to communicate and interact with the outer world and are often very social and action-oriented. Introverts are more concentrated on their own experiences and ideas. They need privacy and time to think about new concepts and ideas before discussing them.
- Sensing – Intuition: sensing types concentrate by gathering information in the moment and on what they can perceive with their five senses. They are often realistic and observe facts and events that happen at the present time or in the past. Intuitive types are more focused on the future and imagined possibilities. They seek patterns and

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interrelationships which cannot be seen but of which they have a vision, and are often theoretical, abstract and creative in nature.

- Thinking – Feeling: thinking types base their decisions on logical analysis and on objective cause and effect relationships. They are often analytical and impersonal when attempting to find explanations. Feeling types focus on their own values when they make decisions. They also want to understand other people, and try to consider how a decision may affect others.

- Judging – Perceiving: judging types prefer an organized lifestyle and to make final decisions. They make schedules and plan their future with purpose and decisiveness. Perceiving types prefer a spontaneous and flexible lifestyle and the freedom to make decisions on their own time. They are interested in new possibilities and are open to frequent changes in direction.

The communication style of each type differs; for example, Extraverts prefer face-to-face interactions and the opportunity to discuss decisions, while Introverts are likely to prefer written communication and time to work on their own to think through a decision before it is made. Sensing types desire specific and concrete information to make decisions or solve conflicts, whereas iNtuitives prefer more general communication and decision-making in which other potential connections are also considered. Thinkers prefer communication that handles tasks and decision-making that is based on logic where all cause and effect relationships are discussed; Feelers want more personal communication where they are recognized as individuals, and in their value-based decision-making strive to ensure everyone is included. Judging types want clear and decisive communication, quick and firmly made decisions, and resolved conflicts to be forgotten, while Perceiving types prefer wide-ranging communication and to gather sufficient information before making a decision; any conflicts should be discussed before a final resolution is made.

TABLE 1. PERSONALITY TYPES BRIEFLY ILLUSTRATED AS ADAPTED FROM MYERS & MCCAULLEY, 1985

ISTJ	ISFJ	INFJ	INTJ
"They follow the rules and guard the process."	"They care and do the work."	"They are the ones to put it in writing."	"They analyse the alternatives."
ISTP	**ISFP**	**INFP**	**INTP**
"They do their own thing."	"They are loyal and value driven."	"They act as peacekeepers."	"They work alone for the group."
ESTP	**ESFP**	**ENFP**	**ENTP**
"They fight fires or start them."	"They keep them laughing."	"They can be great integrators."	"They offer solutions and identify opportunities."
ESTJ	**ESFJ**	**ENFJ**	**ENTJ**
"They take responsibility and get things done."	"They bring human comforts to light."	"They are enthusiastic communicators."	"They are leaders. They want not to be led."

The study by Dion et al. (1995) of successful buyer-seller relationships found that purchasers and sellers often possessed the same few MBTI types: the most common personality types in sellers were also the most common buyer types. ESTJ and ISTJ personality types totalled 52.5 percent of the individuals surveyed, and ST was the most common functional pair (Dion et al., 1995). Multiple studies in Finland have also been able to classify managers into these same personality types (Järlström, 2000; Routamaa, 2011; Routamaa and Ou, 2012; Routamaa, Yang, & Ou, 2012).

The functional pair ST reveals sensing and thinking preferences, which means that the salesperson should focus on facts when interacting with an ST buyer. In an interaction, the ST customer focuses on details and the logical implication of the specifics. On the contrary, the NT customer tends to focus on the big picture and how this generalization can create logical options (cf. Myers & McCaulley, 1990). Although ST is the most common managerial type in many countries such as Finland and China, NT is more frequently found in the USA and Sweden (Routamaa et al., 2010; Routamaa & Ou, 2012). Interestingly, SF and NF are common types in the retail sector

(Routamaa & Hautala, 2009; Schaubhut & Thompson, 2008).

Many scholars have studied adaptive selling and the need for salespeople to adjust their conduct to the customer's demeanour (cf. Spiro & Weitz, 1990). Buyer-seller meetings are built on interaction, but the differing cognitive processes, personalities and needs of each party may affect the outcome (cf. Myers & McCaulley, 1990). While the study by Dion et al. (1995) reveals that a salesperson's personality type does not have a significant unilateral influence on sales performance or on trust in a salesperson, they did find that if the buyer perceives a connection with the salesperson, sales performance increases and the buyer feels that it is a positive sales relationship. Today's salespeople build specific interactional value when communicating with the business buyer (Blocker et al., 2012; Echeverri & Skalen, 2011; Hohenschwert & Geiger, 2015; Weitz et al., 1986).

Method

The data consist of 20 professional business buyers in b-to-b buying and selling settings in Finland. The data were collected from a larger ongoing study concerning the work of professional business buyers in twelve different companies. All 20 buyers had at least three years of experience in purchasing and worked as procurement directors or managers, sourcing managers or professional buyers. The buyers worked in industrial, logistical, chemical, food or professional services. Of the 20 buyers, nine worked in industrial services, three in logistics, three in food services, three in professional services and two in chemicals. In order to compare the personalities of professional buyers and salespeople, 51 sales professionals from the b-to-b companies were also analysed. This study uses a mixed method approach, which combines qualitative interviews with the personality type results of professional buyers compared to sales professionals (see Hurmerinta-Peltomäki & Nummela, 2006).

The data were collected during the year 2015. All of the buyers were interviewed twice; the first round focused on buying on an individual level, including important considerations in buying, their expectations for buyer-seller interactions, and how they would develop salespeople's interactional activities. Following completion, all of the participants, including the 51 sales professionals, were emailed a link to complete the MBTI. The second round of buyer interviews took place two to five months after the initial interview and focused on the internal purchasing processes of buyer organizations, their buying policies, and on expected landmarks during buyer-seller interactions.

After all interviews were complete, the participants discussed whether their self-evaluated MBTI matched their real personality type. Informants who received low scores (7 points or less) on one dimension of the MBTI, confirming was made with a time. It was determined that all of the participants had been assigned the correct MBTI. A Finnish version of the Myers-Briggs Type Indicator was translated and validated by Routamaa's research team at the University of Vaasa, Finland; according to Järlström's (2000) study, the construct validity and reliability of this version was confirmed during a validation process of several years.

Qualitative, transcribed data were first analysed by the ATLAS.ti program and divided into 22 codes by a research group. Next, codes concerning buyer expectations for sales interactions and expectations for salespeople's activities in sales encounters were identified using the qualitative interpretive analysis (Rubin & Rubin, 2011) in order to interpret data towards the personality theory. Both researchers have a deep knowledge of the MBTI personality theory, and the interviews were analysed without systematically searching for the participants' personality type. These selected findings, which revealed the expectations of certain personality types, were discussed and confirmed by both of the researchers. After analysing transcribed text by every participant, one researcher compared the MBTI types to the findings while the second researcher confirmed the findings; therefore, the validity of the qualitative analysis is high.

Findings
Personality Type Data

The personality type distribution of the buyers is presented in Table 2. The sample is small but is considered an accurate representation of the occupation. It is evident that the common personality types in the general and in business (cf. Routamaa & Hautala, 2009) are also the most common among professional buyers. Sixty percent of the identified personalities represent the ST type, which corresponds well with Dion et al.'s (1995) results. STs are practical, fact and detail oriented, and logical decision makers who prefer a structured and planned environment.

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Sixty percent of the buyers identify as Extraverts, ready to discuss challenges openly and make firm decisions. Forty percent of the buyers are Introverts who require detailed information and, after additional deeper interactions, need private time to absorb the details and conditions prior to proceeding with a purchase. A minority of buyers (25%) are iNtuitives who want to consider the big picture before the next interactional encounter. A total of 75% of the professional buyers are Sensing types to whom it is important to explain all information very clearly; if the seller is not able to accurately portray the facts, the buyer may not proceed with the interaction.

As demonstrated in Table 3, buyers are significantly more introverted than sellers. When an extraverted seller meets an introverted buyer, the buyer may feel uncomfortable listening to the seller's wordy presentation. Buyers are slightly more likely to be sensing than sellers; if an intuitive seller meets a sensing buyer, they may find that they are not on the same page. As well, sellers are somewhat more often thinking types, preferring to keep the discussion focused on logical facts. Thinking sellers will want to keep this in mind when working with a feeling type buyer, who may want to engage in small talk to break the ice before discussing business. Finally, buyers are slightly more often judging types who prefer a well prepared and organized meeting, whereas a perceiving seller may review the situation and adjust accordingly.

TABLE 2. PROFESSIONAL BUYERS' PERSONALITY TYPE DISTRIBUTION

N = 20

ISTJ	ISFJ	INFJ	INTJ
N = 3 %= 15.00 ccc	N = 1 %= 5.00 c	N = 0 %= 0.00	N = 0 %= 0.00
ISTP	**ISFP**	**INFP**	**INTP**
N = 2 %= 10.00 cc	N = 1 %= 5.00 c	N = 0 %= 0.00	N = 1 %= 5.00 c
ESTP	**ESFP**	**ENFP**	**ENTP**
N = 2 %= 10.00 cc	N = 0 %= 0.00	N = 2 %= 10.00 cc	N = 0 %= 0.00
ESTJ	**ESFJ**	**ENFJ**	**ENTJ**
N = 5 %= 25.00 ccccc	N = 1 %= 5.00 c	N = 0 %= 0.00	N = 2 %= 10.00 cc

	N	%
E	12	60.00
I	8	40.00
S	15	75.00
N	5	25.00
T	15	75.00
F	5	25.00
J	12	60.00
P	8	40.00
IJ	4	20.00
IP	4	20.00
EP	4	20.00
EJ	8	40.00
ST	12	60.00
SF	3	15.00
NF	2	10.00
NT	3	15.00
SJ	10	50.00
SP	5	25.00
NP	3	15.00
NJ	2	10.00
TJ	10	50.00
TP	5	25.00
FP	3	15.00
FJ	2	10.00
IN	1	5.00
EN	4	20.00
IS	7	35.00
ES	8	40.00
Sdom	6	30.00
Ndom	2	10.00
Tdom	10	50.00
Fdom	2	10.00

Note: c = 1 person.   Print date:

The statistics indicate that buyers are significantly more often introvert-sensing (IS); these buyers must be approached carefully by presenting clear and concise written details, then left to process the information. In other words, the buyer-seller personality fit should be carefully taken into account during selling interactions. Personality similarity is considered a positive feature in buyer-seller encounters, as opposed to most other situations where different personalities are considered an asset in creative and innovative teams (Routamaa, 2014).

TABLE 3. PROFESSIONAL BUYERS COMPARED WITH SALES PROFESSIONALS

Professional Buyers

compared with

Sales Professionals

N = 20

Comparison between Professional Buyers and Sellers

ISTJ	ISFJ	INFJ	INTJ
N = 3	N = 1	N = 0	N = 0
% = 15.00	% = 5.00	% = 0.00	% = 0.00
I = 1.91	I = 0.00	I = 0.00	I = 0.00
¢¢¢	¢		

ISTP	ISFP	INFP	INTP
N = 2	N = 1	N = 0	N = 1
% = 10.00	% = 5.00	% = 0.00	% = 5.00
I = 5.10	I = 0.00	I = 0.00	I = 0.85
¢¢	¢		¢

ESTP	ESFP	ENFP	ENTP
N = 2	N = 0	N = 2	N = 0
% = 10.00	% = 0.00	% = 10.00	% = 0.00
I = 0.64	I = 0.00	I = 5.10	I = 0.00
¢¢		¢¢	

ESTJ	ESFJ	ENFJ	ENTJ
N = 5	N = 1	N = 0	N = 2
% = 25.00	% = 5.00	% = 0.00	% = 10.00
I = 0.85	I = 0.64	I = 0.00	I = 1.27
¢¢¢¢¢	¢		¢¢

	N	%	I
E	12	60.00	0.71*
I	8	40.00	2.55*
S	15	75.00	1.09
N	5	25.00	0.80
T	15	75.00	0.93
F	5	25.00	1.27
J	12	60.00	1.06
P	8	40.00	0.93
IJ	4	20.00	2.55
IP	4	20.00	2.55
EP	4	20.00	0.57
EJ	8	40.00	0.82
ST	12	60.00	1.09
SF	3	15.00	1.09
NF	2	10.00	1.70
NT	3	15.00	0.59
SJ	10	50.00	1.11
SP	5	25.00	1.06
NP	3	15.00	0.77
NJ	2	10.00	0.85
TJ	10	50.00	1.11
TP	5	25.00	0.71
FP	3	15.00	1.91
FJ	2	10.00	0.85
IN	1	5.00	0.85
EN	4	20.00	0.78
IS	7	35.00	3.57*
ES	8	40.00	0.68
Sdom	6	30.00	1.02
Ndom	2	10.00	0.73
Tdom	10	50.00	1.11
Fdom	2	10.00	0.85

Note: ¢ = 1 person.
Base total N = 51. Groups are independent.

Print date:

* < .05, ** < .01, *** < .001

Interview data

The analysed interview data show several examples of how the assessed personality types of the professional business buyers frame the answers that they give, and confirms the MBTI theory and the findings of this personality type study. The buyer citations that follow are collected from the buyer interviews. In this section, the main findings will be illustrated with citations from the participants.

When sales professionals are extraverts (E) and professional buyers are introverts (I). This study's personality type data illustrate that sellers are more often extraverts. In situations where an extravert seller met with an introvert buyer in buyer-seller interactions, it was often felt to be an interaction where the seller does not listen. Introvert (I) buyers often expressed that the seller was too aggressive; one buyer stopped answering a seller's phone calls because the frequency of the calls was affecting his work. Below are some examples of an introverted buyer's interpretation of an extraverted seller's approach:

- "I think it surprised me many times…that in [certain] situations…sellers [want to] sell their own things…but they do not listen to the customer" (Buyer ISTJ).
- "I think it is a plus if you are able to listen once in a while…when you are a seller…I know there are also sellers…that do not give you any time to talk" (Buyer ISTJ).
- "It drives me away…too enthusiastic and still aggressive somehow…and [the seller] contacts me too often…sometimes he was calling twice a week and distracting me from my own tasks" (Buyer INTP).

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One introvert buyer shared that he once had to turn his mobile phone to silent because the seller was calling too many times per week, which he found frustrating. When the interviewer asked the buyer why the seller would be so demanding, the buyer (INTP) answered, "I think [the seller] wanted to close the sale quickly…but I was still wondering what to do. He wanted to arrange a meeting and come on over…I was not ready [to make a decision]". In this case, it is likely that the aggressive seller will lose the sale; this citation accurately reveals why it is important to give time and space to an introverted person.

When sales professionals are intuitive (N) and professional buyers are sensing (S). As personality type data show, buyers in this case are slightly more likely to be sensing compared to sellers, who tend to be intuitive. Interviews show that in situations where the buyer is sensing (S) and the seller is intuitive (N), the participants in an initial interaction might not understand each other – although they speak the same language, they interpret it differently. Sensing buyers desire precise details about the purchase; otherwise, they are not able to proceed in their buying process. The buyers often claimed that, despite repeated attempts to obtain this information, the seller did not respond with the required details; the likely outcome is that the buying process will not continue with this intuitive salesperson. Citations illustrating these scenarios follow:

- "I have been in situations where the other side is not so patient.…Because of my role…I need to get a lot of really detailed information…and then I need to get all of the information exactly right…[the seller] may get nervous about my demands" (Buyer ISFJ).
- "We need detailed information…If the seller is able to [provide the required information]…it is clear that he knows what he is doing" (Buyer ISFJ).

The latter quotation suggests that this buyer would think highly of this seller because he provides the buyer with the requested information. It also demonstrates the importance of understanding different personality types. This understanding is equally important for buyers in order to look beyond personality types and make a decision regardless.

When sales professionals are thinking (T) and professional buyers are feeling (F). In this study, it was determined that sellers are more likely to be thinking (T) types. A T-type seller does not often engage in small talk, because they prefer to address the facts; an F-type buyer would get to know the seller first and understand the seller's perspective of the ongoing business case:

- "I seek…to be on the same page as soon as possible…that [the seller] is socially intelligent and knows how to read different people.…It is really important…that you get to know each other before you get down to business" (Buyer ESFJ).
- "… that we have clear cooperation…where the seller listens to what we want…and he gets things done internally [in his own organization].…It is like a cooperative partnership…which is a win-win situation…I think these are the best cases" (Buyer ENFP).
- "I think that the interactional situation is really important…and that in a constructive interaction…you try to proceed in your tasks…and take them further.…And I also hope that the sellers would be able to perceive…what kind of things are important to different buyers" (Buyer ENFP).

This human aspect suggests that feeling buyers look for more customer centred interaction where the seller focuses on buyer needs and potential problems. The professional buyers hoped that sellers would concentrate more on how to solve the customer's problems or business needs. Buyers often claimed that too many sellers only talk about their own products.

When sales professionals are perceiving (P) and professional buyers are judging (J). This pairing generated the most complaints from buyers. The difference between the two types was seen in follow up calls after the sales interaction. If the seller promised to complete a task after the meeting, it is crucial to the buyers that it be completed. Buyers in new business situations felt it was even more important that the seller follow up; an inability to do so may reveal the salesperson's expected behaviour in the future and incapacity to honour their word.

- "If we decided that the task will be finished tomorrow…and at a certain time … I think that it must be done by that time…so that I do not need to ask for it later.…[If the follow up is done as promised]…it makes me feel like I can trust [the seller]" (Buyer ISTJ).

- "I say that the best seller who visits here is the one who…when I have a real need…makes a great effort to [get it done]…and take the case to the end" (Buyer ENTJ).
- "You cannot just forget things…if you promise that [you] will clarify a few things by a deadline…I take it seriously.…If we decide something I truly look forward to having the answers…and if not…without a good explanation…that always decreases the trustworthiness" (Buyer ISFP).

These Judging and Perceiving preferences came into discussion when the buyers were meeting new salespeople. It seems that, in cases where the seller is meeting the buyer, the buyer expects the initial meeting to be led by the seller and for the meeting to start on time. In these citations below, the buyers were not satisfied with the sellers' behaviour:

- "I have had a case where…he just came without preparing at all…and a bit late.…Our chemistry did not fit…because I like to do things on time" (Buyer, ISTJ).
- "You must be prepared. If we do not know you and you are coming to meet us for the first time…you need to know who you are meeting, in which company, what we do and what you could sell.…If the seller just comes without preparations to the meeting…[to say] that I am from this company and we have these kind of solutions…I think this seller does not appreciate our time" (Buyer, ESTJ).

Additionally, the professional buyers complained if salespeople did not have a systematic approach or did not prepare for the meeting; in interactions between judging buyers and perceiving sellers where a positive relationship was not developed, the buyer would contact the sales organization to request a different seller. Although the buyers said that the relational aspect of that relationships would not be so fruitful with this salesperson than with a person with whom there would be chemistry. According to an ENTJ buyer, "Of course I could live with this situation… work with this salesperson…[but] I cannot think too much about our chemistry." The interviewer then asked, "How would the cooperation be with a salesperson with whom you have chemistry…will the tasks be done as promised and will he normally be on time?" The buyer replied, "Yes. It would be different…with this non-chemistry seller…it might be only ordering and buying but not more." One ESTJ buyer explains, "I was really thinking…that I should call his supervisor and ask for a different salesperson…because I think it is a basic requirement that we work with suitable salespeople.…If it does not work, you just need to call the sales organization."

Conclusion

This study shows that congruence in personality types matter, and is even more important in buyer-seller interactions as the customer companies look for long-term relationships (Biong & Selnes, 1995). If the buyer's and seller's approach to communication do not match, it may provide grounds to terminate the relationship. This study supports this claim, particularly in situations where the professional buyer was the judging type and interacting with a perceiving type salesperson.

The world of sales has transformed from transactional selling to relationship building (cf. Adamson, Dixon, & Toman, 2012; Biong & Selnes, 1995). Business buyers meet with salespeople when they need to develop their business and will begin analysing the potential sales partners. The role of sales organizations appears to be as the change architect, who first identifies the customer's business problem and their needs and wants, then offers a solution based on how the buyer interprets added value (cf. Dixon & Tanner, 2012). The value here could be seen as the intangible compatibility between the salesperson and the buyer. If this is the case, the buyer's preferred style of interaction must be considered in order to create this value. This study shows that professional buyers often favour interactions where salespeople listen carefully and answer questions in full. These findings confirm the Myers (1990) personality type theory that introverts require time to think before proceeding and that sensing types look for facts and detailed information.

While interviewing the professional business buyers about successful buyer-seller interactions, the buyers discussed the seller's attitude towards their needs. It may be interpreted that there are areas for improvement in the development of the salesperson's attitude; however, this may be a misunderstanding that can be attributed to the personality types of salespeople and buyers. For example, if a sensing buyer was looking for detailed information from the intuitive salesperson who did not provide it, it could be attributed as a misinterpretation of the request. Regardless, a misunderstanding of this scale may cause the salesperson to lose a buyer's trust.

Professional buyers seem to appreciate precision in a salesperson's behaviour. Based on the studies of the personality types, the most common types of managers in Finland are ISTJ, ESTJ and ENTJ; purchasing managers trend towards ESTJ and ENTJ (cf. Routamaa et al., 2009). This study confirms these findings but also contributes new knowledge to the type theory in this business context, where purchasing department managers are also Introvert and Introvert-Sensing types. In other words, the types with a preference for introversion focus their thoughts internally and need more time to make a decision than extraverts. In addition, these results confirm earlier studies which conclude that buyers tend to be a Judging type. The results may indicate that the preferences of professional business buyers relate to finding in earlier studies (Routamaa et al., 2009; 2010; 2012).

This study demonstrates the expectations that business buyers have for buyer-seller interactions in today's more complex business environment. As a result of this research, salespeople may develop a deeper understanding of b-to-b buyer-seller encounters as a mediator of interactional value. This study also shows the important role that personality factors play in the formation of value in buyer-seller interactions. It may be concluded that personality is a key matter when fulfilling buyers' expectations in buyer-seller interactions and when aiming to build up a long-term professional relationship.

Future research in this field could examine how the expectations of business buyers need to be developed in contemporary buyer-seller interactions and how the salesperson should proceed in a meeting at the point in which new buyer-seller meetings have decreased. Future research could also examine how salespeople can determine the MBTI type of a buyer when they encounter.

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Pushing start-up on the market: what role for incubators?

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Introduction

Starting from the 80s, business incubators have been increasingly considered as relevant actors for public policies aimed at the development of the new ventures. In Italy, the law n. 221/2012 has pushed forward a renewed interest for this topic, since it introduces the idea of "certified" incubator of start-ups, by listing a set of requirements that qualify a "good" incubator.

Despite the recent activity of the policy makers and the large number of scholars' contributions, there is still a lack of understanding about how incubation processes impact on the development of the start-ups and there is not a clear assessment of the effectiveness of incubators' contribution (Tavoletti, 2013) in the innovation landscape. Given this background, our research aims at understanding whether or not mediation services offered by certified incubators help start-ups to develop early business-relationships. We want to shed light on the link between the characteristics of incubation process and the development of early market-relationships of the hosted start-ups. This topic is particularly relevant as the creation of early market-relationships is considered a "critical" step in new-ventures' development, due to both an under-developed marketing function (Aaboen, Dubois, & Lind, 2011; La Rocca, Ford & Snehota, 2013) and several liabilities that affect start-ups (Roseira, Ramos, Maia, & Henneberg, 2014).

The paper is structured as follows: in the following paragraph we illustrate in brief the theoretical background; in section 3 we explain the research objectives; in section 4 we describe the research methodology; in section 5 the result of the survey are illustrated and analyzed; lastly, in section 6 we draw up some reflections and we outline theoretical and managerial implications, as well as the limitations of the research.

Literature background

In this paper we consider incubators as organizations that are expressively oriented to support new ventures during the initial stages of their life (Aernoudt, 2004; Grimaldi & Grandi, 2005; Hackett & Dilts, 2004). Two main strands have been arising within the *resource-based* literature referred to the relationship between incubators and start-ups. The first one takes into account the new-ventures perspective, and considers incubators as facilitators that help start-ups to access tangibles and intangibles resources (McAdam & McAdam, 2008; Mian et al., 2012). The latter one takes the incubators' perspective and highlights the range of services they provide. Among the classifications most frequently mentioned, that of Bergek & Norrman (2008), distinguishes among *infrastructure* (localities, office facilities, administrative and other services), *business support* (coaching/training activities, entrepreneurial training and business development advice, development of products / services, services concerning general business matters such as accounting, legal matters, advertising and financial assistance) and *mediation* (research of potential customers, suppliers, financers, technological partners, and consultants). Mediation (or networking) services are so called because they represent a "bridge" between the incubated companies and their environment: they are further distinguished between those that connect start-ups with other players in the business system (*network mediation system*) and those that mediate requests coming from the institutional environment to the incubated companies (*institutional mediation*).

At first, this second strand mostly focused on technological and financial mediation, except for a few contributions produced in the early 2000s (Peters et al., 2004, Grimaldi & Grandi, 2005, von Zedtwitz & Grimaldi, 2006) that expressly refer to the creation of relationships. Among the mediation services, the activities aimed at

facilitating the connection with potential customers, that is to help start-ups to embed within their business system (Aerts, Matthyssens, & Vandenbempt, 2007), started receiving a more marked attention only in recent years. The analysis of the contributions dealing with the assessment of the action developed by the incubators, especially in terms of outcome/impact, confirms the difficulty in tracing explicit references to market relations as an output of the networking services provided by incubators. From our perspective, one of the main limitations of these studies (Colombo & Delmastro, 2002; Haapasalo & Ekholm, 2004; Aerts, Matthyssens, & Vandenbempt, 2007) is to be found in the fact that the reference to the development of "business relationships" is too generic, and it hardly allows to isolate the relationships ~~activated~~ with potential customers of the start-ups.

Thanks to McAdam, Marlow (2008) and Schwartz (2013), supporting the development of relationships between start-ups and potential suppliers and customers is considered as one of the most prominent task of incubators. In their research, these authors assume that the start-ups and generally the younger companies suffer the lack of stable business relationships and require a certain time horizon in order to gain legitimacy and consolidate their credibility and reputation in the market. This situation can be tackled not only by developing direct and targeted actions brokerage with potential customers, but also indirectly, through a positive and consolidated image of the incubator (Roseira et al., 2014).
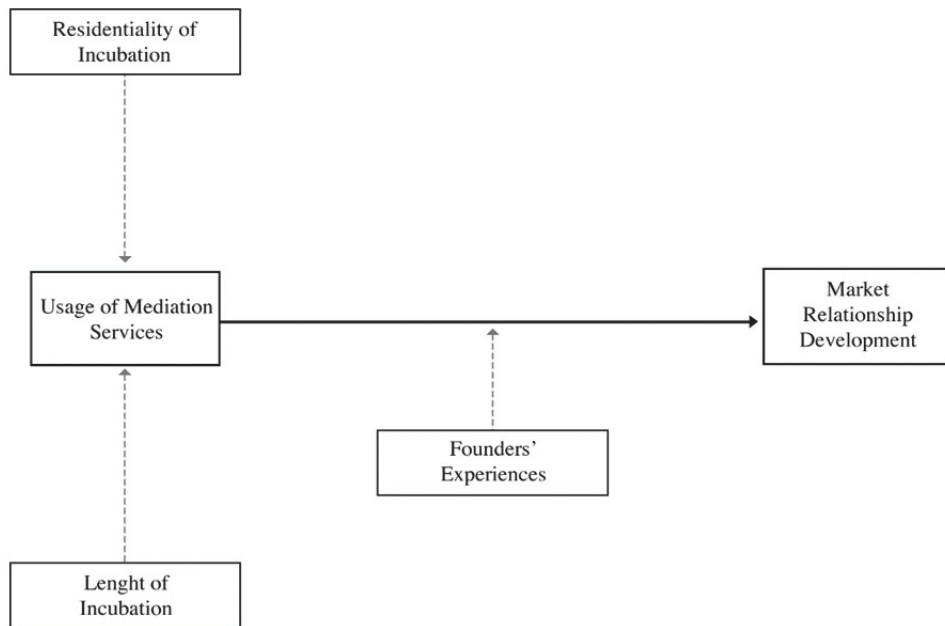
The networking services are central in the so-called "accelerators", which can be considered the last frontier of incubation models, and in which the shift of the focus toward intangible, knowledge-intensive, support services is even more evident. In their study, Pawels et al. (2016) observe how accelerators differ from traditional incubators especially for mentoring services, that help incubated companies to connect with potential customers and investors. Especially in the configuration that the authors define "ecosystem builder", the network built by the accelerator is almost exclusively oriented toward the potential customer base.

Research objectives
In the light of the most recent theoretical contributions, our research design is oriented at identifying the variables that influence the development of the early market-relationships by the start-ups involved in the incubation process. The ultimate goal is to build and test a conceptual framework including the variables that may influence the development of the first business relationship. The conceptual model assumes the existence of some relationship between two features of the incubation process (length and residentiality), and the use of mediation services (number, type and combination) from the incubated firms. Moreover, it suggests that the relationship between the use of mediation services and the actual development of the early relationships with customers is moderated by the experience of founders (see

Figure 1).
Figure 1 - The conceptual framework being built

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│ Residentiality of│
│   Incubation     │
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         ┆
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┌──────────────┐                              ┌──────────────┐
│ Usage of     │─────────────────────────────→│   Market     │
│ Mediation    │                              │ Relationship │
│ Services     │                              │ Development  │
└──────────────┘                              └──────────────┘
         ↑                      ┆
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         ┆              │ Experiences  │
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│  Lenght of   │
│  Incubation  │
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At this stage of research, due to the limited amount of available data, we cannot yet appreciate the relationships between the above-mentioned variables. Therefore we focused on two main goals: first, we want to shed light on what kind of service the start-ups use more frequently, among those provided by incubators. Secondly, we carry out a first and rough analysis of the effectiveness of mediation services provided by the incubators on the development of the early market relationships by the newly established firms.

More specifically, we want to understand what kind of mediation services are requested, what is the relevance, among these, of mediation services with potential customers, and if incubators are able to adequately cope with the demand from start-up. Finally, we want to observe the concrete ways in which mediation takes place and the degree of satisfaction of the companies interviewed in respect of the actions and interventions developed by the incubators.

Methodology and sample

Our study relies on a quantitative empirical research made over a sample of start-ups that where hosted by Italian certified incubators operating in Lombardy, that is the main Italian region, in terms both of number of firms and of GDP. Lombardy is also the main Italian region in terms of number of active certified incubators (at the time of this research, 8 out of 32), and in terms of start-ups that are hosted by this kind of organizations.
We choose to focus on "certified incubators" in order to homogenize the type of actors who provide professional support for the creation of a new venture. Since certified incubators must prove to have specific facilities, competencies and partnership with external actors, we therefore limited the heterogeneity in terms of incubators' characteristics and provision of services.

The pool of start-ups that we analyzed represents therefore a convenient sample and we can use the collected data for descriptive purposes only. Given the characteristics of our sample, we know that our findings cannot be generalized but our research is still capable to picture "attitudes and opinions" of start-ups regarding mediation services provided by incubators.
At the time of data collection, the official national register certified incubators listed 13 units based in Lombardy. We therefore analyzed the websites of these incubators, looking for the start-ups they hosted. One of those incubators had not an active website at the time of data collection, and we therefore excluded it from the analysis. At the time of the analysis, we therefore built a list of 276 start-ups that were hosted by certified incubators based in Lombardy.

For each one of those start-ups, we gather contact information by using their official website or third-party official and reliable sources (like LinkedIn founders' profiles, when available).

We therefore built a list of 247 contactable start-ups, namely those start-ups with at least one valid e-mail address or a contact form (we validated e-mail addresses through a third party online service). Among those 247, by analyzing their websites, we considered 18 companies as not eligible to be surveyed, since they could not to be considered "start-ups" or "incubated star-ups". We therefore came to a final list of 229 start-ups that composed our sample. Once we sent out the questionnaire, 6 out of 229 companies expressively declared to be uninterested to the survey, but we still considered them as part of the sample.

The online survey we made was targeted at owners of start-ups that were incubated by those Italian certified incubators on April, 2015. The questionnaire was prepared after a deep literature review and was pre-tested with a small group of potential respondents in order to gather significant information about the effect of the mediation services' availability and usage on the development of start-ups' early business relationship. We surveyed business owners by choosing a CAWI method (Computer Assisted Web Interviewing), since it helps an autonomous fill out of the survey, even if it favors the auto-selection of the sample (Iezzi, 2009). Data collection was made between January 2016 and April 2016. During this period, in order to maximize the response rate, we made two recalls via email and one recall via phone (by the phone we got 6 answers).

The questionnaire was built over two sections: the first one aimed to survey data about the start-ups, their founders and the type of incubation process experienced; the second one aimed at gathering information about the type of services used (among those offered by incubators), as well as the perceived quality and the impact on the creation of business-relationships.

The questionnaire's structure was aimed at controlling and cleaning answers before the data analysis (Hernandez, Stolfo, 1998). Out of the 229 invitations sent out, 61 questionnaires were filled in (response rate of 26.63%). For the purpose of this research, we were able to use 57 questionnaires (24.89% of all questionnaires originally sent out for participation).

The pool of start ups that we analyzed is equally distributed between the service and the manufacturing sectors. The most common legal form of start-ups is the limited company (44 on 57 start-ups).

The beginning of the activity is concentrated in two macro periods: in the years 2012-2016 (41 start ups on 57) and in the years 1981 – 2011 (16 start ups on 57). The target market is equally distributed between the national one (29 start ups out of 57) and the international one (28 out of 57).

The total number of founders among 57 surveyed start-ups is 184. With respect to the number of founders, the 70% of start-ups has between 2 and 4 founders. About 16% has only one founder, and the 14% has a number of founders ranging between 5 and 12.

The 79% of founders graduated from the university and 13.5% from the high school. In 45 start-ups on 57 (79%) at least two founders graduated from university. According to their age, 55 founders are in the range 20-25, while 44 founders are in the range 26-30.

The start-ups in which founders have a previous business experience are 32, while the start-ups in which founders have a previous working experience are 55.

Most of the start-ups are micro and small enterprises. Looking at the composition of the workforce, with regard to the educational background, most of the start-up has graduate employees, while the presence of workers with high school diploma is very limited.

As regards the incubation period, 47 start-ups declare that they are incubated between the period 2012 and 2016, while the remaining 10 start ups between period 2007 and 2011. For 42 start-ups on 57 the incubation period is still ongoing. Among those that have finished the incubation period, 10 reached the maximum available time. Around three out of four of the incubated start-ups (74%) have their headquarters in the incubator (residential incubation).

An analysis of services used by start-ups

According with the classification from Bergek and Norrman (2008) and focusing on those dedicated to business support and mediation, we grouped incubation services into three main categories: *Infrastructure* (spaces and facilities, administration), *Business support* (Access to funding calls, Corporate sheets editing, Product or service development) and *Mediation* (Customer search, Recruiting, Venture capitalist search, Suppliers search, Scientific partners search, Consultancy partners search).

Table 1 reports the relevance of each service, according to the frequency of usage expressed by start-ups for each item.

Services included into business support and mediation have been not used during the incubation period by the majority of surveyed start-ups. As known, incubators are first of all considered as organizations that provide a place, that is a shared environment and space, namely logistical support: we can confirm that this type of services

has gained the more interest by respondents (87.72% of respondents used at least one of the services included within this category). Among those, 14.03% where using both localities, office facilities and "administrative" services, while 73.68% were using only localities and office facilities.

Business support is the category with lower usage frequency (57.89% of respondents used at least one of the services included within this category). The percentage of start-ups that used the full range of those services (access to public founds, corporate sheets editing, product or service development) was 14,04%. The percentage of start-ups that used at least one service included into this category was 28,07%. Within this category, the access to funding calls is the most used service (42.11% of respondents), while the support to corporate sheets editing was used by the 33.33% of respondents and product or service development services were used by 26.32% of respondents.

Mediation services are used by two out of three surveyed start-ups (66.67% of respondents used at least one of the services included within this category). None of the surveyed start-ups used the full range of services included within this category, while 5 out of 6 services of the category where used by 3.51% of respondents. One out of five surveyed start-ups (21.05%) uses just one service from this category. The search for venture capitalists is the most used service within the mediation category (35.09% of respondents), while Customer search is the second one (31.58% of respondents). As regards the availability of mediation services, "customer search" is the less available (according to 26.32% of respondents), followed by networking with scientific and consultancy partners (21.05% of responses).

Table 1 - Relevance of services by usage

Service category	Service	Used (1)	Not Needed (1)	Not Available (1)
Infrastructure	Spaces and facilities	87.72	10.53	1.75
	Administration	17.54	49.12	33.33
Business support	Access to funding calls	42.11	40.35	17.54
	Corporate sheets editing	33.33	47.37	19.30
	Product or service development	26.32	50.88	22.81
Mediation	Customer search	31.58	42.11	26.32
	Recruiting	26.32	56.14	17.54
	Venture capitalist search	35.09	45.61	19.30
	Suppliers search	15.79	64.91	19.30
	Scientific partners search	22.81	56.14	21.05
	Consultancy partners search	28.07	50.88	21.05

N = 57

(1) Frequencies

The positive assessment of one service provided by an incubator and used by a start-up mainly depends by the capability of such service of adding value for the start-up itself. The majority of start-ups (66.67%) is pretty satisfied with the quality and the benefit gained from the use of spaces and facilities. Among other service categories, "business support" is the one with the higher average evaluation: support to access to funding calls, strategic corporate sheets editing and product or service development are top rated by respondents (12.28%, 17.54% and 15.79%, respectively). The mediation category is the one recognized with a lower average score, specially for the customer search service (22.81% of respondents rates it with a low score).

Table 2 - Evaluation of services according to the assessment of the start-ups

Service category	Service	Low (1)	High (1)	Average (2)
Infrastructure	Spaces and facilities	8.77	66.67	3.84
	Administration	7.02	8.77	3.00
Business support	Access to funding calls	21.05	12.28	2.68
	Corporate sheets editing	12.28	17.54	2.96

	Product or service development	15.79	15.79	2.70
Mediation	Customer search	22.81	12.28	2.60
	Recruiting	19.30	8.77	2.28
	Venture capitalist search	21.05	8.77	2.42
	Suppliers search	19.30	5.26	2.35
	Scientific partners search	15.79	10.53	2.45
	Consultancy partners search	21.05	12.28	2.61

N = 57

(1) Frequencies

(2) Start-ups rating of services (based on a 1 to 5 Likert scale, with 1 as a minimum value and 5 as a maximum one)

Within the "mediation" role of incubator, we questioned start-ups in order to deep understand how concretely the incubator intermediates between the start-up and its key stakeholders, namely which processes are performed by the incubator in order to let the start-up to meet one or more stakeholders that have been playing a pivotal role for the start-up's development. Under this point of view, there are three main approaches that the incubators follow in order to play their mediation role (according to 63.16% of start-ups, incubators are actually developing concrete processes aimed at helping start-ups connecting to their stakeholders). Considering only the start-ups that acknowledge to the incubator a mediating role, according to the first approach, the incubator helps stakeholders to be aware of the existence of the start-up itself (55.56% of respondents), or the other way around (33.33% of respondents). The second approach sees the incubator fostering a matching between its guests (41,67% of respondents). Finally, in the third approach, incubators are seen as organizers of one-to-one (44.44% of respondents) or one-to-many (69.44% of respondents) meetings between start-ups and their counterparts (see Table 3).

Table 3 - Intermediation processes managed by incubators

Process	**Respondents (1)**
Organizing one-to-many (public) meetings	69.44
Making the stakeholder aware about the start-up	55.56
Organizing one-to-one meetings	44.44
Matching hosted start-ups one each other	41.67
Making the start-up aware about the stakeholder	33.33

N = 36 (63.16% surveyed start-ups)

(1) Frequencies

Finally, we investigated how relevant is the in the business development of the start-up, namely on its capability to enter the market. While 52.63% of start-ups considers "not very useful or completely not useful" the support that is given by incubators for the business development of a start-up, only 12.28% of them sees incubators as a key player in their growth. Within this main trend, we can find out which roles that can be eventually played by incubators when they try to help start-ups in developing their own businesses. First of all, incubators help start-up to understand the type of client that a start-up must target in order to succeed. Under this point of view, 12.28% surveyed start-up recognize a relevant role to incubators in understanding the "right" type of customer to address, while 22.81% doesn't. In particular, approximately 8% of them considers the incubator as a key player in the identification of the first client or the clients following the first one; 18% of start-ups doesn't consider the relationship with the incubator as an effective one to the discover of the "ideal" customer. At the same time, incubators are not seen as reliable partners in the management of the whole set of operations that start-ups need to handle in order to acquire customers. Only 5.26% of them sees incubators as effective partners in handling the complex set of tasks that are needed to acquire the first customer, while only 8.77% of them considers incubators as effective partners in handling the acquisition of the customers that follow the first one. At the same time, around

22% of start-ups expressively doesn't consider incubator as effective partners that could facilitate their acquisition of new customers. Moreover, incubators help their hosted start-ups in developing their business only by giving a support to the definition of the "best" client profile and of the right "value proposition" (according to the focus-target). Regarding this aspect, 12.28% of start-ups sees incubators as a good partner for understanding the right customer-profile to be addressed, while 10.53% of start-ups considers incubators as good partners for the definition of a proper value proposition for that target (Table 4).

Table 4: Effectiveness of partnership with incubators for start-up's business development

Support type	Helpful (1)	Not Helpful (1)
Defining the "best" customer profile	12.28	15.79
Understanding the "right" type of customer to address	12.28	22.81
Defining the value proposition	10.53	15.79
Handling tasks to acquire the customer after the first one	8.77	21.05
Identifying the first customer	7.02	19.30
Handling tasks to acquire the first customer	5.26	22.81
Identifying the customer after the first one	3.51	17.54

N = 57; (1) Frequencies

Concluding Remarks

The aim of this paper was to understand what is the role played by incubators in fostering the development of early market relationships by their hosted start-ups. In order to gain a basic understanding of this phenomenon, we therefore analyzed what kind of mediation services are requested by start-ups, what is the weight of mediation services with potential customers and if incubators are able to adequately cope with the demand from start-ups. At this stage of our research, we were able to collect relevant data to the evaluation of the impact of incubator's mediation services on new-ventures' early market-relationships development in a geographical-specific context. Our empirical research showed that the main role of incubators in start-ups development concerns the offer of spaces and facilities where the new ventures can deploy their activities. As already stated in previous several reports and contribution, incubators are hereby confirmed to be seen as office providers more then as enablers of relationships and know-how that can be used for business development. This is why mediation services have a relative lower weight among the overall portfolio of services provided by incubators. In particular, the development of new market relationships is not a relevant neither helpful task performed by incubators alongside start-ups. About this aspect, incubators act at least as "consultants" that help start-ups addressing the way in which they define their ideal customer profile or the proper value proposition. The role played by incubators in managing the process for the acquisition of new customers is way beyond less impactful. They act at least as organizers of public meetings that are addressed to the whole set of incubated start-ups more then aimed at building an appropriate context for the development of market relationships. There is any evidence of existing processes expressively oriented to the development of market relationships between incubated start-ups and their relevant networks, both sectorial and geographical (as theorized by Bergek & Norrman, 2008).

We are aware about the limitations of our research. In particular, we had a limited availability of data and our data set is context-specific and the assumption that a there is perfect equivalence among the ways in which the services are offered by different incubators (while incubators are not perfectly equivalent). Furthermore, by analyzing in detail the empirical evidences of this research, we cannot establish whether or not the relative low usage of mediation services has been depending by an explicit or implicit inability of the start-ups of properly identify and request this type of services. Further research will play a pivotal role in overcoming this issues and developing a robust analytical framework.

Under a theoretical perspective our study bridges the lack of understanding about how incubators foster the development of market-relationships of start-ups. Managerial contribution of this paper is mostly referred to the design of the incubation process, specially regarding the gap between start-ups needs and incubators offering. Regarding policies, we introduce new variables for the assessment of incubators' performances, namely those relating the impact of mediation services in market-relationships' creation.

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Financial Ratios and Corporate Failure – A Case of Nepal

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Abstract

Many financial ratios have been revealed as significant indicators of corporate failure in developed countries. In the context of Nepal, liquidity ratios: current assets to current liabilities (CA/CL), current assets to total assets (CA/TA) and working capital to total assets (WC/TA) of failed companies are poor. Due to poor assets management, failed companies are unable to generate profit (reserves) and operating cash flows resulting high dependency on long term debt to meet their cash needs. As a result, total debts to total assets (TD/TA) of failed companies have been found higher than their assets with low proportion of current liabilities. Although, financial ratios of failed companies are poorer, all of them are not equally important rather they are inconsistent in discrimination of failed and non-failed companies. On contrary to their popularity in practice; ratios of current assets to current liabilities (CA/CL), earnings before interest and tax to interest (EBIT/INT), net sales to working capital (NS/WC) and net sales to current assets (NS/CA) are statistically insignificant between failed and non-failed companies. Thus, ratios of working capital to total assets (WC/TA), shareholders' equity to total assets (SE/TA) and ratio of long term debts to total debt (LD/TD) are found consistent and significant in discriminant analysis of failed and non-failed companies in the context of Nepal. Using discriminant model of three financial ratios, a firm can be classify as failed and non-failed with at least 84.2% accuracy. As far as relative importance is concerned, the ratios of WC/TA is the most important ratio followed by, SE/TA and LD/TD respectively.

Key Words: *Corporate failure, Classification Accuracy, Discriminant analysis, Financial ratios, Failed companies, Non-failed companies, Long term debts to total assets (LD/TA), Shareholders' equity to total assets (SE/TA), Type I error, Type -II error, Working capital to total assets (WC/TA) etc.*

1. Introduction

The prediction of corporate failure has become a major area of study in finance and accounting since 1960s. Prior to 1960s, many studies (Ramser & Foster, 1931; Fitzpatrick, 1932; Smith & Winakar, 1935; and Marwin, 1942) used financial ratios to compare between failed and non-failed firms. However, prediction of corporate failure was begun since 1966. Using univariate statistics, Beaver (1966) revealed the ratio of cash flow to total liabilities (CF/TD) as the best predictor of corporate failure. Altman (1968) felt that it was necessary for appropriate extension of the previous studies and developed a combination of several financial measures into a meaningful predictive model using multiple discriminant analysis. The, Deakin (1972), Edmister (1972), Blum (1974), Moyer (1977), Dambolena and Khoury, (1980), Sharma and Mahajan (1982), Yadav (1986), Shirata (1998), Sori and Jalil (2009) and many other studies are using the study of Altman (1968) as a benchmark for prediction of corporate failure. However, very little attempts have been made such studies in the context of developing country of Nepal. Thus, the main objective of this study is to examine financial ratios and their usefulness in prediction of corporate failure of Nepal. Other specific objectives of the study are: (i) to compare financial ratios of failed and non-failed companies, (ii) to determine ratio or set of ratios that can predict corporate failure, and (iii) to develop models of financial ratios for prediction of corporate failure.

Following introduction, Section-II of this chapter deals with review of literature. Section-III is devoted for research methodologies followed in this study. Section-IV describes empirical results derived from financial ratios and their usefulness in prediction of corporate failure using discriminant analysis. At last, the conclusion of this study has been drawn.

2. Review of Literature

The earliest literature on financial ratios as predictors of corporate failure are Gilman (1925), Ramser and Foster (1931), Fitzpatrick (1932), Smith and Winakor (1935) and Marwin (1942). Prior to 1960s, these studies compared failed and non-failed companies using financial ratios and concluded that financial performance of failed companies are poor. Firstly, Beaver (1966) used univariate statistics and concluded that financial ratio (i.e. cash flow to total

debts) is the most useful predictors of corporate failure. In another study, Beaver (1968) evidenced that the non-liquid assets measures predict failure better than the liquid assets measures even in the year immediately before failure. However, Beaver's studies were criticized for being univariate in nature. Thus, Altman (1968) used multivariate discriminant analysis to discriminate between failed and non-failed companies using financial ratios. Of twenty two financial variables, Altman (1968) developed discriminant functions of five financial ratios that were found significant indicators in failure prediction context. Using scale vector, the ratio of earnings before interest and tax to total assets (EBIT/TA), sales to total assets (S/TA), market value to book values (MV/BV), retained earnings to total assets (RE/TA), and working capital to total assets (WC/TA) are the most powerful ratios in failure prediction context respectively. In order to develop an alternative model to ones developed by either Beaver (1966) or Altman (1968); Deakin (1972) carried out a study using fourteen financial ratios from Beaver (1968). It is concluded that the ratio of total debt to total assets (TD/TA) as the most accurate predictors except for three year prior. However, ratios of current assets to current liabilities, stock to cost of goods sold, current assets to sales, net profit to total capital employed and net worth to outside liabilities were found to be statistically significant and acceptable to the bankers (Kaveri, 1980). Besides the standard deviations of financial ratios; the stability of the liquidity constitutes a necessary measure of corporate solvency (Dambolena & Khoury, 1980). But the predictive power of ratio analysis depends upon the choice of analytical method and the selection of ratios. The predictive power of financial ratio is cumulative that no single ratio predicted failure nearly as well as small group of variables and which were not significant predictors alone added discriminating ability to a function containing selected other variables (Edmister,1972). Likewise, many other studies: Rao and Sharma (1971), Libby (1975), Taffler and Tisshaw (1977), Bilderbeek (1977), Van Frederkslust (1978), Takahashi et al.(1979), Rao and Sharma (1971),Takahashi et al.(1979); Ohlson (1980); Meyer and Pifer (1980); Sethi (1981); Srivanstava (1981); Ko (1982); Vinod (1983); Gupta (1983); Kanta (1984); Yadav (1986); Zavgren (1985); Ariyo (1986); Aziz and Lawson (1989); Altman et al., (1994); Matsumoto et al. (1995); Shirata (1998); Bonginni et al.(2000); Charitou et al.(2004); Nam and Jinn (2000); Kim and Gu (2006); Ugurlu and Aksoy (2006); Zhou and Elhag (2007); Minussi et al (2008); Appiah and Abor (2009); Jalil and Sori (2009); Yap et. al, (2010); Pal (2013) etc. used financial ratios as research variable for prediction of corporate failure.

In the context of Nepal, the net profit margin and short term liquidity ratios are important indicators of financial distress (Pradhan, 2006). Financially distressed enterprises have higher opearting expenses ratios, and lower profitabilites. Besides, their liquidity, turnover, coverage ratios were also significantly lower (Shrestha et al., 2002). Similalry; financial ratios of bankrupt companies are found always lowers at least three years prior to bankruptcy (Fago, 2006). Fago (2007) the ratios of net worth to total assets (NW/TA), retained earnings to total assets (RE/TA), cash flow to current liabilities (CF/CL), net income to total assets (NI/TA), and cash flow to net sales (CF/NS) are significant ratios in prediction of corporate bankruptcy in Nepal.

In conclusion, review of literature shows that financial ratios are important predictors of corporate failure. However, there is no unanimous on a ratio(s) or group of ratio as a predictor(s) of corporate failure. Since most of studies have been carried in the context of large and developed countries; and very little attempts have been made in the context of Nepal, the generalization of conclusions may not be desirable and sufficient towards development of theory of corporate failure.

3. Research Methodology

The descriptive, and causal comparative research designs have been used to deal with various issues raised in this study. The descriptive research design has been applied to undertaken fact finding operation searching for adequate information about financial ratios and corporate failure in the context of Nepal. This study has also adopted casual comparative research design in order to determine the effect of financial ratio in classification of failed and non-failed companies. This research design has also been followed to understand the fact that whether it is possible to predict corporate failure on the basis of historical financial ratio(s) information.

Failed companies and non-failed companies
For the purpose of this study, the annual reports containing Income Statements and Balance Sheets of thirty seven (38) public enterprises and thirty (30) disinvested public enterprises as of July 15, 2009 have been collected from Corporation Coordination Division of Ministry of Finance (MOF) and Office of the Auditors General of Nepal (OAG/N). Similarly, financial statement of thirty two (32) public listed companies including liquidated and closed down companies have also collected from Nepal Stock Exchange Ltd (NEPSE), Security Board of Nepal (SEBON) and Office of Company Registrar (OCR). Then, a list of public enterprise and private enterprises both listed and non-listed companies have been prepared for selection of failed and non-failed companies in the context of Nepal.

This study defines a company as a failed company, if its total liabilities are either greater than its total assets or it is liquidated or under liquidation or closed down its operations. Using these criteria, twenty failed companies and twenty non-failed companies have been selected from the list of thirty eight public enterprises; thirty disinvested and liquidated pubic enterprises and thirty two pubic listed companies. In contrary, a company is regarded as non-failed company, if it is not yet failed one. It means that a company is non-failed company, if its total assets are greater than its total liabilities. In this study, twenty non-failed companies have been selected to pair twenty failed companies.

Nature and sources of data

This study is based secondary data. The main source of secondary data is financial statements of failed and non-failed companies that have been collected from the Office of Auditors General of Nepal (OAG/N), Corporation Coordination Division of Ministry of Finance (MOF), Security Board of Nepal (SEBON), Nepal Stock Exchange Ltd (NEPSE) and the Office of the Company Registrar (OCR), Ministry of Industry and Commerce (MOIC). In this study, financial statements of selected companies from fiscal years 1988 through 2009 have been used to compute financial ratios for the study.

Selection of financial ratios for the study

In this study, dependent variable is a dichotomous event called failed and non-failed company. Failed company is referred as zero (0) and non-failed company as one (1). The independent variables are twenty one financial ratios that have been selected for the study using three basis criteria have been used: (a) a ratio found significant in prior studies (b) popularity of ratios in academics courses of finance and accounting and (c) data availability for computation of financial ratio. Presence of any one of the criteria has been considered sufficient for inclusion of a financial ratio in this study. Twenty one financial ratios have been computed for analysis in this study.

Multivariate discriminant analysis

In this study, multivariate discriminant analysis (MDA) has been used as a technique of data analysis to discriminate failed and non-failed companies. MDA became popular following the study of Altman (1968). It is a statistical technique that provides a score of financial ratios. Comparing scores to cut-off value, a company can be separated into failed and non-failed companies. It is also a sequential process, which includes or excludes variables based on various statistical criteria to develop a discriminant model.

In this study, following discriminant model has been used to test for prediction of corporate failure.

$$Z\text{ - }Model = b_0 + b_1X_1, +b_2X_2 + b_3X_3 + \ldots\ldots\ldots\ldots\ldots b_nX_n \text{ [i]}$$

Where,

Z	=	Z score
$X_1, X_2, X_3 \ldots X_n$	=	Financial ratio(s)
'n'	=	Number of ratios or observations
$b_1 \ldots b_n$	=	Coefficients in the discriminant function

Z-score of each company can be computed for the purpose of the classifying the company either failed or non-failed company. If Z-score of the company is greater than cut off value, then it is classified as non-failed company. If Z - score is less than cut off value, it concludes failed company.

4. Empirical Results

This section deals with discriminant analysis of failed and non-failed companies. Thus, it is divided into eight sub-sections. Sub-section-I deals with descriptive statistics of failed and non-failed companies using twenty one financial ratios under found categories: liquidity, leverage, turnover and profitability. Sub-section-II is devoted for discriminant analysis of failed and non-failed companies five years prior to their failure. Section-III develops discriminant model for application. The cut-off point has been determined in Section-IV. Using various criteria, the predictive powers of financial ratios of discriminant model have been assessed in sub-section-V. The validity of discriminant model has been tested in Sub-section-VI. Sub-section-VII has compared discriminant classification errors. At last, the conclusion of this chapter been described.

4.1. Descriptive statistics of failed and non-failed companies

Like Marwin (1942), Beaver (1966), Deakin (1972), Ohlson (1980), Dombolena and Khoury (1980), and Yadav (1986), this study attempted to compare failed and non-companies using descriptive statistics of twenty one financial ratios. The descriptive statistics of failed and non-failed companies have been presented in Table 4.1.

Liquidity

Table1 exhibits that the average ratio of current assets to current liabilities (CA/CL) of failed companies is 1.47 times with standard deviation 4.49 times. For non-failed companies, the same ratio is 1.71 times with 1.19 times standard deviation. The mean ratio of working capital to total assets (WC/TA) is 0.10 times and standard deviation 0.68 times for failed companies. On the contrary, the average ratio is 0.43 times with standard deviation 0.30 for non-failed companies. The averages proportions of current assets to total assets (CA/TA) and current liabilities to total debts (CL/TD) of non-failed companies are 0.62 times and 0.82 times respectively. These ratios are higher than that of failed companies. This study shows that the standard deviations of liquidity ratios of failed companies are higher except for the ratios of current assets to total assets (CA/TA). This study therefore, reveals that the liquidity ratios of failed companies are poor.

Leverage

The average proportions of total debt to total assets (TD/TA) and long term debt to total debt (LD/TD) of failed companies are 177% and 48% respectively. These ratios are lower in non-failed companies. Though, the average ratios of times interest (EBIT/INT) are negative; the average ratios of non-failed companies are found slightly better to failed companies. Moreover, the average contribution of retained earnings and shareholders' equity to total assets of failed companies are also nil. However, it is positive with low standard deviation in non-failed companies.

Table -1

Descriptive statistics and test of equality of group means between failed and non-failed companies

This table presents the descriptive statistics; mean and standard of twenty one financial ratios of failed companies and non-failed companies. Panel A presents Liquidity, Panel B- Leverage, Panel C - Turnover, Panel D- Profitability and Panel E - Cash flow ratios. To test significant differences between failed and non-failed companies, it also presents Wilk's Lambda, f-statistics and significance value (.i.e. p-values) of each financial ratio. Low Lambda refers significant difference and vice versa. Similarly, high f-statistics refers significant difference and low insignificant. P-values explain significance of each financial ratio. If $p \leq 0.01$ and $p \leq 0.05$.

	Failed cos.			Non-failed cos.			Test of Group Means		
	N	Mean	SD	N	Mean	SD	Wilks' Lambda	F-statistics	Sig.
Panel A: Liquidity (Times)									
CA/CL	146	1.47	4.49	170	1.71	1.19	0.998	0.482	0.488
WC/TA	146	0.10	0.68	170	0.43	0.30	0.827	65.899	0.000*
CA/TA	146	0.55	0.24	170	0.62	0.29	0.980	6.377	0.012**
CL/TD	146	0.52	0.28	170	0.82	0.26	0.756	101.10	0.000*
Panel B: Leverage (%)									
EBIT/INT	146	-1003	6315	170	-182	4734	0.995	1.735	0.189
TD/TA	146	177	130	170	60	32	0.706	130.59	0.000*
LD/TD	146	48	28	170	17	25	0.749	105.27	0.000*
SE/TA	146	-79	1.42	170	60	58	0.698	135.63	0.000*
RE/TA	146	-89	1.34	170	10	33	0.785	85.976	0.000*
Panel C: Turnover (Times)									
NS/WC	146	0.19	18.82	170	0.27	73.82	0.999	0.224	0.637
NS/CA	146	1.68	1.18	170	1.99	1.55	0.988	3.929	0.048
NS/FA	146	3.15	4.94	170	21.28	60.28	0.960	13.127	0.000*
NS/TA	146	0.75	0.58	170	1.19	1.22	0.952	15.70	0.000*
Panel D: Profitability (%)									
EBIT/TA	146	-13.14	57.69	170	12.30	25.44	0.921	26.966	0.000*
EBIT/TD	146	-0.94	49.50	170	25.38	49.36	0.934	22.262	0.000*
NI/NS	146	-285.74	1299.67	170	6.99	31.33	0.973	8.623	0.004*
NI/TA	146	-23.23	58.90	170	8.08	22.94	0.885	40.827	0.000*
Panel E: Cash flow (%)									
CF/NS	146	-201.26	968.12	170	10.77	31.82	0.975	8.148	0.005*
CF/CL	146	-16.06	132.87	170	28.58	49.79	0.950	16.496	0.000*
CF/TA	146	-20.19	59.26	170	10.30	23.05	0.891	38.265	0.000*
CF/TD	146	-5.48	49.69	170	22.05	44.76	0.921	26.823	0.000*
*Significant at 1%, ** Significant at 2% , *** Significant at 5%.*									

Turnover

The working capital turnover ratio (NS/WC) of failed companies is low with high standard deviation in comparison to non-failed companies. The current assets turnover (NS/CA), fixed assets turnover (NS/FA) and assets turnover ratios (NS/TA) ratios are high in non-failed companies than in failed companies. On the contrary to previous studies, it is found that the standard deviations of turnover ratios are also found higher in non-failed companies. Thus, it is evident that despite assets management of non-failed companies are more efficient and effective; it varies highly among non-failed companies.

Profitability

Profitability ratios are most forewarning indicators of sickness of private sectors and the government undertakings (Sethi, 1981; and Yap et al., 2010). The profitability ratios: the ratios of earnings before interest and tax to total assets (EBIT/TA), earnings before interest and tax to total debts (EBIT/TD), net income to net sales (NI/NS), and net income to total assets (NI/TA) are negative. The main reasons for poor operating profit (i.e. the losses or negative profits) are poor assets management (i.e. turnover) and huge operating expenses including interest on long term debts. The standard deviations of profitability ratios of failed companies are also higher in non-failed companies. However, profitability ratios are positive with low standard deviations in non-failed companies. Profitability ratios are also found statistically significant between failed and non-failed companies.

Cash flow

Like profitability ratios, the average operating cash flow ratios of failed companies are highly negative. It is evident that the failed companies are unable to generate operating cash flows due to low turnovers with high standard deviation. Thus, it is also evident that operating cash flow ratios are statistically significant to classify failed and non-failed companies.

4.2 Discriminant analysis of failed and non-failed companies

In order to perform discriminant analysis, twenty one financial ratios have been selected initially. Using yearly data, discriminant results have been obtained, which have been presented in Table-2.

Table - 2
Discriminant analysis using yearly data of five years prior to failure

This table presents the multivariate discriminant functions, classification accuracies, Type I errors and Type II errors for five years prior to failure. In addition, Wilk's Lambda, chi-squares, p-values and classification accuracy of five discriminant models have been presented. Wilks' Lambda ranges from 0 to 1. Small value indicates strong group differences and values close to 1 indicate no group difference. P-value explains significance of each function. If $p \leq$ 0.05 and $p \leq$ 0.10, the model is significant. Models refer discriminant functions derived from yearly data prior years to failure.

Ratios	Prior year to failure				
	1	2	3	4	5
1. WC/TA	-1.089	1.31	1.108	-	1.347
2. TD/TA	-	-	-	0.477	-
3. LD/TD	4.834	-3.87	-2.973	1.72	-
4. RE/TA	-	-	-	-0.87	-0.955
5. NI/TA	-	-	2.529	-	-
6. CF/TD	-	3.074	-	-	-
Constant	-1.800	1.428	1.161	-1.56	-1.47
Chi-square	45.97	48.16	30.20	27.49	22.75
Wilk's lambda	0.289	0.267	0.437	0.47	0.541
P- values	0.00	0.00	0.00	0.00	0.00
Type I error (%)	10%	5%	10%	20%	20%
Type II error (%)	5%	5%	15%	15%	5%
Classification accuracy (%)	92.5%	95%	87.5%	82.5%	87.5%
Canonical correlation (r)	84.3%	85.6%	75%	72.7%	67.8%

Table-2 shows that ratios of working capital to total assets (WC/TA) and long term debt to total debts (LD/TD) are found significant with high classification accuracy one year prior to failure. However, the sign of working capital is negative, which is contradictory in prediction of corporate failure. While ratio of cash flows to total debts (CF/TD) is also significant prior two year to failure with improved classification accuracies from 92.5% to 95%. The ratios of

net income to total assets (NI/TA) is found significant in addition to ratio of working capital to total assets (WC/TA) and long term debts to total debts (LD/TD) in three year prior to failure, but the classification accuracy has been found dropped to 87.5%. Four year prior to failure, the ratios of total debts to total assets (TD/TA), long term debts to total debts (LD/TD) and retained earnings to total assets (RE/TA) are found significant. The sign of ratio of retained earnings to total assets (RE/TA) is contradictory in prior four and five year to failure. However, the ratios of working capital to total assets (WC/TA) and retained earnings to total assets (RE/TA) are significant in five year prior to failure.

As far as classification accuracy is concerned, the overall discriminant classification accuracies are: 92.5%, 95%, 87.5%, 82.5% and 87.5%% in prior year 1, 2, 3, 4 and 5 prior to failure respectively. Type I errors are 10% in year 1 and 3; 5% in year 2 and 20% in year 4 and 5 prior year to failure. Type II errors are 5% in year 1, 2 and 5; and 15% in year 3 and 4 prior to failure. It reveals the classification accuracies have been found increased, when a company approached towards failure.

At the 5% significance levels, discriminant results are significant. Although, discriminant analysis of yearly financial ratios prior year to corporate failure are enough to classify failed and non-failed companies more accurately in the years as the firm approaches its failure, financial ratios are inconsistent and their signs are contradictory. Thus, it reveals that ratios of working capital to total assets (WC/TA) and long term debts to total debts (LD/TD) are consistent at least three year prior to failure.

Table-3 reveals that ratios of working capital to total assets (WC/TA), long term debt to total debts (LD/TD), earnings before interest and tax to total assets (EBIT/TA) and cash flow to total debts (CF/TD) are significant to discriminate failed and non-failed companies in average data of prior two years and three years to failure. The signs of each ratio are as expected except for the sign of EBIT/TA which is negative. Of these four financial ratios, the ratio of earnings before interest and tax to total assets (EBIT/TA) is insignificant on average data of four years. On five years data, the ratios of working capital to total assets (WC/TA), long term debt to total debts (LD/TD) and shareholders' equity to total assets (SE/TA) are found significant to discriminate failed and non-failed companies.

Table-3
Discriminant analysis using average data of five years prior to failure

This table presents discriminant results: discriminant functions, classification accuracies, Type I errors and Type II errors computed on the basis of the average data of five years prior to failure. The Wilk's Lambda, chi-squares, p-values and classification accuracy of discriminant models have also been presented in this table. Wilks' Lambda ranges from 0 to 1. Small value indicates strong group differences and values close to 1 indicate no group difference. P-value explains significance of each function. If $p \leq 0.05$ and $p \leq 0.10$, the models are significant. Since canonical correlation explains the relationship between z-score and independent variables (i.e. financial ratios), high correlation is expected.

Ratios	Average data prior years			
	2 Years	3 Years	4 Years	5 Years
1. WC/TA	1.216	1.209	1.212	1.098
2. LD/TD	-4.244	-3.658	-3.545	-3.230
3. SE/TA	-	-	-	0.228
4. EBIT/TA	-.737	-0.667	-	-
5. CF/TD	2.700	2.762	0.943	-
Constant	1.432	1.202	1.189	1.159
Chi-square	96.87	123	135.41	147.8
Wilk's Lambda	28	34.6	0.421	47.1
P- values	0.00	0.00	0.00	0.00
Canonical correlation (R)	84.9%	80.9%	76.1%	72.7%
Type I error (%)	2.5%	5%	7%	12%
Type II error (%)	5%	8.3%	9%	12%
Overall classification accuracy (%)	96.3%	93.3%	90.6%	88%

The classification accuracies are 96.3%, 93.3%, 90.6%, and 88% on the basis of average data of two, three, four, and five years prior to failure respectively. Type-I and Type II errors are also low. The canonical correlations (r) are

found increasing on average data prior years to corporate failure. This study demonstrates that discriminant analysis is more useful on the average data than yearly prior to failure. In addition to the ratios of working capital to total assets (WC/TA) and long term debt to total debts (LD/TD), and ratio of cash flow to total debts (CF/TD) is found more useful and consistent to classify failed and non-failed companies.

4.3 Development of discriminant model for prediction of corporate failure

Though, discriminant analysis is useful to classify failed and non-failed companies; discriminant results are insufficient and unreliable due to inconsistencies of financial ratios, and their contradictory signs. Thus, the following discriminant model has been developed and presented for practical application.

Table-4
Discriminant model for prediction of corporate failure

This table presents discriminant model of financial ratios developed from sixteen financial ratios that are found significant between failed and non-failed companies using stepwise procedure of discriminant analysis. It also presents numbers of observations (N), discriminant classification accuracy, Type I error, Type II error, canonical correlation (r), Wilk's Lambda, Chi-Square, and p- value of the model:

Model Z = 1.069 + 1.308WC/TA – 3.086LD/TD+ 0.296SE/TA

Financial ratios	Coefficients
1. Working capital to total assets (WC/TA)	1.308
2. Long term debts to total debts (LD/TD)	-3.086
3. Shareholders' equity to total assets (SE/TA)	0.296
Constant	1.069
Model statistics	
No of observations (N)	316
Wilk's Lambda	0.509
Chi-square	211.04
P-value	0.00
Canonical correlation (%)	70.1%
Type-I error	15.1%
Type-II error	16.5%
Classification accuracy (%)	84.2%

Table - 4 shows that the ratios of working capital to total assets (WC/TA), long term debt to total debt (LD/TD), and shareholders' equity to total assets (SE/TA) are statistically significant to discriminate failed and non-failed companies. Since the Wilk's Lambda of Model 0.509 with p-values 0.00, the model is statistically significant. The goodness of fit of the model has been measured by canonical correlation (r), which is 70.1% with 84.2% original classification accuracy The Type I and Type II errors are 15.1% and 16.5% respectively.

Working capital to total assets (WC/TA)
Working capital is defined as the difference between current assets and current liabilities. It is a measure of the net liquid assets relative to the total capitalization. A successful company should have sufficient levels of current assets to meet its current liabilities. Working capital to total assets ratio, frequently found in studies of corporate problems, is a measure of the net liquid assets of the firm relative to the total capitalization. In case of insufficiency, the company faces short term liquidity problems leading towards its failure. It is one of the best predictors of corporate failure. The inclusion of ratio of working capital to total assets (WC/TA) in discriminant model is consistent with Altman (1968), Beaver (1966), Deakin (1972), and Sharma and Rao (1971).

Shareholders' equity to total assets (SE/TA)
The ratio of shareholders' equity to total assets measures the contribution of equity in total assets of business. The high ratios indicates string capital base, thus less chances of corporate failure. If the ratio greater than 1, it indicates that there is no contribution of shareholders' equity in total assets. The ratio of shareholders' equity to total assets (SE/TA) is expected to be lower in a failed business. Like Sharma and Mahajan (1982); Blum,(1982); and Kaveri

(1980); this study also revealed the ratio of shareholders' equity to total assets (SE/TA) as an important ratio to discriminate failed and non-failed companies in Nepal.

Long term debts to total debts (LD/TD)

It is the proportion of long term debts to total liabilities. If it is close to one, it indicates that a long term liability is almost equal to total debt. It refers high risk of insolvency. Beaver (1966), Deakin (1972), Taffler and Tisshaw (1977) and Altman et al., (1977) revealed the ratio of current liabilities to total debts (CL/TD) as important predictor of corporate failure. This study also revealed the ratio of long term debts to total debts (LD/TD) as second important ratio for prediction of corporate failure.

4.4 Determination of cut-off point to classify failed and non-failed companies

It is very essential to determine "cut off point" to classify a firm as either failed or non-failed company. It is the most difficult to assign a firm into one of the two groups: failed and non-failed group. The groups' centroids: are -1.056 (Failed company and 0.907 (Non-failed companies); can be used to assign group membership. A company with z-score close to -1.056 is failed company and non-failed companies, if it is close to 0.907. However, it cannot give exact "cut off point" to indicate a company is failed or non-failed company. The maximum likelihood procedure also assigns firm to each group on the basis of individual discriminant score as most likely. According to this procedure, if the average of the cancroids is nil (0), it can be said that a company is failed, if its Z-score is zero (0) or less, and it is a non-failed company, Z-score is more than zero (0). Thus, z-score and misclassifications results have been used to determine cut off point. In this study, the empirical results have been used for determining the critical value which results minimum cases of misclassification. Therefore, the results have been presented in Table - 5.

Table 5
Actual group vs. predicted group membership

This table describes the actual group, predicted group membership of a firm and Z-score derived from discriminant function. Based on these scores and misclassifications, the failed zone, zone of ignorance and non-failed zones have been determined.

Cases	Actual group	Z-score	Predicted group	Remarks
20	0	-0.228	0	Z-Score less than -0.188 (Failed Zone)
56	0	-0.223	0	
96	0	-0.218	0	
157	1	-0.204	0	
290	1	-0.188	0	
130	0	-0.187	0	Z-score between -0.188 and -0.067 (Zone of ignorance)
286	1	-0.156	0	
25	0	-0.115	1	
40	0	-0.087	1	
47	0	-0.067	1	
168	1	-0.030	1	Z-score more than -0.067 (Non-Failed Zone)
60	0	0.020	1	
205	1	0.080	1	
220	1	0.121	1	
303	1	0.127	1	

Table 4.5 demonstrates the Z-score, misclassification cases of discriminant model. It also revealed that all companies having a Z- scores less than - 0.188 clearly falls into the failed group of companies, and while those companies having a Z-score above -0.067 in non- failed group of companies. The z-score between -0.188 and -0.067 will be defined the "*the zone of ignorance" (i.e. neither failed nor non-failed company)* because of the susceptibility to error classification (Altman, 1968).

4.5 Assessing discriminating power of financial ratios

One of the major objectives of this study is to assess the relative importance of financial ratios in discriminant function. Although, there is no definite way to assess the relative contribution of the variable(s) in the discriminant model, this study has also applied four approaches: (a) Wilk's Lambda, (b) Univariate F value, (c) Standardized coefficient and (c) Scaled vector (i.e. adjusted coefficient) to test the discriminating ability of financial ratios in corporate failure.

Table - 6
Discriminating power of financial ratios in discriminant analysis

This table presents Wilk's Lambda, f-statistics, standard coefficient, and scale vector of each financial ratio in the discriminant model to test the discriminating power. Low Wilk's Lambda, high f-statistics, standard coefficient and scale vector indicate that the discriminating power of the ratio is high and vice versa. Scale vectors have been obtained by multiplying square root of diagonal elements of variance-covariance matrix and standard coefficient.

Ratios	Wilks' Lambda		f- statistic		Standard coefficient		Scale vector	
	Value	Rank	Value	Rank	Value	Rank	Value	Rank
WC/TA	0.829	3	64.86	3	0.667	2	0.340	1
LD/TD	0.749	2	105.27	2	-0.819	1	-0.217	3
SE/TA	0.698	1	135.63	1	0.321	3	0.329	2

This study used f-statistics, and the Wilk's Lambda to test the individual discriminating ability of the variables in the model. Under these criteria, the ratio of shareholders' equity to total assets (SE/TA is the most important ratio that is followed by ratios of working capital to total assets (WC/TA) and long term debts to total debts (LD/TD) respectively.
Like Taffler (1972), the contribution of ratio has been assessed by comparing the absolute values of the discriminant coefficients after ignoring the signs in standardized function. Under this criterion, ratio of long term debt to total debts (LD/TD) has been rated as most important ratio. The other important ratios are the ratio of working capital to total assets (WC/TA), and shareholders' equity to total assets (SE/TA) respectively.
Since the standard coefficient; f- statistics; and Wilk's lambda do not take into account the inter-correlation in the constituent model variables because of different assumptions underlying use of discriminant model, the scale vector has been used widely (Altman,1968; Deakin, 1972; Yadav,1986) to test the discriminating power of financial ratios. Since the highest scale vector is 0.340; the ratio of working capital to total assets (WC/TA) is regarded as the most predictor of corporate failure. It is followed by the ratio of shareholders' equity to total assets (SE/TA) and long term debts to total debts (LD/TD) respectively.

4.6 Validity of discriminant model in prediction of corporate failure

It is essential to test validity of discriminant model for practical application. In order to test the validity of the model, financial ratios of twenty failed and twenty non-failed companies' five years financial data have been used from initial sample companies. On the basis of cut-off point determined, a company is classified as failed and non-failed company.

1. Predictive classification accuracy: one year prior to failure

Using discriminant functions of financial ratios, Z-score of twenty failed and twenty non-failed companies have been computed from the financial ratios of one year prior to failure. Applying the cut-off point determined from initial samples data, the following classification accuracy matrix of the initial sample and unselected cases one year prior to failure have been obtained separately.

Table - 7 shows the original classification accuracies (84.2%), cross validation accuracy (84.2%), Type I (15.1%), and Type II (16.5%) error of the discriminant model. When the model is applied to discriminate failed and non-failed companies using the financial data one year prior to failure, out of forty companies, thirty nine companies have been correctly classified. Thus, the classification accuracy is 97.5% with Type I error nil and Type II error (5%).

Table - 7
Predictive accuracy: one year prior to failure

Group	Basis	Predicted Group Membership		Total
		Failed cos.	**Non-failed cos.**	
Failed cos.	N	124	22	146
Non-failed cos.	N	28	142	170
Failed cos.	%	84.9	15.1	100
Non-failed cos.	%	16.5	83.5	100
Original classification accuracy	%	**84.2**		
Original classification error	%	**15.8**		
Failed cos.	N	124	22	146
Non-failed cos.	N	28	142	170
Failed cos.	%	84.9	15.1	100
Non-failed cos.	%	16.5	83.5	100
Cross-validation classification	%	**84.2**		
Cross validation error	%	**15.8**		
Failed cos.	N	20	0	20
Non-failed cos.	N	1	19	20
Failed cos.	%	100	.0	100
Non-failed cos.	%	5	95	100
Predicted correct classification	%	**97.5**		
Predicted classification error	%	**2.5**		

2. Predictive accuracy: two year prior to failure

The second test is made to observe the discriminating ability of the model for companies using data from two year prior to failure. The discriminating score of forty companies are calculated. Applying the cut-off point determined on the basis of initial sample, the predictive classification accuracy of the model have been calculated and presented in Table - 8.

Table - 8
Predictive accuracy: two year prior to failure

Group	Basis	Predicted Group Membership		Total
		Failed co.	**Non-failed co.**	
Failed cos.	N	18	2	20
Non-failed cos.	N	1	19	20
Failed cos.	%	90	10	100
Non-failed cos.	%	5	95	100
Classification accuracies	%	**92.5%**		
Classification errors	%	**7.5%**		

From Table - 8, it is evident that out of forty companies, thirty seven companies have been correctly classified as failed and non-failed companies. It is 92.5% classification accuracy with Type I error-10% and Type II error -5%

respectively. It shows that the model can predict a company into failed or non-failed at least two years prior to failure high percentage of accuracy.

3. Long-term predictive accuracy of model
The predictive results of discriminant model two years prior to failure are encouraging. However, it also requires its justification in long term predictive accuracy beyond two years (Altman, 1968). In order to determine long term predictive classification accuracy up to five year prior to failure, the classification accuracies prior three year or more have been computed using parameters of discriminant model of financial ratios for assessing long term predictive classification accuracy. By developed discriminant model, this study computed Z-score of forty companies for each of the year prior three, four and five year to failure and obtained. Applying the cut-off point determined, the predictive accuracies of the model for three, four and five year prior to failure have been calculated and presented in Table - 9.

Table - 9
Predictive accuracy: three to five year prior to failure

Cases	Group	Basis	Predicted groups	
			Failed cos.	**Non-failed cos.**
Prior three year	Failed cos.	%	90	10
	Non-failed cos.	%	15	85
Classification accuracy		**%**	**87.5**	
Overall Classification error		**%**	**12.5**	
Prior four year	Failed cos.	%	85.0	15
	Non-failed cos.	%	15.0	85
Classification accuracy		**%**	**85**	
Overall Classification error		**%**	**15**	
Prior five year	Failed cos.	%	75.0	25.0
	Non-failed cos.	%	20.0	80.0
Classification accuracy		**%**	**77.5**	
Overall Classification error		**%**	**22.5**	

The predictive classification accuracy of the model prior three year is 87.5%. Type I error and Type II error are 10% and 15% respectively. In four year prior to failure, the overall classification accuracies have slightly dropped to 85% with Type I error and Type II error 15% each. However, it is found that the classification accuracy is 77.5% in five year to failure. Type I error and Type II errors have been also found increased to 25% and 20% respectively. Since, the overall classification accuracies are high, low Type I and Type II errors, discriminant model is also useful for prediction of corporate failure.

4.7 Comparison of classification errors
To assess the usefulness of discriminant analysis for prediction of corporate failure in the context of Nepal, prediction classification errors of the model have been compared with other studies some better known studies (Beaver, 1966; Altman,1968; Deakin, 1972; Altman et al., 1977; and Blum, 1974) and presented in Table -10.

Table 10
Comparison of discriminant classification errors (in %)

Prior year to failure	Present Study	Beaver (1966)	Altman (1968)	Deakin (1972)	Altman et al. (1977)	Blum (1974)
1	2.5%	13%	5%	3%	7%	7%
2	7.5%	21%	28%	4.5%	11%	20%
3	12.5%	23%	52%	4.5%	17.5%	30%
4	15%	24%	71%	21%	21%	NA
5	22.5%	22%	64%	17%	24%	NA

Table -10 shows that the discriminant classification errors for last five years prior to failure. The discriminant classification errors of this study are very low in comparison to other studies except 22.5% five year prior to failure.

Like other studies, this study also concludes that discriminant model is useful in discriminating failed and non-failed Nepalese companies.

5. Conclusions

On the basis of discriminant analysis of failed and non-failed companies, the conclusions have been drawn as follows.

Since liquidity, profitability and cash flow of failed companies are lower because failed companies are unable to manage their assets efficiently and effectively. As far as leverage ratio is concerned, ratios of total debt to total assets (TD/TA) of failed companies are higher due to high proportion of long term debts. Failed companies depend on long term debt to meet its cash needs. Similarly, the shareholders' equity (capital and retained earnings) of failed companies are poor because of huge accumulated loss.

The average data of five years prior to failure are found better for higher classification accuracies than yearly data. Besides, all financial ratios are not statistically significant to discriminate failed and non-failed companies. Only three financial ratios statistically significant and their signs are as expected in the model. Thus, the following multivariate discriminant function has been developed for prediction of corporate failure in Nepal.

$$\text{Model } Z = 1.069 + 1.308 WC/TA - 3.086 LD/TD + 0.296 SE/TA$$

If Z-Score of a company is less than -0.188 clearly falls into the failed group and while those companies having a Z-score -0.067 or more in non-failed group of companies. The area between -0.188 and -0.067 will be defined the "*zone of ignorance*" because of the susceptibility to error classification (i.e. neither failed nor non-failed company).

It is also concluded that the ratio of working capital to total assets (WC/TA) is the most important financial ratio followed by shareholders' equity to total assets (SE/TA) and ratio of long term debts to total debt (LD/TD) respectively.

All financial ratios are not equally significant, and consistent to classify failed and non-failed companies. However, three financial ratios: WC/TA, SE/TA and LD/TA are the most important ratios If financial data are available, discriminant analysis can classify failed and non-failed companies as early as possible.

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A Conceptual Framework for Tax Finance: Evidences from Selected Australasian Countries

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Abstract
As we progress into 2020 and beyond, tax policy makers need to pay heed to the central message of current tax finance theory and also take due note of the economic situation, political will, cultural factors and the administrative capabilities of their country and stages of growth. Though there is no universally applicable model of tax finance, there are certain specific guidelines that can be universally applied. Keeping the objective of growth, the tax policy makers may concentrate on the following goals: broadening the base of tax, restructuring the rates, ensuring proper tax compliance and exempting savings and investment from taxation. The International Financial Reporting Standards (IFRS) seeks to build uniform accounting rules within a country, and internationally, and in almost 100 countries there has been convergence in standards with some non-adopters. As we focus on the tax sovereignty of trading countries, it is primarily important to have converging financial standards internationally for improvement in future trade and investment. The paper will attempt to discuss the stages of growth and tax options for the future.

Introduction

With the global turmoil due to wars in middle-east, including Syrian refugee and Israel issues have caused business pessimism, some form of recessionary tendencies in both developed and developing economies. Instead of promoting business optimism and growth of economies, strife and wars in the global front have caused fear and business pessimism. In this global scenario, how are governments promoting business optimism, savings, capital formation and economic growth. The paper consists of:

1. Tax structure at different stages of growth: Hinrichs–Musgrave hypothesis; here we discuss the tax structure of developed and developing countries with special reference to Australia and India
2. Savings of India: Developing Democratic Country
3. Direct Taxation and Capital Formation: South Asian and East Asian economies
4. Tax policy issues; and
5. Finally, the strategic tax design: A conceptual framework.

Tax structure at different stages of growth: Hinrichs–Musgrave hypothesis

The tax reform movement for the current decade, up to 2020 is not unique in the sense that since the beginning of this century there have been movement in the varying tax structure of the global economy. In the initial stages of development, tax on international trade is one of the best forms of taxation, since the number of tax handles available in low-income economies is few. As development continues due to industrialisation, taxes on goods and services become important revenue earners. For highly developed economies, tax on income and profits become the major source of tax revenue. This pattern has been explained by Hinrichs (1966) and Musgrave (1969) and later by Richard Goode (1984).

For example, India, a low-income developing economy is in the third stage of development ― the drive to technological maturity ― and is primarily dependent on consumption-related taxes. The union excise duties and customs duty play a dominant role in the tax structure of Indian economy. The share of excise duties increased from 10.3 per cent in 1950-51 to 35.5 per cent in 1970-71 but declined to 27.0 per cent in 1996-97. The share of customs duties declined from 23.8 per cent in 1950-51 to 10.6 per cent in 1970-71, but increased to 24.6 per cent in 1996-97. The change in revenue from customs duty reflects the tight and liberal tariff policies adopted during these periods. Though there has not been much improvement in the share of personal income tax, the share of corporate income tax has been gradually increasing. These results confirm that the Hinrichs–Musgrave hypothesis is applicable to a certain extent to Indian economy.

Developing and Developed economies
Among the newly industrialised economies, Korea — an upper middle-income economy with its successful implementation of structural reforms — has succeeded in reducing its reliance on revenue from taxes on international trade from 13.64 per cent of total tax revenue during the period 1987-89 to 6 per cent in recent years. The average share of tax on income and profits has risen from 29 per cent in 1987-88 to more than 35% beyond 2010. This shows that the Hinrichs–Musgrave theory of greater dependence on direct tax as the economy develops is true for developing economies, like Korea.

It is interesting to observe that the share of tax revenue in GDP for the developing countries has increased considerably in the last few decades. It now averages almost 20 per cent of GDP. The success of a tax reform is commonly measured by the ability of an economy to raise adequate revenue. In that respect, countries which have higher buoyancy in their tax structure will be more successful in raising adequate revenue to meet their budgetary needs.

Developing countries have a marginally higher buoyancy of direct and indirect taxation with respect to income (0.86 and 0.84, respectively, compared to 0.71 and 0.76 for developed countries). The responsiveness of direct and indirect taxation with respect to capital formation is also greater for developing countries compared to industrialised countries. The figures are 1.02 and 1.01 for direct and indirect taxation respectively for developing economies. This pattern can be explained by the growth of the economy — the responsiveness of developing countries is higher because in the intermediate stage of development, income grows faster and so does the tax revenue.

Australia
The 2015 budget changes in Australia are expected to improve cash flow for small businesses and business savings and investment is estimated to increase by 1.8 billion. This is because small businesses can access accelerated depreciation for several of the capital asset types (except horticultural plants and in-house software). As a small business owner, (a sole proprietor or a partnership firm or a property trust) is able to deduct if the depreciation of the asset is less than $20,000 (including existing pools) over the period, 12 May 2015 and 30 June 2017. Assets valued at $20,000 or more (which cannot be immediately deducted) would be placed in the small business simplified depreciation pool. This will be depreciated at: 15 per cent in the first income year and 30 per cent each income year, thereafter. In most cases specific depreciation rules apply to all assets. According to the World Bank indicator, the GDP of Australia was 1.56 trillion USD in 2013 (World Bank , 2015, Where GDP or Y = Consumption (C) + Investment (I) + Government Expenditure (G) + Net export (NX).

It is interesting to observe James Hardie's business, which started as an Australian small business grew into a multinational company and in order to diversify risk, that is to avoid tax, moved their primary business to Europe. The risk of investing in a single country can be reduced by combining investment with other countries in Asia, EU and US since Australia's GDP returns demonstrate that country's return is considerably more volatile than the returns on the global market. However, this does not mean that all risk can be eliminated. This is because there are two components of total risk:
1. Unsystematic (or diversifiable) risk
2. Systematic (or non-diversifiable) risk
Systematic risk relates to macroeconomic events that affect all the economies, and are reflected in major wars, depression or major recession. This is referred to as 'non-diversifiable' as it is common to all and cannot be diversified away. According to Musgrave (1969) and Hinrichs (1966), Australia is in the stage of high mass consumption . As a well-diversified trading economy it faces mainly global market risk, systematic risk. It is necessary to note that the movements in the country's risk are measured by after tax income of Australia in relation to the global income.

Savings of India - Developing Democratic Country

There are several previous studies that have estimated either the consumption function or the savings function. For example, studies carried out by Flavin (1981), Hayashi (1987), Deaton (1987), Gyimah-Brempong and Traynor (1996) have supported the hypothesis that consumers can be relied on to react vigorously when a policy-induced income change occurs. They disagree with the rational expectations view and argue that consumption is highly sensitive to current income and, therefore, that tax policy affects the consumption/savings function. However this is not the view of the rational expectationists. The present study is based on the view that policy induced measures impact the savings and consumption function.

The dependent variable considered in the present study is per capita private savings, and the scale variable is per capita income. The purpose of this exercise is to examine the relationship between average income and savings per person. The other variables that affect private savings in a closed economy are the after-tax rate of interest, direct tax per capita and price expectations. The real after-tax rate of interest is defined as the difference between the real money market rate and the money market rate times the marginal direct tax ratio. The relationship between these variables is summarised in the following equation:

$$St = f(y, Rt, Dt, P) \qquad\qquad (1)$$

where S = private savings per capita
     y = per capita income
    Rt = after-tax rate of interest, Rt = R(1 – Mdr)
  Mdr = the marginal direct tax ratio
   Dt = direct tax per capita
    P = price expectations

From the theoretical and empirical literature — Hall and Jorgenson (1967), Hosek and Zahn (1984), Auerbach (1983), Auerbach (1995), and Hassett and Glenn (1996) — it is shown that there is a positive relationship between the return on capital and private sector capital formation. Apart from the above studies, other studies such as Feldstein (1982), Bernheim and Shoven (1987), Jha and Wadhwa (1990) and Boadway and Shah (1995) have shown that the tax variable is an important determinant of investment. The present study has attempted to examine the role of direct tax in capital formation by including additional independent variables, such as the direct tax ratio and the marginal direct tax ratio, and examining their effect on the dependent variable, the investment-to- GDP ratio.

Preliminary Results: The Effect of Taxation on Savings in India

We have seen that there is a strong relationship between the stage of economic growth and the structure of taxation, and that direct taxes increase in importance with economic development. Apart from revenue objectives, there are other non-revenue motives that have precipitated tax reforms. Examples are promotion of capital formation and growth, redistribution of income and wealth, and improved resource allocation. The next step was to examine how far these taxes affect saving and capital formation. However, before building a savings model incorporating direct taxes, it was necessary to examine the previous literature in this field of study.

A critical review of previous literature in this field helps us to identify the factors that influence them. The important factors that have been identified are income, the rate of interest, price expectations, tax variables and trade variables. It was evident from the review of the theoretical literature that the Keynesian theory was in favour of fiscal policy — tax variables adversely affect savings both through the income and interest rate channel. Friedman's permanent income hypothesis suggests that changes in tax policy can affect only nominal variables and not real variables. This is so because his income elasticity is equal to 1.

Proponents of the traditional life-cycle hypothesis posited that policy variables do affect real variables in the economy, while the rational expectations framework propounded by Hall assumed that the rational consumer has perfect knowledge of the markets and hence consumption does not respond to temporary changes in government policies.

Having reviewed the previous literature, the present study examined the savings function with taxation for the Indian economy. To estimate the savings function, the conventional method of ordinary least squares could not be applied for Indian time-series data due to the presence of a unit root problem. The variables — savings per capita, per capita income, after-tax rate of interest, direct tax per capita and consumer price index — are non stationary in nature. The present study, therefore, conducts another test — cointegration — to investigate the relationship between savings and tax policy variables. If per capita savings, income per capita, and other variables such as direct tax per capita are integrated of order 1 and if there exists a long-run relationship between these two variables, then they are cointegrated. The analysis of cointegration is based on the work developed by Engle and Granger (1987).

According to Engle and Granger (1987) and Granger (1988), if there is cointegration between two variables, or between a dependent variable and a linear combination of independent variables, there must be causation in at least one direction between those variables. These authors developed error-correction models to provide unbiased estimates in the presence of nonstationary variables in the model. The present study has used this approach to estimate a savings function for the Indian economy.

The validity of the study depends upon the statistical tests employed. The classical hypothesis testing procedures, such as the Student "t" test, and "F" test, are not appropriate in the presence of random walk. The relevant tests that are currently used on time-series data are unit root tests, the Chow test for structural breaks and diagnostic tests, such as tests for serial correlation, functional form, and heteroscedasticity. The data analysis reveals that private savings per capita is non stationary in nature. Even the scale variable, income, the independent policy variables — direct tax per capita, after-tax rate of interest, price variable and the jointly determined variables — and the export-to-G.N.P and terms of trade are I(1).

The study has used maximum eigenvalue statistics and trace of the stochastic matrix to test the null hypothesis of no cointegration (r = 0) against the alternative hypothesis that there are r > 1 cointegrating relationships among the above mentioned variables. The test result rejects the null and shows that there is at least one cointegrating relationship.

The scale variable (per capita income) and the policy variables, are cointegrated with private savings per capita. The estimated cointegrated vectors in Johansen estimation show that there is a long-run relationship between these variables. From the theoretical literature, it is evident that the savings ratio (S/Y) is constant in the long-run and this is true for Indian economy, where the private savings per capita is cointegrated with per capita income. The study shows that apart from income, tax policy variables also influence private savings.
The ECM model reveals the fact that the growth rate in savings per capita is adversely affected by the growth rate in real direct tax per capita. The model shows that a one per cent rise in the growth rate of direct tax will lead to a 0.42 per cent fall in the growth rate of savings. This is in conformity with the theory that direct taxes adversely affect savings and thus the growth of the economy.

The Indian data indicates a direct relationship between the export ratio and private savings per capita in the long-run. This variable is also positive in the short-run, but is not statistically significant at the 5 per cent level of significance. The terms of trade variable did not perform well both in the short and in the long-run. However, it may be noted that the coefficient of the ECM model is negative (–0.29) and is statistically significant. The model converges to an equilibrium solution.

It is evidenced that a tax policy that results in increasing the rate of private savings gives an impetus to the growth of private investment in any economy. The supply side economists, Evans (1983), Canto, Joines and Laffer (1983), Mathur (1985), Summers (1986), Marsden (1990) and Trella and Whalley (1992) have reiterated the fact that if government encourages savings through cuts in tax rates, this will inevitably result in an increase in private investment. There is, of course, nothing new about this view; however, there is considerable support for this view with the increasing empirical evidence from Australasian economies.

Direct Taxation and Capital Formation: South Asian and East Asian economies

A comparative study of selected Australasian economies has helped to generalise the effect of direct tax on capital formation and growth. It is argued by tax experts — Harberger (1990a), Vickrey (1991), Tanzi and Partasarathi (1992), Trela and Whalley (1992) and Feltenstein and Shah (1995) — that reducing tax rates on productive income and providing tax incentives for investment can lead to a permanent higher level of income. All the selected Australasian economies reduced their direct taxes after their tax reforms of 1980s and 1990s. The study revealed that these tax changes have led to an increase in savings and capital formation.

China
The tax system of China is different from other Asian economies under study, since the country was centrally planned and very few taxes existed before the reforms of 1980s. China depends on one or more categories of taxes, including tariffs on imports, export taxes, income or gross receipts taxes on enterprises, and taxes on goods and services. China's direct tax system differs from that of other Asian economies, since enterprise income tax is a major source of revenue earner. Moreover, the individual income taxes are negligible in China, whereas they contribute nearly 2 per cent of GNP in other middle-income countries.
The high share of enterprise income and profit taxes in total tax revenue is characteristic of centrally-controlled economies, where such taxes raised, on average, 34 per cent of tax revenue in 1985. However, the share of these taxes has declined to 14 per cent with the transition from a centrally-controlled economy to a market-oriented

economy. In terms of taxes on international trade, China is comparable to industrialised countries, where such taxes raised, are around 8 per cent of total tax revenue in the nineties.

China's tax reforms show that the tax and investment incentives provided by the government have accelerated the growth of foreign and domestic investment in the economy. These reforms include a variety of tax and investment incentives for foreign businesses established in the Special Economic Zones (SEZ). However, it is evident from Global Financial Integrity (2012) that there are Illegal financial flows from China and mis-invoicing during trade transactions is worth noting from this report and precautionary measures to be taken in the future. It is suggested that "the closer scrutiny by more effective regulators in advanced countries makes portfolio investments with illicit funds more difficult, accounting for the bulk of such funds to flow to tax havens like Bermuda and the Cayman Islands" Global Financial Integrity (2012, p.12). A preliminary evaluation of the non parametric data analysis reveals that there is a mild inverse relationship between the tax mix ratio and the investment-to-GDP ratio.
A comparative study between the South Asian and East Asian economies was used to examine the effect of direct taxes on capital formation. The countries chosen were Bangladesh, India, Pakistan and Sri Lanka in South Asia. The East Asian countries selected were Japan, South Korea, Malaysia and Singapore. The personal income tax rates in the South Asian economies do not vary significantly from that of East Asian economies. However, the minimum rates of personal income tax are as low as 3.5 per cent in Singapore, 5 per cent in Korea and Malaysia, and 10 per cent in Japan. The corporate income tax rates are marginally lower in East Asian economies compared to South Asian economies.

The variables chosen to study the effect of tax on capital formation among the South Asian and East Asian economies were the investment-to-GDP ratio, the rate of return on capital, the after-tax rate of interest and the incremental tax mix ratio. These variables were tested for unit roots and they were found to be stationary. The primary reason for stationarity among these variables was that they are ratios and they depict variation in relative terms. Ratios were used in order to facilitate comparison between different countries. When we compare the investment-to-GDP ratio to the incremental tax mix ratio, we find that both these variables have moved in the opposite direction for most countries. A pooled cross-section analysis was conducted on all the selected South Asian and East Asian economies. The results showed that the Samuelson type of accelerator model that considers lagged investment does have a significant effect on investment for both South Asian and East Asian economies. However, the tax mix variable, though negative, was not statistically significant. In general, no decisive conclusion could be drawn about the effect of direct tax on capital formation for the pooled cross-section data. Nevertheless, for the Indian economy certain conclusions can be drawn, based on the study.

The time-series data analysis of the Indian economy revealed that the tax mix variable is an important variable and that there is an inverse relationship between the change in direct tax and capital formation. A one per cent change in the direct tax ratio led to a decline of 0.12 per cent in the private capital formation ratio in India during the same period. The results showed that the tax mix variable was statistically significant at the 5 per cent level of significance.

Tax policy issues

Tax policy advocates tend to focus upon reduction in marginal tax rates to boost production and growth. Reducing marginal rates was an extremely important objective in many developed countries, such as the United Kingdom and the United States of America. Top marginal rates were also cut in many developing economies during and after the 1980s. With increasing capital mobility in the world economy, high rates of taxation of income and capital will retard economic growth in both developed and developing economies. In India, there have been spurts of growth following reductions in top marginal rates of taxation.
Structural reforms in low-income developing economies like India have yielded beneficial results in terms of reduction in marginal rates of income tax and greater yield in collection of direct tax revenues. The maximum marginal rate on the highest slab has declined from 60 per cent in 1984-85 to 40 per cent in 1994-95 and to 30 per cent in 1997-98. The corporate income tax rate was also reduced from 55 per cent to 40 per cent during the period 1984-85 to 1997-98. Though the rates have declined, the share of direct tax revenue has increased. It has increased from 20 per cent to over 25 per cent of total tax revenue during the same period. Reduction in direct tax rates and improvement in direct tax revenue collections is a healthy trend from the point of view of promoting saving and capital formation. Moreover, tax incentives in high technology and export sectors have developed the export potential of the country.

The achievement of horizontal equity and proper tax compliance are also important considerations to promote growth in developing economies. The tax reforms of developed or newly industrialised economies cannot be applied directly in developing or less developed countries. The income tax in developing countries is not a broad-based tax, since only a relatively small, affluent section of society pays it. Moreover, these economies face the grave problem of tax evasion. In India, more than 50 per cent of money in circulation has been estimated to be unaccounted money or black money. It is absolutely essential in these economies to improve tax administration and compliance. The 1997 Voluntary Disclosure Scheme was a great success in mopping up Rs 100,500 million. The present study proposes personal expenditure tax as an appropriate tool for preventing future evasion of direct tax and this would eventually promote growth.

To reduce the activities of the parallel economy, the black money in circulation, the present government of India has introduced a new scheme under which by paying a tax at 30%, a surcharge of 7.5% plus penalty of 7.5%, taking it to 45%, an individual or a company (assets) can come clean in 2016. Last year undisclosed foreign asset holders (in 2015) could come clean, from being prosecuted by paying a tax of 60% according to Budget (2016) as cited by Deepshika (2016).

The strategic tax design: A conceptual frame work

In1956, OECD developed a series of tax treaties articles. These included continuing commentaries and updates (i.e. Model Tax Convention on Capital and Income published in 2010 ("OECD Model Convention"). It was initially reserved for OECD members to conduct tax treaty negotiations. The OECD Model Convention is designed to provide "a means of settling on a uniform basis the most common problems that arise in the field of international judicial double taxation". All OECD members are required to conform to OECD Model Convention. Following internationalization of the world's trade, OECD's motives have been shifted, unceasingly striving to extend OECD Model Convention to Non-OECD members. Providing Non-OECD economies with assistance in the development of their tax system will hope fully make this model convention global acceptance. The OECD Model Convention has been accepted as benchmark for OECD and Non-OECD countries.

Unlike OECD, the UN takes a balanced approach in formulating a tax model convention. Since 1980, the UN has been developing double taxation agreements model between developed and developing countries ("UN Model Convention"). The UN Model Convention is seen to protect the taxing rights of developing countries. This statement is debatable. The OECD Model Convention seems to provide a harsher approach than the UN Model Convention. The OECD Model Convention does not effectively protect the taxing rights of developing countries. There are studies which may provide solutions to overcome these deficiencies related to taxing rights which may be present in both OECD and UN Model Convention.

The taxing right is considered an important element of a country's sovereignty. It is common knowledge that the OECD and UN Model Convention have a tendency to dilute the trading countries' taxing rights. The tax infringement will automatically have adverse effect on the developing countries' sovereignty. Therefore, developing countries are questioning the integrity of these two models. Developed countries believe that tax treaties models favor the country that created these tax models. It is evident that sovereignty in the developing countries has been adversely affected because its taxing policies has been controlled and disrupted by these tax models.

The tax problem faced by developing countries are the following: taxing rights on capital taxes, distributive rules (business activities; withholding taxes on dividends, interest and royalties; capital gains), business profits, base erosion and profit sharing (BEPS), relief of double taxation, non-discrimination mutual agreement procedure and arbitration (transfer pricing), and anti-abuse provisions (treaty shopping), the research paper is to make a comparison between these models.

The present study recommends the introduction of a comprehensive taxation. The proposed system of direct personal taxation is based on the simultaneous application of a number of criteria such as income, disposable wealth, capital gains, gifts, and personal expenditure to be administered jointly on the basis of a single comprehensive return. This would have an important self-checking feature for tax evasion.

Improving the Existing Direct Tax System
As suggested by Chelliah (1992), the personal income tax base may be widened and the rates of tax may be kept low. Reducing the tax shelters and bringing within the tax net the most important perquisites would reduce horizontal inequity. Broadening of the base would also allow further reductions in the rate of tax.
- Perquisites such as house rent allowance, leave travel allowance and sitting allowances of members of Parliament and State Legislatures can be taxed;

- Fringe benefits in the form of concessional interest rate charged on loans granted to employees for the purchase of durable goods and houses can be taxed;
- In order to bring the "hard-to-tax" group into the tax net, presumptive taxation based on the estimated income of small businesses would be a good method for a large number of small businesses. Though the government has considered certain aspects of presumptive tax, it is not based on the estimated income scheme;
- If the government is not confident enough to implement the two-tier personal expenditure tax, a cash flow tax or the value added tax on corporations, at least can be implemented and the present discrepancies in the system could be corrected;
- The existing three slab rate with the highest marginal rate of tax of 30 per cent can be continued with strict enforcement; and
- Also widening the tax base by automated self-checking income, disposable wealth, capital gains, income, gifts, and personal expenditure to be administered jointly on the basis of a single comprehensive return (Figure 1).

AUTOMATED SINGLE COMPREHENSIVE RETURN

- Disposable wealth
- Personal expenditure
- Capital gains
- Gifts
- Income

FIGURE 1: WIDENING THE TAX BASE BY AUTOMATED SELF-CHECKING

In the case of existing corporate income tax, the following steps are suggested:
1. The small-scale corporations with total income not exceeding million dollars may be subjected to a lower corporate rate of tax of 20 per cent. These corporations find it difficult to mobilise resources in the capital market and they need to plough back a greater proportion of their income;
2. The present depreciation scheme could be modified to accommodate more fully inflation adjustment;

3. The inflation adjustment scheme suggested by Chelliah (1992) may be considered for the computation of capital gains arising on a transfer of a capital asset;

4. As stated by Kotrappa (1996), the most complex issue of indexing lies in the proper treatment of inventory for tax purposes. It is difficult to match inventory cost against the proceeds of sale. Generally, the last-in-first-out basis of inventory valuation is suggested to minimise inventory profits under financial accounting procedures. This system considers financial aspects but ignores physical facts relating to the value of the inventory. During an inflationary period, it permits an increase in inventory values to be free of tax and hence a presumptive method may be used for calculating the indexed inventories and the level of corporate tax; and

5. Finally, elimination of the discrimination against equity capital and encourage corporations to widen the equity base. The proposed system enables the corporate sector to mobilise adequate resources to replenish obsolete plant and machinery, realised through the extra funds generated by lowered tax rates and inflation-indexed depreciation calculations. The increased equity base enables the corporation to acquire more debt capital by trading on equity. Eventually, the capital base of the company expands and this facilitates capital formation. Moreover, it encourages foreign investment, when the rates of tax are competitive with international standards. As far as the wealth tax and gift tax are concerned, the existing tax rates are moderate and therefore may be retained at present rates and implemented properly.

A simple simulation exercise is used to explain the differences in the effect of income tax and expenditure tax on return on savings. The study shows that as the rate of income tax increases from 0 per cent to 33.33 per cent, the return on savings declines from 10 per cent to 6.67 per cent and further to 2.5 per cent if the tax rate rises to 75 per cent. On the other hand, under the expenditure tax regime the rate of return on savings remains the same irrespective of the rate of tax. It is indeed possible to shift the balance of taxation within direct taxes away from income and towards personal expenditure, in a manner conducive for growth.

With regard to business tax, consumption-based tax is preferable for the following reasons:
- The cash flow approach based on R+F base is suggested, since it does not discriminate against equity income. It discourages unproductive borrowing.
- It enables the government to reduce the rate of tax, since the tax base becomes broader with the inclusion of net debt.
- It avoids unnecessary delay and complications in computing the taxable income. All business-related expenditures are fully deductible in the year they are made, while this is not the case for an income-based business tax. They are capitalised and recovered as deductions in the following year.
- Foreign investments can be taxed on the basis of the cash flow approach, which is generally preferred by investors.
- Finally, under the cash flow approach there is full indexation and price level changes and other imperfections cannot affect the measurement of cash flow income.

The central message of optimal tax theory is that the tax induced inefficiencies are varied and they ought to be corrected in the design of appropriate tax policy. The optimum tax theory favours a tax on the consumption base instead of income.

In the historical evolution of government finance, the income tax is a relatively new tax. In 1799, William Pitt of Great Britain imposed a comprehensive income tax on all residents of Great Britain to maintain the solvency of the British government to meet the huge expenses incurred due to the Napoleonic wars. Income Tax was repealed in the English Senate after the war. It reappeared again after many decades. This pattern of introduction, repeal, and eventual, permanent reinstitution is found in other countries as well. In the US, for example, income tax was first introduced in 1862 during the civil war, revoked in 1872 and finally reimposed permanently in 1913. In the course of time, this tax has grown to be one of the most important sources of tax revenue.

In a similar light, although expenditure tax was introduced in India twice and repealed later it does not mean that such a tax is not feasible. It only means that there is a need to educate the governments, the public and the tax administrators about the importance of such a tax reform from the point of view of reducing tax evasion and promoting savings in the Australasian economies. As Auerbach (2013) mentioned with regard to implementation of consumption tax, and to impose a zero tax on capital, past experiences indicate that what is not politically possible can change completely over a period of time; and nothing can become politically possible unless a body of tax experts illustrate the pros and cons.

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Abstracts

The Antecedents of Intention to Use Social Media Product Information

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Extended Abstract

Consumers obtain abundant product information using various types of online sources. Among them, social media is somewhat different from other online sites it is an interactive communication channel. People share their opinions using social media and the interactive information directly affects how they evaluate products and purchase intention. This study investigates the factors that affect intention to use social media as a product information source. Media richness theory and technology acceptance model are applied for theoretical foundation. Daft & Lengel (1984) introduced media richness to explain information processing in communication. Richness is defined as "the potential information-carrying capacity of data" (Daft & Lengel, 1984, p. 196). Capacity of immediate feedback, multiple cues, personalization, and language variety are determinants of the degree of channel richness. Media richness theory has generally been supported when tested on traditional media, but inconsistent results were found in new communication media (D'Amber, et al., 1998; Rice, 1992). The interactivity of new media allows consumers to become more engaged with higher involvement (Bucy 2003) and have more positive attitudes toward websites (Kalyanaraman & Sundar, 2003). *Davis (1989) developed the technology acceptance model (TAM)* based on the theory of reasoned action *to explain computer usage behavior*. Two constructs, perceived usefulness and perceived ease of use, measure the degree of an individual's system usage and perceptions in examining behavioral intention and actual use. Using the two theories and previous research findings, a conceptual model is created and the following hypotheses are developed.

H1: Social media richness is positively related to attitude toward social media and social media credibility.
H2: Attitude toward social media is positively related to social media ease of use and usefulness for product information.
H3: Social media credibility is positively related to social media ease of use and usefulness for product information.
H4: Social media ease of use and usefulness for product information is positively related to attitude toward product information.
H5: Attitude toward product information is positively related to intention to use social media for product information.

Data were collected using a web-survey from 277 undergraduate students enrolled in two universities in the Northeast United States. Using exploratory factor analysis (EFA), a 7-factor solution of 34 items was identified. All measures demonstrate good reliability. Confirmatory factor analysis (CFA) was examined for the overall validity of the measurement model. The CFA results indicate an acceptable fit with $\chi^2 = 927$, df = 502, *p*-value = .000, CFI = .95, RMSEA = .06, and TLI = .94. All loading estimates are significant (p < .000) with the lowest being .62 and the highest being .93. The variance extracted estimates are .56, .59, .69, .73, .69, .72 and 80. In addition, the construct reliability estimates are all adequate, ranging from .83 to .94. Discriminant validity is measured supported. For the overall theoretical model specification and the hypotheses, the SEM results indicate a satisfactory fit of data with $\chi^2 = 1104$, df = 514, *p*-value = .000, CFI = .93, RMSEA = .06, and TLI = .92. Regarding the hypotheses tests, the SEM structural path results reveal that all relationships among the constructs except the relationship between attitude toward social media and social media usefulness for product information are significant. The results indicate that social media richness enhances attitudes toward social media and social media credibility. The attitudes toward social media influence social media ease of use, but not usefulness. The social media credibility is positively related to social media ease of use and usefulness for product information. Social media ease of use and usefulness influence attitude toward product information on social media. The attitude toward product information is positively related to use social media for product information. For managerial suggestions, utilizing interactivity of social media can help marketers increase positive attitudes toward social media and social media credibility. Thus, marketers should communicate with consumers consistently and interact by responding immediately. In addition, it is crucial for marketers that messages should be ease of understanding and useful for target consumers to increase positive perception toward social media product information (References are available upon request).

Stock Market Financial Ratios: Case Studies of Two Major Australia, New Zealand Banks

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Abstract

The main question that arises in the minds of academics, financial analysts, property market managers or brokers are 'how will a particular investment fund or a bank shares perform in the stock market in the Trans-Tasman region?' According to Peter and Peter (2006), Risk-Adjusted Performance (RAP) methodology is useful to investors and others who are trying to make sense of their varied options for several decades, and even today. In spite of the rapid growth of the real property market in Australia and New Zealand, and the universal growth of real estate property over the past 40 years, it is evident that the financial paper/stock risks are much higher compared to real property risk.

In order to analyse risk, we use the Risk-Adjusted Performance (RAP) methodology developed by Modigliani and Modigliani (1997). First, this paper explores the relationship between the Australian real estate and equity market risks. The results of this paper are consistent with the previous findings which stated that the Australian real estate sector consistently outperformed its counterparts in terms of risk adjusted returns. Second, the paper looks at the two main banks in Australia which are Australia and New Zealand Banking Group (ANZ) and Commonwealth Bank of Australia (CBA) share returns. With regard to financial institutions, ANZ and CBA are listed among the oldest nationalised banks in Australia. ANZ was founded in the 1830s and initially was opened as the Bank of Australasia. Its current CEO is Michael Smith and has its headquarters located in Melbourne (ANZ, 2014), whereas CBA was founded in 1911 under the Commonwealth Bank Act with its current CEO Ian Narev and its headquarters located in Sydney.

Monthly stock closing price data for the years 1st July 2007 to 30th June 2015 for the two major banks are used in this study. Simple and complex measures of risk/return such as Price Earnings Ratio (P/E Ratio), Capital Asset Pricing Model (CAPM), RAP measures are employed to analyse the performance of the banks. The results showed CBA held a good position among its competitors during the last decade in Australia. On an average, CBA investors received a stable return on their investment for the majority of the period in 2015. However, ANZ recorded significant fluctuations in its share price throughout the period analysed which led to very low or no returns to its investors. ANZ bank faces huge rivalry which has resulted in an adverse impact on its interest rate margin. Finally, we observe that this is true with the RAP measure of property assets rising manifold during the eighties and nineties and the dramatic increase in the volatility that has occurred especially during the last 2 decades. Cointegartion analysis is also used to measure the risk adjusted return from listed properties.

Key Words: ANZ Bank, CBA, CAPM analysis, Modigliani and Modigliani RAP, Risk Management, Cointegration analysis

A Study of Advertising Language as Antecedent to Children's Brand Recall and Ad Recognition

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There has been plethora of research that has examined children's understanding of TV advertisements. However, it is evident from the literature review that no studies in this area have covered advertising messages and its impact on children's brand recall and recognition. Copywriters use various creative devices to lure the consumers and very impressionable consumers such as children face far more drastic effects of these creative ways of persuasion.

Theoretical foundation

On the basis of Piaget's(1952) theory of cognitive development as a theoretical foundation for predicting/ understanding children's response and understanding , a quasi-experiment was carried out for the study, that manipulated measurement timing and advertising messages(familiar vs. unfamiliar) keeping gender and age group as two prominent factors.

Research objectives/ Methodology

With an aim to study impact of taglines on children's brand recall, recognition, likability of taglines and their understanding of relevance of taglines, a total of hundred children from 8-12 age group and 13-16 age group participated in the experiment. The study was divided into two phases: content analysis of 780 advertising messages and experiment design respectively. To further authenticate the findings and to test the generalizability of the findings for Indian Kids' population, the author applied Monte Carlo simulations with bootstrap technique. These simulations corroborates with the findings of the experiment.

Findings

The study revealed a stronger relation between brand recall and recognition among elder children, thus, coinciding with Piaget's theory of cognitive development. However, gender seemed to have no significant effect on the variables. Children's understanding of advertising messages is further established positively by testing their understanding with reference to relevance of taglines and likability of taglines.

Contribution to knowledge

This study fills the literature gap in usage of advertising language and advertisements targeted towards children as consumers in India. This study has also merged the streams of research with theoretical developments in advertising, especially those of the confectionary and beverages segments and are meant for the Indian children as consumers, which very few studies attempt to do for Indian market.

Keywords: Advertising, Brand recall, Ad recognition, Developmental Theories.

Cultural Effects and Perceptions of CSR

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Abstract
      This paper explores perceptions of Corporate Social Responsibility among individuals from different cultural groups. Studies have shown that CSR is a universal ethical and moral imperative. Similarly, studies have demonstrated that CSR has sustainable economic benefits to individuals, corporations, and societies. While there is a clear business case for CSR, few studies have evaluated how individuals in different cultures perceive CSR in different societal roles and levels. Using multi-country data, the study illuminates our understanding of CSR perceptions among different cultural categories and how perceptions translate into specific attitudes towards CSR in organizations. A better understanding of CSR among different cultural groups is essential for multinational companies in designing CSR initiatives and implementation strategies among different cultural groups.

Strategy and Complexity: An Alignment

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Abstract

Over the years, the field of strategy has developed to incorporate new theories, competitive environments, and new stakeholders, among other variables. The discipline continues to enrich itself by adapting theories from other fields including economics, organizational behavior and finance. Most strategic theories have evolved on the implicit assumption that the firm is a relatively stable bureaucratic entity with a given set of rules and norms. Major streams such as institutional theory, resource-based view capabilities framework and transaction cost theory are based, in part, on these assumptions. Complexity of the contextual environment certainly complicates the utility of these theories. Complexity is often considered as a state of the internal and external environments; e.g. institutional complexity, environmental complexity, the complex man and contracting complexity. Consequently, complexity is a variable that needs to be mitigated in one form or another. In this paper, we argue that complexity goes beyond the competitive environment and is at the core of strategy itself. The most effective approach requires a complex strategy as a necessary condition for crafting effective strategy. We develop strategic formulations that incorporates complexity science by aligning strategy theories with relevant frameworks from complexity science such as fractals, chaos theory, agent-based modeling, emergent evolution and autopoiesis.