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The Colloquium mailing address:

School of Business & Law

Edith Cowan University

270 Joondalup Drive, Joondalup, WA, 6027

Australia

Email: sblresearch@ecu.edu.au

<http://www.ecu.edu.au/conferences/2016/ecu-business-doctoral-and-emerging-scholars-colloquium-2016/overview>

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Selection of a Model for Exploring Cross Market Linkages: A Review of E-GARCH, Markov-switching Framework and Structural Break Models

A. Do, R. Powell, A. Singh and J. Yong

School of Business and Law, Edith Cowan University, 270 Joondalup Drive, Joondalup, Western Australia, 6027

Corresponding Author's Email Address: a.do@ecu.edu.au

Abstract: *This article undertakes a literature review on the E-GARCH model, the Markov-switching framework and two structural break tests. Each model addresses different criteria and has different limitations, however, they complement each other nicely. The E-GARCH model deals with serial correlations and heteroskedasticity but implies spuriously high persistence in volatility if structural breaks are not accounted for. The Markov-switching framework can model specific regime cross-market behaviours and address the persistency in volatility effectively when combining with a GARCH model. Unknown structural breaks and impacts of a specific event can be tested using LSTR and SF models.*

Keywords: *Stock market linkages, GARCH, Markov-switching framework, Structural break*

JEL Classification: C1, G15

1. INTRODUCTION

As a result of the Asian financial crisis 1997, an abundant number of empirical studies has explored the linkages among global stock markets employing a wide range of methods. For example, correlation coefficient is commonly used to measure the strength of stock return co-movement (Becker, Finnerty & Gupta, 1990; King & Wadhvani, 1990). Multi-factor models are designed to capture the drivers of market associations associated with global and domestic economic fundamentals (Bekaert, Ehrmann, Fratzscher & Mehl, 2014; Forbes & Chinn, 2004). Generalised autoregressive conditional heteroscedasticity (GARCH) models focus on the dependence structure of volatility that account for heteroscedasticity and volatility clustering (Bollerslev, 1986; Engle & Kroner, 1995). Copulas are alternatives that allows to capture the asymmetric volatility dependence of complicated structures (Jondeau & Rockinger, 2006; Peng & Ng, 2012).

Selecting the most feasible model is challenging because defining the “best” model is controversial. A good starting point should consider the following two questions:

1. Which model can address the research questions adequately?
2. Which model is the best fit with the data used?

This article discusses three possible models that can address these questions effectively including the exponential GARCH (E-GARCH) model, the Markov-switching framework, the two structural break tests namely Logistic Smooth Transition Regression (LSTR) and Step Function (SF).

The remainder of this article is structured as follows. Section 2 summarises the method selection criteria including the research questions and the main attributes of stock returns. Section 3 describes these models under review and discusses their applications and limitations. Section 4 concludes.

2. METHOD SELECTION CRITERIA

2.1 Research questions

The model must fit the research questions. The proposal, for the purpose of this article, aims to investigate the linkages between the share markets in China and other countries including the U.S., the U.K., Japan, Germany, Australia, Hong Kong (HK), Taiwan, and the ASEAN-5 countries over the last twenty years. There are two major questions pertaining to this topic:

1. What is the nature of market interdependence in terms of return and volatility between these countries?
2. Is there any structural break which may be generated from the integration process during the period under review?

An association between two markets can be explored in various aspects but the majority of empirical studies focus on strength, persistence, trend, and asymmetries in volatility responses. Each of the selected models under review is specialized in one of those areas. The E-GARCH model can identify causality between markets and capture the asymmetries in volatility response (Hansen & Huang, 2015; Jane & Ding, 2009). The Markov-switching framework can model the persistence in volatility and the dynamics of the volatility responses in different economic states (Bollerslev, 1990; Boyer, Kumagai, & Yuan, 2006). Thus, multiple perspectives are considered for the first question. For the second question, a structural break test can be employed to recognize a permanent change in a long-term relationship. This is critically important in studying a long time horizon because it can decrease significantly the instability of the model used especially when the break is large (Pesaran & Timmermann, 2004) or there is a sudden change i.e. “discontinuous”. The Markov switches can deal with the former factor whereas the latter

factor can be solved by a simple technique such as the SF model. In the case where structural breaks are unknown, the combination of these models is commonly seen.

2.2 Characteristics of return distributions

Many classical models in financial and econometric modeling and forecasting are underpinned by various assumptions about the attributes of return distributions that, however, are not supported by empirical findings. This article will discuss three common characteristics in time series data of stock returns namely normality, heteroscedasticity, and autocorrelation. These assumptions are critical in estimating the most efficient estimators of coefficients.

A normal distribution is one of the most fundamental assumptions in many economic models and theories, yet too restrictive in empirical settings. Distributions of stock returns of China, Hong Kong, and the U.S. markets are found to contain negative skewness and excess kurtosis (Fang, Liu, & Liu, 2015; Mohammadi & Tan, 2015; Wang, Miao, & Li, 2013). This leads to a wide range of applications on non-normal distributions in empirical literature such as student's *t*, F-distributions or Chi Square.

When the conditional variance of the disturbance term ε in the above equation is constant over the whole period regardless of the value taken by the explanatory variables, it is called "homoscedasticity". When this state does not hold, it is referred as "heteroscedasticity". In simple words, the residual factors that are not included in the model are somehow related to the explanatory variables in the model. Failure to account for heteroskedasticity results in sub-optimal estimation of coefficients. The consequences of this issue were thoroughly investigated and discussed by Forbes and Rigobon (2002).

Autocorrelation, also called volatility clustering or serial correlation is critical in determining the most efficient and unbiased estimators of an equation's parameters. Failure to account for this issue despite its presence can lead to seriously misleading inferences by introducing an upward bias in the computed *t*-values, hence increases the Type I error (Gujarati & Porter, 2009). Nevertheless, classical models normally ignore the existence of autocorrelation and assume the variances of two time series are independent from each other. In fact, autocorrelation is quite common in empirical findings in both emerging and advanced stock markets. A large quantity of literature has been devoted to investigate this issue and finds that the causal factors of autocorrelation in stock returns and volatility are various. For example, positive feedback traders are found to explain autocorrelation among the U.S., U.K., Germany and Russia markets (Bohl & Siklos, 2008); or the degree of illiquidity is positively correlated with the autocorrelation of stock returns in China (Yang, 2015), and India (Batten, Szilagyi, Thornton, Aronson, & Emerald, 2011).

Besides, a number of studies overly emphasized the size of shocks rather than the sign. In fact, both marginal distributions and joint distributions are characterized by asymmetries (Patton, 2004). Asymmetries in financial time series can stem from two sources: the skewness of the marginal distribution and the cross-sectional asymmetric response of volatility from a joint distribution. For

example, the return of a stock market is more responsive to bad news in another stock market rather than a good news (Hu, 2006). Alternatively, there are higher chances for stock markets to crash together than boom together (Chiang, Jeon, & Li, 2007). Methods that apply equal weights to all observations regardless of the sign may underestimate the probability of return co-movements, especially in a crisis, if the joint distribution has significant asymmetric tail dependence (Ergen, 2014). For these reasons, an appropriate method should address these issues thoroughly in the context of the research questions and scope.

3. REVIEW OF METHODOLOGIES

3.1. GARCH and E-GARCH

Model description

The generalized autoregressive conditional heteroscedasticity (GARCH) model was developed by Bollerslev (1986) based on the Engle (1982)'s ARCH framework. It implies that the variation in the volatility of stock returns consists of two major components: the observable past volatility and the residual factors which are represented by an "error term". With this setting, a general GARCH model is developed to deal with autocorrelation and heteroscedasticity. In a general form, the model regresses the stock return and its variance at a discrete point in time on lagged values of itself and all other driven factors. Even though GARCH models are restricted to the normality assumption, they account for past volatilities of stock returns and heteroskedasticity which are the limitations of conventional econometric models. A general GARCH model, however, does not justify asymmetries in volatility dependence when an impact of a negative shock is different than of a positive one of the same size (Ang & Chen, 2002).

Nelson (1991) introduced an exponential GARCH model (EGARCH) by incorporating a threshold into the general GARCH model and uses the natural logarithm of returns to account for asymmetric relations of volatility across different markets. As an example, to account for the sign of a shock, a threshold denoted by z is imposed in the model's equation as follows. Assume $z > 0$ represents good news and $z \leq 0$ represents bad news. If $z > 0$, the estimated value of the sample mean will be linear with $\theta + \gamma$ or $\theta - \gamma$ otherwise. As a result, the estimated value is not only dependent on the size but also the sign of the innovations. Thus, technically speaking, this setting permits the impact of sign of a shock in the dependence structure of volatility.

Another major benefit of E-GARCH is the flexibility to model non-normal distributions. A small exercise conducted by Alexander (2008) illustrates the best fit model for the returns of the FTSE 100 (the U.K. stock exchange) was skewed student t-E-GARCH. This clearly gives more benefits than classical models that are only available to standard distributions.

Limitations

Lacking standard benchmarks for the evaluation of the predetermined threshold can be one of the key disadvantages of this method (Boubaker & Sghaier, 2013). The result, consequently, is specific to the chosen value of the verge.

Another important limitation of a GARCH model that receives insufficient attention is the spuriously high persistence of conditional variance measured by the GARCH process if structural breaks in unconditional variance is not accounted for (Lamoureux & Lastrapes, 1990). The variation in stock return can be significantly reliant on the permanence of shocks to variance (Poterba & Summers, 1984). Even though the context of this statement is restricted to a single index underpinned by the assumption of unlevered firms, it however highlights the significance of determining structural breaks in employing GARCH model in a long time horizon.

Application

Despite the limitations, it is still one of the most widely used approaches that can deal with volatility clustering and heteroskedasticity in empirical literature. It was employed to examine the asymmetric response in volatility among the Chinese-back securities (Poon & Fung, 2000), and between the stock return and the exchange rate in the U.K. (Olugbode, El-Masry, & Pointon, 2014). The E-GARCH model also outperformed the Markov-switching model in forecasting volatility of stock returns dependent on the political factors in the U.S. (Leblang & Mukherjee, 2004).

Furthermore, combining E-GARCH with other approaches is also common. The mixture of the E-GARCH model and the analytical ARJI(-ht) model enables an in-depth examination of the asymmetric relationship between the Chinese share market and the world oil price (Zhang & Chen, 2011).

3.2. Markov-switching framework

Description

The Markov-switching framework introduced by Hamilton (1988) can be used to capture dynamic behaviors of volatility dependence across stock markets. The model assumes there are two different regimes over the whole period under review and each regime is characterized by different coefficient parameters and error terms.

The results of this model can have important implications in the persistence of a shock and the stochastic behavior of volatility, in contrast to GARCH or other conventional economic models that assume a single pattern of volatility for the whole period. This setting is more applicable to a long period and especially useful when there is a structural break during the period under review. Moreover, the majority of the persistence in stock price volatility can be long-lived and caused by the persistence in volatility of different regimes (Hamilton & Susmel, 1994). The study of persistency of volatility is critical to study

how long a market can be volatile for following a shock and how long it can revert to its long-term volatility level. This can be investigated and modelled through the regime switching process.

This approach is also useful when the regime and the point of transition are unknown. The change is modelled in a smooth transition process so that the model can capture an evolutionary transformation as well as a sudden break. In fact, assuming a continuous break is more practical than by an impulsive break by a single event. For these reasons, the Markov-switching framework is a powerful tool to thoroughly analyze the long-term equilibrium of the relationship among markets.

Limitations

Three things need to be estimated apart from the coefficients: the probability of the regime, the probability of the transition and the switching point. A major drawback of this setting is that the reliability of the estimated coefficient of a regime is impacted by that regime's prevalence (Enders, 2008). As such, the lower the chance of occurrence of a regime is, the higher the variance of an estimated coefficient is, hence increasing the model's reliability. Therefore, this model can be very effective in modelling the dominant regime over the period, but it does not give a precise estimation of coefficients for the regime that rarely occurs.

A further concern might arise in modelling transition probabilities into and out of fat-tailed states. The model implies that a regime will tend to remain at its current state if its probability of the transition to the other state is low and its persistence is high. Whether or not the Markov switching process can capture a substantial change with low probability of occurrence in a high persistent regime is untested. The effectiveness of the model in modelling tail risk, therefore, needs more scientific evidence. For this reason, the Markov-switching framework might be more suitable to capture an explicitly exposed regime, yet it is not a precise model to model a regime that has low chance of occurrence, thus indicating a limited predictive power in long-term.

Application

The Markov-switching framework can be combined with other models such as GARCH to study the dynamics in volatility dependence structure between different markets. Interestingly, even though E-GARCH outperformed Markov switching model in forecasting volatility of stock returns, regime switching GARCH model outperforms the general GARCH model in studying time-varying volatility in four segmented stock markets in China including A shares, B shares, H shares and S shares (Chiang, Qiao, & Wong, 2011). Supporting evidence was also found by Hamilton and Susmel (1994) when applying a regime switching ARCH model in the New York stock exchange. They found that the model has better fit to the data and more predictive power than the normal ARCH model. Other applications can be found in studying options-implied volatility in S&P500 index (Dueker, 1997), U.S. dollar exchange rates (Klaassen, 2002), and S&P 500 daily stock returns (Bauwens, Preminger, & Rombouts, 2010). In a normal GARCH model, with a symmetric dependence of volatility, the probability of

switching from a low volatility to high volatility regime is as same as from high to low. The E-GARCH model can study more complicated switching processes where the transition prevalence between low and high volatility can be different depending on a specific order. In addition, empirical studies focused on a time series of a single index, creating an opportunity to further explore the persistence in volatility in different countries and the changes in the persistence level before and after crisis.

3.3. Structural break

Model description

The central limit theorem states that any fluctuation in returns, volatility or the correlation of returns has a tendency to revert to a long-term mean, i.e. an “equilibrium”. A structural change refers to the point where the equilibrium shifts to a new level permanently, in which a new period is formed.

A structural break can be tested using the Step Function (SF) model proposed by Box and Tiao (1975) and the Logistic Smooth Transition Regression (LSTR) model presented by Terasvirta and Anderson (1992). The first model measures the impact of a specific event, but it does not identify the point of transition. If an event has a significant impact on an equilibrium of correlation, the structural break is assumed to occur at the same time the event happens. In contrast, the LSTR model can identify the time of the break which is particularly useful when the breakpoint is unknown.

The form of a Markov process can be very similar to a structural break model, however, the underlying settings and implications are very different. The regime switches are exogenous variables in a Markov process whereas the threshold in a structural break model is timing and imposed on the endogenous variable. Therefore, a structural break can identify the point of time whereas the regime-switching models can provide an in-depth analysis of the dynamic behavior of the inter-market dependencies in a smooth transition process.

Limitations

The SF method implies that the occurrence of a structural break is at the same time that a significant event happens, thus failing to account for lagging effects. In addition, there is no standard benchmark to select an event for testing. A standard practice allows an informal selection process. If a person believes country-specific risks have fundamental impacts on the long-term stock return, it is more likely that domestic events will be emphasized. In contrast, major global economic events might be preferred according to the “global hypothesis”, which asserts global risk factors are major drivers of the stock return co-movement.

In contrast, the LSTR model cannot explain what causes the structural break but it can estimate a short period that is most likely to consist of a structural break. This method, however, requires a further step to determine what causes this structural break to justify its economic meanings. The combination of the

LSTR and SF models are tempting because this could provide a more comprehensive perspective. However, a critical point for these methods is the lagging effect which is not fully accounted by either of them. Modelling lagging effects, nonetheless, is not an easy task and remains as one of the limitations in economic modelling.

Application

These models are mainly used to examine the dynamic correlations of stock returns. The SF model was applied to test for the impact of the Asian crisis on the return correlation in long run between some emerging and advanced financial markets in the Asian region (Chiang et al., 2007). It was also used to determine the effect of the QFII – a liberal policy for foreign investment in the Chinese share markets – on the market integration between China and the U.S., HK, and Japan (Tam, Li, Zhang, & Cao, 2010). The LSRF model was employed to test for stock return correlation at both sectoral and national levels between the Chinese markets and other global financial centers (Chiang, Lao, & Xue, 2013).

4. CONCLUSIONS AND RECOMMENDATIONS

This article highlighted that a good methodology should aim to address the research questions adequately and also best fit the data. Each method discussed in this article provides a different approach to the research questions. Determining the “best fit” model needs the undertaking of a formal process which is beyond the scope of this paper. Instead, this paper is more likely a preliminary review for possible models that can accommodate at least one of the distribution properties aforementioned.

The E-GARCH model provides a parsimonious and effective approach to deal with serial correlations and heteroskedasticity. It can be combined with Student’s t distribution or F-distribution to address skewness or fat tails in the return distributions of the proposed countries, similar to the approach conducted by (Alexander, 2008). It can also be used for testing asymmetries in volatility dependence however, the model cannot fully capture the asymmetries in return joint distributions due to the model’s settings. In addition, it can induce high persistence in GARCH estimates without accounting for structural breaks.

The Markov-switching model can capture specific behaviour of market associations in different economic states. It also provides an in-depth analysis of the persistence of long-term market interdependencies that can complement the GARCH models effectively. Even though a liberal number of studies employ GARCH models in Markov switches, only a few of them consider E-GARCH model. In a normal GARCH model, with a symmetric dependence of volatility, the probability of switching from a low volatility to high volatility regime is as same as from high to low. The E-GARCH model can study more complicated switching processes where the transition prevalence between low and high volatility can be different depending on a specific order.

Moreover, determining structural break is critical in studying long time horizon that includes catastrophic events. LSTR and SF models can be applied together, similar to the approach of Chiang and Chen (2016). The LSTR model can be used to identify any possible structural breaks over the whole period. Then, the SF model can be used to test for the impact of some selected events. Similar to the LSTR model, this test can identify unknown structural points and also accounts for heteroscedasticity and serial correlation.

Each of the above models are feasible options in exploring inter-market dependencies. Nonetheless, they have boundaries just as other models. Apart from the limitations specific to each model's settings, these models might not be the best alternatives for forecasting which can be considered for future research.

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Administrative Innovation in an Australian Public University

A. Fahrudi^{a,b}, D. Gengatharen^a and Y. Suseno^a

^a Centre of Innovative Practice. Edith Cowan University, 270 Joondalup Drive, Joondalup, Western Australia, 6027.

^b Faculty of Administrative Science. Brawijaya University, Jl MT. Haryono 163, Malang, Indonesia, 65145

Corresponding Author's Email Address: afahrudi@our.ecu.edu.au

Abstract: *Organizational learning can facilitate administrative innovation and it is affected by internal and external contexts. This paper applies Crossan et al.'s (1999) 4I framework to examine the effect of internal and external factors on an organization's learning process and the extent of its innovation. A case study of a large public Australian university is used to gain insights about the process of administrative innovation. A resource-constrained environment characterized by significant reduction in government funding and increased competition has encouraged university leaders to pursue administrative innovation aimed at increasing efficiency.*

Keywords: *Administrative innovation, Organizational learning, University*

JEL Classification: 0310

1. INTRODUCTION

Higher education sector generated \$12.9 billion or 68.6 per cent of total on-shore earning from Australia's educational services which in this way the sector has driven the education services to international students becoming the third largest export earner in the country in 2015 (Department of Education and Training, 2016). However, Australian public universities have been operating in a resource-constrained environment due to increased competition and the tendency of reduction in Australian government funding. As a result, university leaders should develop a range of innovation strategies with a focus on increasing efficiency to respond to anticipated reduced revenues. These leaders may need to change an organization's management system, pertaining to organizational structure, administrative processes, and human resources. These changes can be associated with administrative innovation (Gopalakrishnan & Damanpour, 1997). This study seeks to understand how leaders in a large Australian public university respond to its dynamic external challenges through the pursuit of administrative innovation.

The importance of organizational learning for facilitating innovation has been confirmed in empirical findings (e.g. Garcia-Morales, Jimenez-Barrionuevo, & Gutierrez-Gutierrez, 2011; Jimenez-Jimenez &

Sanz-Valle, 2011). Organizational learning is affected by various internal and external contexts (Argote & Miron-Spektor, 2011). Leaders' perception of their business environment influences organizational learning (Garcia-Morales, Llorens-Montes, & Verdu-Jover, 2006). Leaders need to provide internal contextual support for learning to occur in the organization to respond to changes in the external contexts (Berson, Nemanich, Waldman, Galvin, & Keller, 2006). Leaders should be able to foster both exploratory and exploitative learning and are expected to flexibly switch between them as required (Rosing, Frese, & Bausch, 2011). Exploratory learning is linked to search of new learning whereas exploitative learning is associated with refinement of existing knowledge (March, 1991).

The Crossan et al.'s (1999) 4I framework is used in this study to understand the underlying tension between exploratory and exploitative learning. The framework contains four related sub-processes: intuiting, interpreting, integrating, and institutionalizing. Intuiting and interpreting refer to the process of how ideas are developed and shared. Ideas may come from individuals or from discussions among organization members. Once a shared understanding within a group is achieved, the process of integration occurs. Finally, ideas that have been learned are institutionalized by embedding this learning in the organizational systems, structures, strategy, routines, and infrastructures for the rest of organization to adopt. These sequences are called "feed-forward" or exploratory learning. In contrast, the institutionalized learning feeds back from the organization to group and individual levels, creating a context that affects how people behave and think. This "feedback" or exploitative learning enables organizations to exploit institutionalized learning (Crossan, et al., 1999).

Exploration of new learning emphasizes the intuiting and interpreting phase of organizational learning (Berson, et al., 2006). Organizations can import new intuition and interpretations by changing their leadership team (Crossan & Berdrow, 2003). Strategic leaders need to be able to look both outward and inward to identify the external forces and create a working context that enables organization members to respond to these external challenges (Lin & McDonough III, 2011). In this way, leaders need to communicate a vision and strategy that can guide innovation activities and provide a sense of direction (Hunter & Cushenbery, 2011). These leaders may collaborate with external innovation partners, such as suppliers, universities, and external consultants to bring in new insights and specific skills required for delivering innovation (Schamberger, Cleven, & Brettel, 2013). Leaders also need to gather bottom-line initiatives since frontline employees often hold the accurate information on the misalignment between existing products, services or technologies and dynamic environment, potential demands and future opportunities (Wei, Yi, & Yuan, 2011). However, complex structures and bureaucracy, commonly found in large organizations, may prevent effective bottom-up or exploratory learning (Eisenhardt, Furr, & Bingham, 2010).

In the integrating phase, leaders often face tension between exploration of new learning and exploitation of existing knowledge (Berson, et al., 2006). The most difficult integration process is in the areas requiring a trade-off, particularly in resource allocation, with individuals or groups often competing for scarce resources (Crossan & Berdrow, 2003). In terms of university context, the ongoing tension between

the pull toward individualism by faculties and schools and a pull toward centralization from university administration often make the integration process difficult (Christopher, 2012). Leaders often communicate vision and strategy as a common goal and shared understanding to achieve integration (Hunter & Cushenbery, 2011). However, when participative integration is difficult to achieve, senior leaders may use their power and authority to influence the integration process but this process may result in integration of behaviours despite disjunctive belief (Crossan & Berdrow, 2003).

The process of institutionalization emphasizes the role of leadership in making knowledge available for exploitation (Berson, et al., 2006). Leaders may set specific guidelines and monitor goal achievement to enhance organization members' abilities to implement innovative solutions more effectively (Rosing, et al., 2011). In addition, top management's leadership and endorsement are required to minimize the inertia in the human capital and administrative systems that impede innovation (Kam-Sing-Wong, 2013). Decentralization complemented with high levels of formalization is often preferred to implement innovation and realize opportunities because it provides lower-level leaders more autonomy to make decisions to respond to the environmental changes quickly (Foss, Lyngsie, & Zahra, 2015). However, centralization may be more useful to implement radical innovation adoption with the potential resistance to change since it offers management more authority to implement radical changes (Ettlie, Bridges, & O'Keefe, 1984).

In the following sections, we describe the methodology used in this study and then discuss the findings, conclusions, and recommendations for future research.

2. DATA & METHODOLOGY

Case study methodology is adopted in this research because the research questions relate to "how" leaders facilitate organizational learning for innovation and the researcher has no control over behavioural events being observed (Yin, 2009). Multiple case studies are being undertaken in an exploratory analysis of the complex phenomenon to account for contextual differences. Qualitative approach is used in this research because it may present a greater clarity of the role and interaction of organizational assets within the organization's context that enable organizations to pursue organizational learning and in turn innovation. This paper reports on one of the multiple case studies. The organization under investigation is an Australian public university with large multi-campus serving local and international communities. It was selected because it has achieved a 5 star rating for teaching quality, generic skills, and overall graduate satisfaction for six consecutive years, as published in the Good Universities Guide. Data has been collected from a number of sources. Semi-structured interviews have been conducted with 12 organization members from different areas and levels of management. Participants were asked about the innovations in their organization in the last three years and the enabling factors. In this research, innovation does not have to be new services or practices in the industry but new to organization being investigated. Interview questions were developed based on 4I organizational learning framework outlined above (Crossan & Berdrow, 2003). These interviews were complemented by the use of

documentary sources (i.e. the organization's official website, annual reports, and press releases). A qualitative software tool (N*Vivo) was used to store and code all data sets. Interview data was classified thematically based on the predetermined framework and compared to the corresponding documentary sources to build interpretation for the case report.

3. RESULTS

The researchers found that the external context characterized by significant reduction in government funding and increased competition in the higher education sector drives administrative innovation intended for achieving higher efficiency. The Federal Coalition Government that came to power in 2013 subsequently announced its intention to undertake reviews of higher education funding, participation targets, quality assurance, and regulatory burden. In early 2014, the Federal Government proposed significant structural and funding changes to higher education including: an average 20 per cent reduction in funding for Commonwealth-supported places; fee deregulation to allow providers to set their own student fees for domestic students; extending the provisions of the demand driven system of uncapped places to non-university providers and to sub-Bachelor level qualifications, including the provision of government funding; and the introduction of student fees for research higher degrees. While the Federal Senate has rejected this educational policy changes in December 2014, the government still intends to introduce a 20 per cent funding cut for universities in the 2016-17 Budget.

In addition, the university anticipated for reduced revenues due to a significant reduction in local undergraduate enrolments in 2015. The number of local year 12 students in 2014 was half what was normal caused by the change of starting school age that was imposed in 2001. These circumstances were expected to impact on the competitive landscape of the domestic student market.

The university also experienced a decrease in the number of on-shore international students for approximately 15 per cent over the last few years from 2,732 students in 2010 to 2,307 students in 2013. This reduction were mainly affected by increased competition from its international counterparts, the strong Australian dollars, and policy changes for student visas. The university has implemented a range of innovation strategies to respond to these external challenges.

Leaders play a significant role in the process of innovation since they can provide contextual support for facilitating the organizational learning required for innovation. This contextual support may include changes in organizational structure, administrative processes, and human resources and therefore it can be associated with administrative innovation. The process of organizational learning for innovation in the organization being studied has been structured based on the 4I framework in the following sections.

3.1. Intuiting and interpreting stage

The senior leadership team together with the university council guide the interpretation of the university's strategic direction with a strong vision of community engagement. The university has differentiated its

services by developing a reputation for its teaching quality and supports for students. The university also wants to be recognized as a university that is able to meet the needs of the community by creating new applied knowledge through partnerships with industry. The university changed its leadership team to import new intuition and interpretations. New leaders often inspired staff and led major initiatives. Executive leaders initiated the “Vision of Growth” to enable it to grow during the anticipated resource-constrained period of reduced government funding and intense competition. The initiative was highly influenced by one of the executive leaders who has business background with particular concerns on cost management. This initiative was approved by the university council at its March 2014 meeting. The initiative was intended to increase efficiency and to adopt appropriate business capability models to generate more revenues.

The initiative extended the “One University – Student First” project aimed at making the university’s administrative processes more efficient to support the delivery of teaching and research activities:

“The basic aim of “One University - Students First” was to look for opportunities for us to remove duplication from the organization and to improve our processes and activities so that we could effectively save money in non-academic areas to divert back to teaching and research programs.” (Executive Leader A)

The university collaborated with a consulting company to look for opportunities to streamline its business processes and in turn provide better services for students. The “One University – Student First” project has launched centralization initiatives, with the creation of company-wide shared services, the consolidation of smaller units into larger entities, and the reinforcement of corporate control. This was aimed at realizing synergy and improving company-wide coordination. For example, the university has centralized its financial control. It also has shifted international student and domestic student recruitment activities to the Marketing and Communication Services Centre. Consistent with the “One University – Student First” philosophy, leaders encouraged their members to engage in more radical process improvements to increase efficiency.

The “Vision of Growth” also promoted further alignment of IT and business strategies, changing technology investment from being technology-driven to services-driven. This led to the adoption of new technology that could offer increased efficiency. For example, the university worked with a digital services provider to move its entire data centre infrastructure to the cloud services. Such radical exploratory move would allow the university to exploit the technology for cost savings in the future.

In addition, the university set up the Strategic Business Development Unit to enhance its capability to identify opportunities, assess potential return on investment, and lead the implementation of plans to achieve the “Vision of Growth”. This included the implementation of a new business development capability through the Marketing and Communication Services Centre to deliver growth in domestic and international student enrolments. The new Strategic Business Development Unit supported exploration

in student recruitment activities by providing a mechanism for the capture of new ideas from staff and a guideline for the implementation based on an iterative process of funding and development. While this mechanism was intended to elicit ideas related to growth initiatives from the staff on the ground across the whole university, it seemed that the mechanism was mostly used by organizational members in particular areas only (like in the marketing areas where the “Vision of Growth” has been translated into student commencement targets and a sales growth plan). Therefore, the university needed to communicate this mechanism and promote the use of this mechanism more actively to the entire parts of the university.

It appeared that the intuiting and interpreting in innovation strategy formulation at the university were still very much the preserve of the leadership group and that staff members on the ground were not so much involved in the process. Part of the intuiting process in radical innovation was also learning from (or adapting) ideas that were generated by external consultants or suppliers. In this respect, the university should promote more bottom-up or exploratory learning to collect initiatives from the lower levels of management.

3.2. Integrating stage

Since the university had a very limited resource due to the anticipated reduced revenues, senior leaders needed to prioritize initiatives with the most profitable benefits and strategic fit with the university’s objectives:

“In relation to the growth vision, there’s a significant principle which I put in place, which is that the growth will be profitable growth, so it’s “show me the money before we put more investment into it.” (Executive Leader B)

To enhance the university’s capability in making strategic allocation decisions in resource-constrained circumstances, it refined its “Enterprise Resource Allocation Model” that helped managers prioritize initiatives based on the cost, potential financial return, and strategic fit with the university’s goals. In addition, the university has implemented an integrated risk management framework that enabled the university to manage the corporate risk as a portfolio rather than manage risks of each of the organizational units individually. This allowed the university to take a more holistic approach in developing risk mitigation strategies. The university strived to manage the challenges of reduced revenues with strategies for cost containment, resource-realignment, and enrolment growth.

Like other Australian public universities, the integration process was a challenging issue. Within the executive level, the integration was enabled through formal meetings that encouraged conversation, knowledge exchange, and collaboration among the members of the senior management team. However, the integration of disparate views at operational levels was often difficult to achieve. While the university members could have converged views on the university’s strategic direction, the members often disagreed on the means to achieve it:

“We can’t operate as if we were Chevron or Woodside, because that wouldn’t necessarily work with that freedom to think and freedom to act and to explore new and innovative ideas. You couldn’t just say to them, “Well, could you think creatively between nine and twelve today and tell me what your output is”. (Human Resource Leader)

Leaders would need to explain the rationale of the inevitable changes and support it with empirical evidences to promote integration of differences. External forces, like regulations and best practices, could help the university achieve a shared understanding of the need for and urgency of changes.

Nevertheless, in some cases, a shared understanding could not be achieved and the senior leadership team tended to manage the integration process tightly after obtaining approvals from the committees. The university has committee system in which new significant changes need to be consulted with the relevant committee. While some “nay-saying” among the university staff could not be avoided, the senior management team would not allow conflicts with some staff to affect management initiatives and decisions at the university. In this way, the change management processes at the university has been widely perceived as quite a top-down approach, with a lack of consultation. The 2014 internal staff survey revealed that only half of the respondents were of the view that they had been consulted in the change processes and had an opportunity to provide feedback. Although the relative top-down approach resulted in the integration of behaviours among the university members, it did not necessarily change the members’ thinking suggesting that the university’s state of learning was more fragile than it appeared. Those members who did not believe in management initiatives tended to wait for the outcomes to prove the legitimacy of the change or left the university.

3.3. Institutionalizing stage

The university seemed to be more flexible in implementing significant changes due to its strong corporate approach:

“I found that this university, relative to other universities, has a very strong capability to achieve enterprise by change. Now I say that because the “One University” structure allows us to take an enterprise-wide view of matters, and also because this university has an extraordinarily high alignment to its vision, its purpose and its values.” (Executive Leader B)

However, the strong corporate approach affected the members’ perspectives on the senior management leadership negatively. Based on the 2014 internal staff survey, only half of respondents had positive views on senior management leadership. It also appeared that new learning was often not well-communicated across the university so that most university members were not aware of the new knowledge. Therefore, leaders should communicate new changes with relevant areas or members and get their feedback to develop interactivities between members and leaders that enable successful implementation of changes. The university should not rely on corporate portals and emails in disseminating new changes since the interviews with the university’s respondents revealed that university

members often did not read these emails or check portals. It may need to feedback the institutionalized learning through more participative activities and other communication initiatives, such as workshops, training, or meetings.

Although the significant outcomes of the changes could not be attributed to the “Vision of Growth” initiative only since there were other on-going and past projects that might also contribute to the recent organizational performance, there have been some process improvements and a very positive outcome of the university’s financial performance in 2015.

4. CONCLUSIONS AND RECOMMENDATIONS

The case findings show that a resource-constrained environment has promoted the adoption of administrative innovation aimed at increasing efficiency. This administrative innovation also stimulated the adoption of technological-based innovation intended for improved efficiency, such as cloud computing. While efficiency is often associated with exploitation (March, 1991), significant changes to existing business processes can be linked to radical or exploratory innovation (Davenport, 1993). Such exploratory move with a focus on efficiency has enabled the university to survive in the resource-constrained period. However, while it is understandable that an organization may need to pursue efficiency and short-term financial gains to survive in a resource-constrained environment, leaders should allow the pursuit of exploratory initiatives with longer-term financial benefits when the tension of resource scarcity is more relaxed. An organization needs to balance exploration and exploitation with exploitation providing resources for pursuing exploration and conversely exploration enabling the development of new capability to be exploited to avoid rigidity (Levinthal & March, 1993; March, 1991).

This study offers further insights for both academic and practitioners about administrative innovation in a resource-constrained circumstance. However, managers should contextualize the lesson learnt from this study to fit their organization-specific contexts. The external and internal forces may vary within different industrial sectors and among organizations within the same industrial sectors. Thus, future research can investigate variations in one industry, cross-industry, or even cross-country to account the impacts of industry-specific context and issues like culture or regulatory environments on administrative innovation.

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Leadership Styles and Perceived Organisational Support as Antecedents of Employee Turnover Intentions: The Role of Job Embeddedness

A. Amankwaa, P. Susomrith and P. Seet

School of Business and Law, Edith Cowan University, 270 Joondalup Drive, Joondalup, Western Australia, 6027

Corresponding Author's Email Address: aamankwa@our.ecu.edu.au

Abstract: *This paper examines how employee perceptions of their supervisors' leadership behaviours and organisational support affect their turnover intention decisions. We develop a model that focuses on employee job embeddedness as a mediating mechanism through which employee perceptions about supervisory leadership behaviours and organisational support affect their intentions to leave their organisations. The model also suggests that the influence of leadership styles and perceived organisational support on employee turnover intentions will be relatively stronger among employees who are embedded into their jobs. Overall, we explore which is more critical to employee turnover intention decision; supervisors' leadership behaviours or the support employees obtain from their organisations?*

Keywords: *Transactional leadership, Transformational leadership, Perceived organisational support, Turnover intentions, Job embeddedness*

JEL Classification: *O15; J63; M54; M10*

1. INTRODUCTION

Employees are and have always been the central foci, around which business success revolves and thus understanding what stimulates them to stay with their organisations is critical for organisational survival and growth. Consistently, Dawley, Houghton, and Buckley (2010) posits that in the 21st century only organisations that can identify ways to proactively reduce employee turnover in their present workforce will be much better prepared to meet the priority of recruiting qualified employees, and the challenge of retaining knowledgeable workers. Not surprisingly, factors that contribute to employee turnover and turnover intentions have shown a key area of research in the organisational literature (Griffeth, Hom, & Gaertner, 2000). In particular, researchers have given attention to leadership behaviours (e.g. Wang & Yen, 2015; Peachey, Burton, & Wells, 2014) and perceived organisational support (POS) (e.g. Maertz, Griffeth, Campbell, & Allen, 2007; Rhoades & Eisenberger, 2002) as key predictors of turnover intentions. These studies have shown that when immediate supervisors demonstrate appropriate

leadership behaviours, employees are less likely to leave their organisations. Like leadership behaviours, these studies have shown POS to be negatively related to employees' intention to leave their jobs.

Despite the plethora of studies on the antecedents of employee's intentions to leave their jobs however, there are still limited studies on how one's embeddedness into his/her job mediates or moderates the relationship between leadership styles, perceived organisational support, and employees' intentions to quit their jobs. Although Mitchell et al. (2004) examined job embeddedness as a moderator in their turnover analysis, their study mainly focused on job satisfaction, and organisational commitment. Mitchell and his colleagues suggested that researchers must examine job embeddedness as a meaningful mechanism through which the linkage between retention and work-related behaviours can be understood (Mitchell et al., 2004). Consistently, Maertz and his colleagues have stressed the need for researchers to look beyond organisational attitudes to other mechanisms through which POS influences turnover (Maertz et al., 2007). The primary purpose of the present paper is to further increase our understanding of leadership styles and POS in the context of turnover intentions by examining the potential mediating and moderating effects of job embeddedness, which has gained attention among researchers for its ability to explain why people stay on their jobs. In this paper, we conceptually explore how transformational and transactional leadership behaviours predict employees' intention to quit their jobs. We also explore how employee perceptions of their organisations' support for them influence their intentions to leave the organisation. Additionally, we explore the mediating and moderating roles of job embeddedness in the respective bivariate relationships hypothesised.

2. LITERATURE REVIEW

2.1. Theoretical Lens

We use job embeddedness theory to explain why employees may have the intentions to leave their organisations. The job embeddedness theory (Mitchell, Holtom, Lee, Sablinski & Erez, 2001) posits that employees' links to other people, groups, and teams; their perception of how they fit with their job and the organisation, as well as what they would have to sacrifice if they left their jobs are key factors that determine their intentions to quit their jobs. In line with the position of the job embeddedness theory, we conceptualise that employees may intend to quit their jobs if they perceive that their supervisors' leadership styles and their organisation's support for them do not meet their expectations. Job embeddedness will serve as the mechanism by which the link between leadership behaviours, perceived organisational support, and turnover intentions will be understood.

2.2. Review of Empirical Studies

We report on the results of empirical studies published between 2000 and 2016 to provide consistent arguments and theoretical basis to develop hypotheses and consequent conceptual model. This review mainly focused on transformational and transactional leadership, perceived organisational support, job embeddedness and turnover intentions. We used our research questions as subheadings to elicit the

review of relevant literature in addressing the objectives of the paper. Out of the review, we developed hypotheses based on which we developed a model that explains how employee perception of leadership styles and perceived organisational support influence their turnover intentions, and the role employees' embeddedness plays in the observed relationships.

Does Transformational Leadership Styles of Supervisors Influence Employee Turnover Intentions?

There are significant empirical studies (e.g. Amankwaa & Anku-Tsede, 2015; Wang & Yen, 2015; Pieterse-Landman, 2012; Van Yperen, Wisse, & Sassenberg, 2011; Wells & Peachey, 2011; Alexandrov et al., 2007) in the existing leadership literature to suggest that when leaders exhibit behaviours that employees perceive to be transformational, employees' intentions of leaving their organisations may reduce. Most studies on transformational leadership and employee turnover intentions have produced consistent statistical findings across organisations, industries and countries. For instance, Pieterse-Landman (2012) conducted a study with 185 managers from manufacturing companies listed on the local Johannesburg Stock Exchange in South Africa. The researcher reported that the intention of the respondent to leave their jobs was negatively related to transformational leadership behaviours of immediate supervisors. Similarly, using data from employees of sampled listed commercial banks on the Ghana Club 100 list, Amankwaa and Anku-Tsede (2015) found that employees' perception of transformational leadership behaviours to be a way of addressing employee turnover intentions in the Ghanaian banking industry. Wells and Peachey (2011) also investigated how transformational and transactional leadership styles and satisfaction with the leaders could reduce voluntary turnover intentions among 200 softball and volleyball assistant coaches from the National Collegiate Athletic Association Division I in the United States of America. Wells and Peachey (2011) reported in their study that transformational leadership style of the main coaches was effective in reducing the turnover intentions of the assistant coaches. Najm (2010) in a study of projects in the Kuwait construction industry also found transformational leadership style as useful behaviour in reducing employees' intentions to leave their jobs. Despite the position of previous studies on how effective transformational leadership style is in reducing turnover intentions of employees, there have been some studies which found this relationship statistically insignificant. Long, Thean, Ismail, & Jusoh (2012) for instance found in their exploratory research on academics in a community college in Malaysia that transformational leadership does not reduce employee turnover intentions. Similarly, Ahmad, Rehman, Shabir, and Razzaq (2012) investigated how leadership styles and organisational commitment predict employees' turnover intentions in the Pakistan insurance sector. The researchers also reported no significant statistical support for transformational leadership style to reduce turnover intentions. In line with the position of previous findings, the researcher asserts that transformational leadership style rather than transactional leadership style is an appropriate leadership style managers of organisations can employ to reduce and/or mitigate employees' intentions of leaving their jobs. Hence, this study proposes that:

Hypothesis 1: Employees' perception that their supervisors have a transformational leadership style will reduce their turnover intentions.

Does Transactional Leadership Behaviours of Supervisors Influence Employee Turnover intentions?

Previous studies on leadership have produced inconclusive findings on the effect of transactional leadership style on employees' intentions to leave their jobs. Even though some authors have found transactional leadership behaviours of immediate supervisors to reduce employee turnover intentions; there are contrasting findings as well. For instance, Martin and Epitropaki (2001) reported that transactional leadership style could be critical in managing employees' intentions to quit their jobs. Najm (2010) also reported a similar finding in his study in Kuwait. Consistently, Hamstra et al. (2011) investigated how a fit between leadership behaviours and follower focus on regulations can reduce turnover intentions among followers. They reported that transactional leadership styles reduced turnover intentions among employees who focused highly on preventing errors and maintaining the status quo but not for followers who challenged the status quo. Long et al. (2012) however reported no significant effect of transactional leadership on turnover intentions of academics in a community college in Malaysia. Even though these researchers indicated that the findings of their study may have been altered by the characteristics of the industry, there have been similar findings among assistant coaches of softball and volleyball in the United States of America (Wells & Peachey, 2011) and employees in the Ghanaian banking industry (Amankwaa & Anku-Tsedde, 2015). Despite the inconsistent findings, we hypothesise that:

Hypothesis 2: Employees' perception that their supervisors have a transactional leadership style will reduce their turnover intentions.

Does Employees' Embeddedness in their Jobs Matter in the Leadership – Turnover Intention nexus?

Extant literature (e.g. Amankwaa & Anku-Tsedde, 2015; Wang & Yen, 2015; Pieterse-Landman, 2012; Hamstra et al., 2011; Peachey et al., 2014; Alexandrov et al., 2007) have shown how leadership styles of supervisors predict employees' intentions to quit or stay in their jobs. These studies however did not consider how employees' embeddedness in their jobs may alter this association. Mitchell et al. (2004) argue that job embeddedness is a retention or anti – withdrawal construct that reflects employees' decision to participate broadly and directly in an organisation's activities. In effect, people who are embedded in their jobs have less intent to leave and do not leave as readily as those who are not embedded (Mitchell et al., 2001). In this paper, we develop a model that expands the established bivariate leadership – turnover intentions relationship, and the traditional understanding that leadership behaviours negatively relate to turnover intentions.

From a theoretical and empirical perspective, we argue that although employees' intention to quit their jobs will depend on the leadership behaviours of their supervisors as established in the literature, employees' embeddedness in their job will play a key role. We introduced job embeddedness as a construct that plays two key roles in our model. First as a moderator, we argue that the extent to which supervisory leadership behaviours affect employees' intention to quit their jobs will depend on how

embedded employees are in their jobs. The leadership – turnover intention relationship will thus be stronger in employees who are embedded in their jobs than employees who are not. Second as mediator, we expect that when employees perceive their supervisors of exhibiting appropriate leadership behaviours, it will make employees embedded into their jobs, and their intentions to quit their jobs will consequently be reduced. Overall, our model highlights that how embedded employees are in their jobs is crucial for retention or turnover decisions, and if leadership behaviours of supervisors do not make employees want to partake broadly and directly, their intentions to leave will increase and eventually leave.

Hypothesis 3a: Job embeddedness will mediate the relationship between transformational leadership and turnover intentions.

3b. Job embeddedness will mediate the relationship between transactional leadership and turnover intentions.

Hypothesis 4a: Job embeddedness will moderate the transformational leadership – turnover intentions relationship.

4b: Job embeddedness will moderate the transactional leadership – turnover intentions relationship.

Does Organisation' Support for Employees Influence their Turnover Intentions?

Perceived organisational support (POS) refers to employees' thoughts that their organisations cares for, and values their contributions, in the short-to-long term, to the success of the organisation (Krishnan & Mary, 2012). In the view of Rhoades, Eisenberger, Armeli, Rexwinkel, and Lynch (2001), the concept of POS encompasses a broad range of employees' perceptions concerning how their organisations value their contributions and care about their socio-emotional needs. Employees' perceptions of how they are supported in their work groups or organisations affect their work-related behaviours. When employees perceive how their organisations appreciate their contributions, value and care about their well-being, it fosters employee performance by stimulating intangible element of exchange between the employee and the employer (Asfar & Badir, 2016; Rhoades & Eisenberger, 2002). Previous studies have shown significant implications of POS on employee performance.

Although POS has been associated with a number of outcome variables in recent literature (Wong, Wong, & Ngo, 2016; Tavares, van Knippenberg, & van Dick, 2016; Asfar & Badir, 2016; Naeem, 2016), particular attention has been paid to the context of employee turnover decisions due to the fact that many supportive organisational practices aim at increasing the connection between employees and their employers in order to reduce voluntary turnover (Dawley, Houghton, & Bucklew, 2010). The centrality of the POS construct in the organisational literature (Rhoades & Eisenberger, 2002) and how it contributes to turnover intentions has been demonstrated in different ways by researchers. The examination of POS in the turnover context is important for firm survival as organisations continue to

count on employees as resource for growth. POS has shown consistent influence on employee turnover intentions across countries and organisations with results from Uganda among employees in the public, private, and NGO sector (Tumwesigye, 2010), United States among manufacturing employees (Dawley et al. (2010), Sri Lanka among employees of lean production (Wickramasinghe & Wickramasinghe, 2011), New Zealand among ethnically blue – collar workers (Haar, Fluiter, & Brougham, 2016) and China among banking employees. Consistent with the empirical discussions and the theoretical basis, we propose that POS will predict turnover intentions.

Hypothesis5: POS will negatively relate to employee turnover intentions

Does Embeddedness in one's job affect the POS – Turnover Intention relationship?

Dawley et al. (2010) sought to develop and expand a model of POS and employee turnover intentions. Their model mediated the POS- turnover intention relationship with the personal sacrifice dimension of Mitchell et al.'s (2001) job embeddedness construct. Using a sample of 346 employees at a medium – sized manufacturing facility in the United States, Dawley et al. (2010) found that POS predicts turnover intentions and personal sacrifice partial mediates the POS – turnover intention nexus. Dawley et al. (2010) called for studies to use data from other organisations to examine the POS – turnover intention relationship. Consistently, Maertz, et al. (2007) call for researchers to identify additional mechanisms by which POS impacts employees' intention to leave their jobs. We address this by exploring the composite on – the - job embeddedness construct not only as a mediating link through which employees' perception of their organisations' support predicts their intentions to quit, but also as a moderating variable. Karatepe (2012) examined job embeddedness as a moderator on the relationship between POS and turnover intentions among full-time frontline hotel employees and their immediate supervisors in Cameroon. The author reported that even though the study found no significant relationship between POS and turnover intentions, the interaction effect of POS and job embeddedness significantly reduced employees' intention to quit. In effect, the extent to which employees' perception of organisational support will affect their turnover intentions depend on these perceptions that make them embedded in their jobs. Thus the POS – turnover intention relationship will be higher among employees who are embedded in their jobs than employees who are not embedded in their jobs. Additionally, we use the model to address the lack of studies on job embeddedness as a mediating mechanism through which employee turnover intentions occur. This approach is not only consistent with Mitchell et al.'s (2004) call for such studies but also an attempt to explore the theoretical reasoning behind how POS leads to turnover intentions. Although we expect job embeddedness to moderate the relationship between POS and turnover intentions, we also expect job embeddedness to be a mediating mechanism that facilitate such a bivariate relationship.

Hypothesis 5a: Job embeddedness will mediate the relationship between POS and turnover intentions.

5b: Job embeddedness will moderate the POS – turnover intentions relationship.

3. CONCEPTUAL FRAMEWORK

Out of the discussions in the review, we developed a model (Figure 1) that reflects the respective relationships hypothesised in this study. Our model is founded on the job embeddedness theory which encapsulates a wide range of perspectives including factors that stimulate employees to stay on their jobs. We reviewed literature on factors at the individual – level (leadership styles) and organisational – level construct (POS) to conceptually expand the explanatory power of the job embeddedness theory in predicting turnover intentions. The model primarily postulates two paths that lead to employees’ intentions to leave their jobs. Path 1 relates to employee perceptions of leadership behaviours and the mechanisms through which such perceptions may lead to employees’ turnover intentions. As hypothesised in our review, path 1 postulates a direct negative relationship between leadership styles and turnover intentions. Aside the direct negative effect between leadership styles and turnover intentions, path 1 also highlights some indirect effects by introducing job embeddedness in a mediated – moderated approach. Consistent with hypotheses 1, 2, 3 (a & b) and 4 (a & b), path 1 shows that employees’ embeddedness in their jobs will either mediate or moderate how their perceptions of supervisor leadership behaviours lead to their intentions to leave their jobs. Path 2 focuses on employee perceptions of how supportive their organisations are towards them, how such perceptions contribute to their intentions to quit their jobs, and the roles their embeddedness in their jobs play in the turnover intention. Consistent with the discussions in our review and consequent hypotheses 5, 5a, and 5b, path 2 shows that embedded employees receiving sufficient support from their organisations will have reduced intentions to quit their jobs. Path 2 also depicts both direct negative relationship and indirect relationship between POS and employee turnover intentions.

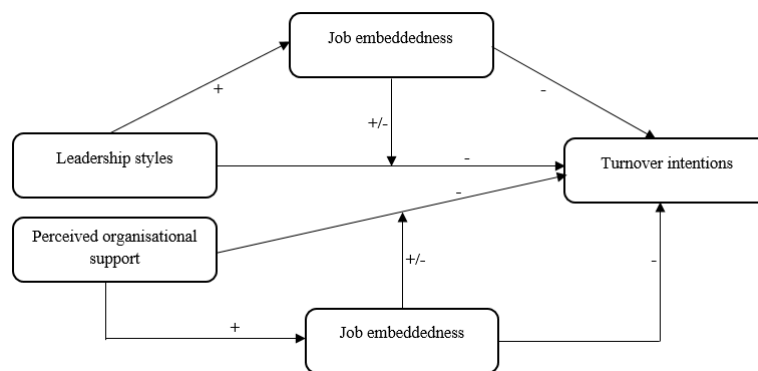


Figure 1. An integrated framework explaining Leadership and POS as antecedents of turnover intentions

The new perspective we take in this review is to theoretically advance on the traditional approach of previous studies which have mainly focused on bivariate relationships between leadership styles, perceived organisational support, and turnover intentions. We conceptualise job embeddedness as a mechanism that facilitates the predictive link between leadership styles, perceived organisational

support, and employee turnover intentions. Our analysis suggests that employee perceptions about their immediate supervisors' leadership behaviours, and their perceptions about how their organisations will support them will influence their turnover intentions. We

4. THEORETICAL AND PRACTICAL IMPLICATIONS

Theoretically, we highlight three implications in our model. First, we build on extant literature to hypothesize how leadership styles lead to turnover intentions. Second, we explore whether employees' perception of organisational support affect their turnover intentions. Future research needs to explore which is more important to employee turnover intentions – perceptions of supervisor leadership behaviours, or their perceptions about how supportive their organisations are? Thirdly, our model advances on previous studies to highlight the role of job embeddedness as a mechanism through which leadership and organisational support influence employee turnover intentions. This position adds to the job embeddedness literature and provides insights for future research.

Practically, understanding employees' perception of leadership behaviours and organisational support and how these perceptions affect their turnover intentions will assist organisations to deliberately reform their managerial practices, and redesign their HRM policies and practices in order to retain talents and improve desirable outcomes. Our review also highlights how important organisations need to pay attention to both leadership behaviours at the workplace and organisational support as they may make employees more embedded into their jobs.

5. LIMITATIONS AND DIRECTION FOR FUTURE RESEARCH

Although our paper focused on recent thinking by chiefly reviewing empirical literature between 2001 and 2016, it has some limitations. We focused on the theoretical reasoning behind the key variables in order to hypothesise the relationships which brought forth the model. Future studies may empirically examine these relationships in different countries, organisations, and samples in order to understand these relationships better. We have shown that human and organisational factors affect employee turnover intentions through job embeddedness. However, it is unclear which of these factors is truly important to employee turnover intention. There is need for future studies to explore which of these factors is crucial for employee turnover decisions.

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Impact of Microfinance on Poverty Alleviation in SAARC Countries

A. Shaikh^a, Z. Zhang^a, J. Yong^a and U. Shah^b

^a*School of Business and Law, Edith Cowan University, 270 Joondalup Drive, Joondalup, Western Australia, 6027*

^b*National University of Science and Technology, Islamabad, Pakistan*

Corresponding Author's Email Address: asifs@our.ecu.edu.au

Abstract: *Poverty remains a concern for many developing economies and microfinance (MF) has emerged as an effective tool for poverty alleviation. Studies on MF and its impact on poverty are mostly based on micro-level household data or entrepreneurial data. This paper examine the impact of microfinance on poverty and its dimensions at a macro level using a cross-country dataset of SAARC member countries from 2000 to 2015, available from the Microfinance Information Exchange (MIX) and World Bank poverty estimates. Fixed and random effect models are used to measure the impact of microfinance on income, education, health and living standards. The results show significant and negative associations between MF loans with the poverty headcount ratio, and poverty gap. We also find MF loans have a positive effect on three dimensions of poverty: education, health, and living standard.*

Keywords: *Microfinance, Poverty, SAARC*

JEL Classification: *G21, P36*

1. INTRODUCTION

Poverty has become a burden for most of the developing countries around the world. More than 1.2 billion people are living on or below the poverty line (US\$ 1.25 a day). Poverty is a human condition wherein people live in a situation like hunger, without shelter, poor or no education, poor health; poor living standard. There are two types of poverty: monetary poverty – the shortage of income from the poverty line as defined by the World Bank (WB) and, non-monetary or multi-dimensional poverty – when the poor face a number of other issues along with shortage of income such as poor health, lack of education or skilled training, and/or lack of household goods. Therefore, poverty has multi-dimensions and the WB has assigned respective indicators to these dimensions. Figure 1 exhibits the dimensions of poverty and their indicators.

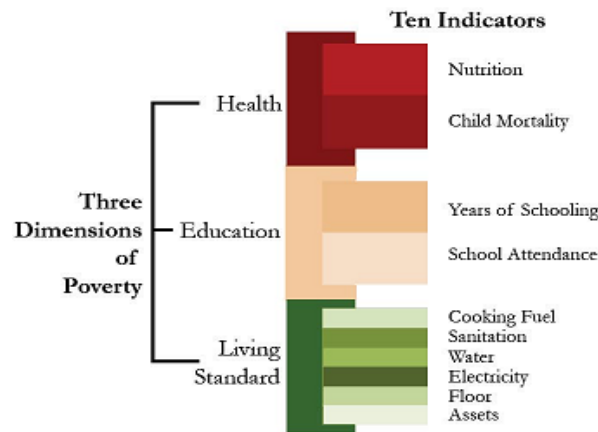


Figure 1- Dimensions of poverty and respective indicators

Source: OPHI, 2016

Over the past decade, microfinance (MF) has emerged as a vital instrument (Reed, 2011) with its core objective to decrease poverty. MF offers “financial services to low-income clients such as low-income entrepreneurs or self-employed individuals in both urban and rural areas” (Ledgerwood, 1999). Microfinance institutions (MFIs) are organizations that provide financial services to the poor. MFIs are now growing as an industry to support the poorest of poor and, decrease their vulnerability, and alleviate poverty in developing countries. MFIs are generally non-profit oriented and along with financial services, they offer development activities such as health consultancy, family planning, adult education, and entrepreneurship. The MIX market reports the gross loan portfolios of MFIs in developing countries have increased more than 1700% and the total number of active borrowers has grown by 400% in ten years (MIX, 2016).

South Asia (SA) is home to the largest population of the poor. The ratio of poor living below the poverty line increased from 549 million to 595 million in 2005. Though SA is the second fastest growing region in the world, its high poverty concentration is exacerbated by frequent conflicts and gender inequality. MFIs have grown in all regions, but they have been most prevalent in SA compared to other developing regions such as Africa and Latin America (Donou-Adonsou and Sylwester, 2016). The concept of MF was introduced in 1970 by Dr. Muhammad Yunis from Bangladesh. He received a Nobel Prize in recognition of his efforts in poverty alleviation. The South Asian Association for Regional Cooperation (SAARC) is the region’s intergovernmental organization and geographical union of South Asian nations formed in 1985 to promote economic development and regional integration. SAARC’s member countries are Afghanistan, Bangladesh, Bhutan, India, Nepal, Maldives, Pakistan and Sri Lanka. The member countries comprise approximately 21% of the world’s population and 3% of global land mass. It retains permanent diplomatic relations with the United Nations (UN) and has developed links with multilateral entities including the European Union (Saarcstat, 2016).

Table 1 shows that in almost all SAARC countries, on average one fourth of total population lives below the poverty line. The poverty rate in Bangladesh is highest at 31.5% despite the country being the pioneer and introducing the model MF model. Afghanistan's population of 32 million has the lowest literacy and life expectancy rates. Amongst its members, Maldives has the smallest population of 0.38 million but has the highest GDP of USD\$14,980 per capita. MFIs work actively in all these member countries to address poverty.

Table.1 Economic Position of SAARC Countries

	Afghanistan	Bangladesh	Bhutan	India	Maldives	Nepal	Pakistan	Sri Lanka
Population (million)	32.0	159.9	0.8	1,276.2	0.4	28.4	190.4	21.7
GDP per capita PPP (USD)	\$1,976	\$3,581	\$8,158	\$6,266	\$14,980	\$2,488	\$4,886	\$11,068
Foreign exchange reserves (USD mil)	\$6,442	\$24,072	na	\$351,557	\$356	\$5,439	\$16,305	\$8,314
Literacy rate (15 years age & above)	28.1%	57.7%	52.8%	74.4%	99%	66%	55%	98.1%
Life expectancy	60	70	68	67	77	68	66	75
Population below the poverty line	15.8%	31.5%	23.7%	21.9%	16%	25.2%	22.6%	8.9%
Primary school enrolment	na	92%	91%	94%	na	98%	72%	94%
Secondary school enrolment	54%	54%	78%	69%	na	67%	34%	99%
Population undernourished (2015)	26.8%	16.4%	na	15.2%	5.2%	7.8%	22%	22%

IMF, 2015

In this paper, we examine the empirical relationship of poverty in terms of depth and incidence on both monetary and non-monetary dimensions, at the macro level in SAARC member countries, for the period of 2000 to 2015, using panel regressions. The rest of the paper is organised as follows: Section 2 provides a literature review, Section 3 describes our data and methodology, Section 3 discusses our main results, and Section 4 offers some concluding observations and recommendations.

2. LITERATURE REVIEW

Advocates of MF claim it has a positive impact on poverty alleviation by smoothing income of individuals. Studies on MF and its impact on poverty have largely been conducted on micro-level household or entrepreneurial data. Hulme and Mosley (1996) studied 13 MFIs in 7 countries including India and Bangladesh. They found the impact of MF on client earnings is larger in financially viable MFIs through higher cost of funds and strict covenants to screen out financially unstable clients. Dichter (1999) found positive impacts of MFI projects on wealth distribution, improvement in households, and smoothing of consumption patterns. Amin, Rai and Topa (2003) studied the impact of MF on 229 poor and vulnerable households in two villages in Bangladesh and found that MFs have a successful reach to the poor but not the vulnerable. Though there are many studies underlining the positive impact of MF on poverty alleviation, MFs have come under scrutiny for inefficiencies in achieving desired outcomes (Chang, 2007; Karnani, 2011; Yunus & Weber, 2011).

Few studies have examined the impact of MF using macro level variables. Imai, Ghaiha, Thapa & Annim (2010) examined the impact of MF on poverty at the macro level by using the poverty head count ratio (PHR) as a dependent variable and gross loan portfolio (GLP) as the explanatory variable in a sample of 99 countries for the year 2007. They found MF has a significantly positive impact on poverty. Franco (2011) examined the impact of MF on poverty in Latin America and the Caribbean regions using average borrowings, percentage of female borrowers and GLP per capita as indicators of MF. He finds a positive impact of MF on the PHR in both regions.

3. DATA & METHODOLOGY

Data was sourced from the Microfinance Information Exchange (MIX) and World Bank (WB) poverty estimates. Our study covers the sample period between 2000 and 2015. We use panel regression models with fixed and random effects to determine if there are statistically significant impacts of MF on poverty in terms of income and its three dimensions: education, health and living standard. We refer to the growth-poverty model of Ravallion (1997).

$$\log P_{it} = \alpha_i + \beta \log \mu_{it} + \gamma_{it} + \epsilon_{it}$$

This model was extended by Ficawoyi and Kevin (2016) to estimate impact of financial development in banks and MFIs on Poverty in developing countries as shown below:

$$\log Pov_{it} = \alpha_i + \beta_1 \log \mu_{it} + \beta_2 \log g_{it} + \beta_3 \log x_{it} + \epsilon_{it}$$

where Pov_{it} represents the measurement of poverty in Country i at the time t . α is the fixed effect and shows time variation between countries, while β_1 is “growth elasticity of Poverty” in terms of mean of per capita income denoted by μ_{it} . β_2 represents the elasticity of poverty in terms of income inequality, given by the Gini Coefficient g_{it} . β_3 is the elasticity of poverty with respect to independent variable x , whereas ϵ_{it} is represents error term.

We adapt the model of Ficawoyi and Kevin (2016) to measure the impact of MF on poverty alleviation and improve education, health and living standard through the following models expressing four measures of poverty.

$$\text{Model 1: } POVG_{it} = \alpha_i + \beta_1 NAB_{it} + \beta_2 GDP_{it} + \beta_3 GLP_{it} + \beta_4 Assets_{it} + \beta_5 PFB_{it} + \beta_6 MEF_{it} + \epsilon_{it}$$

$$\text{Model 2: } POVH_{it} = \alpha_i + \beta_1 NAB_{it} + \beta_2 GDP_{it} + \beta_3 GLP_{it} + \beta_4 Assets_{it} + \beta_5 PFB_{it} + \beta_6 MEF_{it} + \epsilon_{it}$$

$$\text{Model 3: } EDU_{it} = \alpha_i + \beta_1 NAB_{it} + \beta_2 GDP_{it} + \beta_3 GLP_{it} + \beta_4 Assets_{it} + \beta_5 PFB_{it} + \beta_6 MEF_{it} + \beta_7 BRR_{it} + \epsilon_{it}$$

$$\text{Model 4: } MDP_{it} = \alpha_i + \beta_1 NAB_{it} + \beta_2 GDP_{it} + \beta_3 GLP_{it} + \beta_4 Assets_{it} + \beta_5 PFB_{it} + \beta_6 MEF_{it} + \beta_7 BRR_{it} + \epsilon_{it}$$

$POVG_{it}$ and $POVH_{it}$ denote the poverty gap and poverty headcount ratio, while EDU_{it} and MDP_{it} denote education and multidimensional poverty (health and living standard) for country i in period t respectively. In the set of explanatory variables, NAB_{it} is the number of active borrowers in MFIs, GDP_{it} denotes gross

domestic product, GLP_{it} represents gross loan portfolio of MF loans made against assets owned by the poor, PFB_{it} is the the percentage of flame borrowers, MEF_{it} is the number of micro-enterprises financed and BRR_{it} denotes borrowers' retention rate. Our results are discussed in the next section.

4. RESULTS AND DISCUSSION

Table 2 presents our estimation results on the effect of MF on poverty head count ratio, poverty gap, education, health and living standard. We find borrower retention rate and number of micro-enterprises can have a significant impact on reducing incidences, severity and dimensions of poverty. The elasticity coefficients also show that a higher gross loan portfolio per capital for MFIs has a more than proportional positive impact on all measures of poverty in SAARC member countries in our four models. In two of our models, we control for living standard and health status. Our results show that a higher number of active MFI borrowers and GDP per capita can significantly reduce the poverty head count ratio. We also find higher utilization of MF by women (measured as the percentage of female borrowers), empowers more women to make decisions and support finances in their households. However, we do not find the number of jobs created to have a significant impact on the poverty headcount ratio.

We also found that the variables in our analysis remain negative and statistically significant after including control variables. In Model 2, poverty gap has an inverse relationship to health and living standard. There is a large positive impact from the percentage of female borrowers to the level of education, in Model 3 along with the number of active borrowers and loan gross portfolio. The very poor may not be able to fully access the benefits of MF to maintain their businesses, if they have little assets. The explanatory power of our models range between 0.39 and 0.47, indicating the variation in poverty measures explained by policy variables.

The estimated coefficients provide consistent findings that MF has a positive and significant impact on reducing poverty. The magnitude of each coefficient can be interpreted as elasticity coefficients and display the more than proportionate impact of a 1% change in each explanatory variable toward each measure of poverty. Our findings also provide support for the theoretical linkages of MF and education. The positive relationships imply MF has beneficial effects on the broader society in SAARC member countries. However, there are puzzling findings from Model 4, where we find negative associations between MF variables and measures of multidimensional poverty (health and living standard). This may be caused by external political and environmental factors such as persistent conflict in some of the SAARC member countries, drought, famine and diseases, natural disasters, and continued gender inequality, in the midst of growing population numbers during our sample period of study. The findings of Model 4 provide us with some directions to include variables addressing these issues in a further study.

Table.2 Regression analysis of Variables in SAARC Countries

Dependent Variable:	Poverty Head Count-ratio	Poverty Gap	Education	MDP
	Model 1	Model 2	Model 3	Model 4
Log of Borrower Retention Rate	-3.99** (1.992)	-3.31** (1.451)	4.87** (2.412)	-3.01** (1.894)
Log of Number of Microenterprises Financed	-4.12* (2.170)	-1.921** (0.951)	4.11** (2.025)	-6.12** (3.410)
Log of Gross Loan Portfolio Per capita	-2.01** (1.002)	-1.85** (0.910)	1.94** (0.951)	-3.67** (2.412)
Log of GDP Per capita	-11.01* (5.322)	-6.91** (3.421)	6.38** (5.110)	-2.11** (2.025)
Log of Assets	-2.65** (1.305)	-2.24** (1.021)	3.01** (1.410)	-0.94** (0.951)
Log of Number of Active Borrowers/Total Population in Million(15-64)	-2.65** (1.351)	-2.18** (1.010)	8.91** (1.894)	-8.12** (5.110)
Log of Percent of Female Borrowers	-6.05* (3.036)	-4.71** (2.175)	7.002** (3.410)	-2.01** (1.410)
Log of Loan Loss Rate	3.73** (1.791)	3.24** (1.49)	-3.19** (1.412)	-4.19*** (0.008)
Log of Number of Job Created	-0.100 (0.111)	-0.001 (0.125)	0.001 (0.012)	1.19** (1.412)
Log of Percent of Financed Microenterprises at Start-up	-1.14** (0.302)	-0.73** (0.345)	1.01** (0.489)	-0.001 (0.012)
Log of Health Status	-1.83** (0.891)	-1.00** (0.471)		
Log of Living Standard	-2.81** (1.390)	-1.71** (0.832)		
Constant	62.99*** (0.010)	61.01*** (0.013)	88.32*** (0.003)	77.87** (0.956)
No. of Observation	85	85	86	86
Adj. R ²	0.473	0.421	0.389	0.421

Notes: *, ** and *** represents significance at the 10%, 5% and 1% levels respectively. Values in parenthesis are standard errors of estimated coefficients.

5. CONCLUSION & RECOMMENDATION

The extant studies on MF's impact on poverty have previously focussed on micro-level data and raised questions on whether MFIs are effective in alleviating poverty. In our paper, we focus on the hypothesis that MF reduces poverty and improves income, health, education and living standard for the poor. We examined macro-level data of SAARC member countries from 2000 to 2015 and find MF did reduce the incidence and severity of poverty. Furthermore we also find MF improves other dimensions of poverty namely education, but the findings for health and living standard indicate there may be broader external factors that need to be addressed within our model. Our findings lead us to the following recommendations:

- MF activities should be encouraged to reduce incidences and severity of poverty and have a prolonged positive impact on the level of education, health and living standards of societies in SAARC member countries.
- MFIs need to assist clients to address competitive pressures through venture diversification, in order for microenterprises to be sustainable and viable.

- MF policies offered to the poor should integrate not only the provision of credit, but include other services such as education or self-development initiatives so clients are able to sustain livelihoods beyond initial loan purposes.

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Bank Liquidity, Bank Failure Risk and Bank Size

C. Zheng, A. Cheung and T. Cronje

*Department of Finance and Banking, School of Economics and Finance, Curtin University, Kent St,
Bentley, Western Australia, 6102*

Corresponding Author's Email Address: chen.zheng3@postgrad.curtin.edu.au

Abstract: *The literature of the effect of bank liquidity on bank failure risk is large. The moral hazard view predicts that bank liquidity and failure risk are negatively correlated, while the precautionary motive view argues that they should be positively related. The empirical evidences are mixed and inconclusive. We argue and develop hypotheses that the relationship depends on bank size. Using the comprehensive measure of bank liquidity developed by Berger and Bouwman (2009), this paper finds evidence consistent with this view. In particular, for large banks, the relationship between bank liquidity and failure risk is negative; for small banks, the relationship between bank liquidity and failure risk is positive. The results are robust.*

Keywords: *Bank liquidity, Failure risk, Bank size, Precautionary motive, Moral hazard effect*

JEL Classification: G21, G28, G29

1. INTRODUCTION

A well-functioning interbank market provides effective liquidity coinsurance by channelling liquidity between banks with liquidity surpluses and shortages (Allen, Carletti & Gale, 2009), which in turn minimizes banks' holding of costly liquid assets as these assets earn very low returns. In fact, interbank market funding has, until the start of the global financial crises, been the primary source of liquidity for banks and one of the most liquid sources in the financial sector (Heider, Hoerova & Holthausen, 2009). However, there is clear evidence that the interbank lending market became disrupted since 2008. In this regard, the interbank loans decreased from around USD 500 billion in early 2008 to about USD 100 billion in late 2011 (remaining about the same level to 2014). The spread between the London Interbank Offer Rate (LIBOR) and the Overnight Index Swap (OIS) rate, a primary indicator of stress in the banking sector (Sengupta & Tam, 2008; Thornton, 2009; Acharya & Skeie, 2011), increased to more than 350 basis points (bps) during October 2008, compared to its level of less than 10 bps in early 2007.

As a result of the interbank market disruption, banks started hoarding liquidity for two reasons: self-insurance and indiscriminating distrust of counterparty bank repayment ability (Castiglionesi, Feriozzi, Loranth & Pelizzon, 2014). Banks with liquidity surpluses withheld their interbank lending due to uncertainty about counterparty solvency, whilst banks with liquidity deficits increased their liquidity holdings to cover themselves against liquidity shocks, such as credit line drawdowns and unexpected demand deposit withdrawals. For expositional ease, these liquidity holding actions of banks can be

referred to as “precautionary motive”. Simultaneously, bank failures increased dramatically¹. In response to the interbank market disruption and the massive number of bank failures, the U.S. government used a variety of rescue tools, such as the Fed’s Term Auction Facility and the Treasury’s Troubled Asset Relief Program (TARP), to restore the U.S. banking industry. However, such government support for banks may have created incentives for moral hazard (Mailath & Mester, 1994; Acharya & Yorulmazer, 2007; Gale & Yorulmazer, 2013), triggering banks to take on excessive risk, engage in risk shifting, and fund/finance their activities with lower levels of liquidity than they would do otherwise. These effects on the liquidity holding actions of banks can be referred to as “moral hazard effect”.

In the context of non-financial firms, Acharya, Davydenko and Strebulaev (2012) find that, contrary to the common intuition, endogenously determined liquidity is driven by the precautionary motive for saving cash, and the long-term default probability is positively correlated with liquidity. In the context of financial institutions, Garleanu and Pedersen (2007) point out that liquidity hoarding of individual banks can have negative externality effects, leading to market illiquidity at the aggregate level. If the negative externality effects outweigh the beneficial liquidity buffer effect, then a positive relationship between liquidity buffer and bank failure may be observed. Therefore, precautionary motive predicts that bank liquidity is positively associated with failure risk.

On the other hand, liquidity holdings, based on moral hazard effect, are negatively associated with failure risk. Government support of banking firms in distress may incentivize banks to engage in risk-shifting and risk-taking behaviour associated with moral hazard effect. Duchin and Sosyura (2014) find that bailed-out banks initiate riskier loans and shift assets toward riskier securities after receiving government support. As a result, excessive risk-taking makes banks susceptible to distress and failure. Meanwhile, government intervention may discourage banks from holding liquidity (Gale & Yorulmazer, 2013; Acharya, Shin & Yorulmazer, 2011), thus banks may keep too low a level of liquidity to meet deposit withdrawal and loan commitments drawdowns. Therefore, moral hazard effect suggests that a negative relationship may exist between bank liquidity and failure risk.

It is evident from the aforementioned research about the precautionary motive and the moral hazard effect that they may provide opposing findings about the relationship between bank liquidity and failure risk. Moreover, bank liquidity varies greatly by bank size (Berger & Bouwman, 2009). Therefore, the objective of this research is to empirically examine the relationship between bank liquidity and failure risk predicted by two opposing effects (precautionary motive and moral hazard effect) with specific consideration of the different sizes of banks.

¹ FDIC reported that it closed 140, 157 and 92 financial institutions in 2009, 2010 and 2011, respectively. For example, Lehman Brothers collapsed in mid-September 2008; Wachovia agreed to merge with Well Fargo in October 2008; Washington Mutual became the largest U.S. bank ever to fail, with most of its assets and liabilities purchased from the FDIC by J.P. Morgan Chase in September 2008; and Bank of America completed the acquisition of Merrill Lynch in January 2009.

It is expected that the “precautionary motive” is likely to be relatively strong for small banks and weak for large banks. Allen, Peristiani and Saunders (1989) argue that small banks face greater information asymmetry which makes it costly for them to access the interbank market, and thereby they have an incentive to keep some cash at hand. Also in corporate finance, small firms face more borrowing constraints and higher costs of external financing than large firms (Whited, 1992; Fazzari & Petersen, 1993; Kim, Mauer & Sherman, 1998). Opler, Pinkowitz, Stulz and Williamson (1999) find that small firms have restricted access to external capital markets. Along the same line, small banks are expected to have strong incentives of hoarding liquidity to avoid financing constraints and costly default. In contrast, large banks can more easily access funding from national or international capital markets and they are less likely to hoard cash.

It is expected that the “moral hazard effect” applies more strongly to large banks than to small banks since sufficiently large banks are deemed to be “too big to fail” and, in the event of distress, tend to receive government support. Moral hazard from the “too big to fail” problem is pervasive in the financial system because of the interrelationship between the potential damage from a large bank’s failure and government intervention possibility, which in turn erodes market discipline and creates incentives for increased risk-taking. Bayazitova and Shivdasani (2012) find that larger banks are more likely to receive capital injections than smaller banks because they pose greater systemic risk. Black and Hazelwood (2013) find that government support increases the loan origination risk of large bailed-out banks but it decreases such risk of small bailed-out banks.

Based on the preceding discussion, the hypotheses for the relationship between bank liquidity and failure risk are:

Hypothesis 1: For small banks, the relationship between bank liquidity and failure risk is positive.

Hypothesis 2: For large banks, the relationship between bank liquidity and failure risk is negative.

Hypothesis 3: Since medium banks fall somewhere in the middle, we expect that moral hazard effect and precautionary motive may simply offset each other. Hence, for medium banks, the relationship between bank liquidity and failure risk is insignificant.

2. DATA AND METHODOLOGY

2.1. Sample and Data

The sample of banks in this paper consists of all Federal Deposit Insurance Corporation (FDIC) insured institutions over the period 2003-2014. The data is obtained from several sources. Quarterly financial data is sourced from Statistics on Depository Institutions (SDI) reports from the FDIC bank data and statistics. The sample of failed banks is obtained from the failed bank list of the FDIC. Senior Loan Officer Opinion Survey on Bank Lending Practices (SLOOS) is sourced from Federal Reserve System,

and federal funds rate data is taken from the Federal Reserve Bank of St. Louis. This study also makes use of the publicly available dataset of quarterly bank liquidity creation for U.S. commercial banks over the observation period that was compiled by Allen N. Berger and Christa Bouwman². All the aforementioned data sources are merged together to construct the dataset for this study.

2.2. Econometric Model

The following logit model is employed to determine the effect of bank liquidity on failure risk:

$$Prob(\text{Bank Failure Indicator} = 1|X, Z) = \Lambda(\alpha + \beta X + \sum_{j=1}^J \gamma_j Z_j), \quad (1)$$

where $\Lambda(Y) = \frac{e^Y}{1+e^Y} = \frac{\exp(Y)}{1+\exp(Y)}$, $Y = \alpha + \beta X + \sum_{j=1}^J \gamma_j Z_j$; Λ denotes the cumulative logistic distribution function; X is the main test variable, namely the bank liquidity creation (*catfat_gta*); failure risk is the dependent variable. In each year, if a bank fails within the next 12 months, it is assigned the binary value of one. Otherwise, it is assigned the binary value of zero; and Z represents the control variables. Two sets of control variables are used in this study. The first set controls for bank-specific characteristics, and consists of common equity to total risk-weighted assets (*ca*); non-performing assets to total assets (*aq*); cost-to-income ratio (*mc*); ratio of net income to total assets (*earn*); loan-to-deposit ratio (*ldrt*); ratio of unused loan commitments to total loans (*ucrt*); ratio of non-interest income to total income (*noniirt*); natural logarithm of total assets (*banksize*); and bank holding company (BHC) status (*bhc*). The other set includes macro-economic variables, which are the fed funds rate (*fedfunds*) and SLOOS (*sloos*). Equation (1) is independently applied to small banks (GTA³ up to \$1 billion), medium banks (GTA \$1 billion-\$3 billion) and large banks (GTA exceeding \$3 billion) to determine whether bank size is relevant. All of the regressions include the full set of control variables and have time fixed effects.

While the theories predict a causal relationship from bank liquidity to failure risk, in practice both may be jointly determined. This makes it challenging to establish causation. For example, banks with a higher likelihood of failure to meet credit line drawdowns and unexpected demand deposit withdrawals, caused by the lack of interbank lending coinsurance, tend to hoard large piles of liquidity for self-insurance purposes (Castiglionesi, Feriozzi, Loranth & Pelizzon, 2014). Thus, a two-stage residual inclusion (2SRI) estimation method to control for endogeneity bias in the nonlinear regression model, i.e. logit model is applied, to determine the causal effects between liquidity and failure risk for the different bank sizes.

² It was downloaded from Christa Bouwman's personal website (<https://sites.google.com/a/tamu.edu/bouwman/data>).

³ GTA (gross total assets) equals total assets plus the allowance for loan and lease losses and the allocated transfer risk reserve.

Under the 2SRI approach, the first stage model yields the predicted residual value for the endogenous variable (*catfat_gta*) as a function of an instrument and other exogenous variables. In the second stage regression, the residual term of the first stage regression is added as an additional regressor along with the endogenous variable. In this study, three-year lagged average values of bank liquidity creation (*catfat_gta_average*) are used as the instrumental variable, as lagged values are more likely to reflect bank earlier decisions and may not directly affect the contemporaneous failure risk. The use of three-year averages, rather than a single lagged year, may reduce the effects of short-term fluctuations and problems with the use of accounting data (Berger & Bouwman, 2009). The two-stage residual inclusion (2SRI) model entails the following equations:

First stage regression,

$$E(Y|X, Z) = \alpha + \beta_1 X_1 + \beta_2 Z_2 + \beta_3 Z_3 + \dots + \beta_p Z_p + \varepsilon, \quad (2)$$

where Y is the endogenous variable, *catfat_gta*; X is the instrumental variable, *catfat_gta_average* and Z_2, \dots, Z_p are control variables, as defined in the baseline specification.

Second stage regression,

$$Prob(\text{Bank Failure Indicator} = 1|X, Z, R) = \Lambda(\alpha + \beta X + \sum_{j=1}^J \gamma_j Z_j + \Phi R), \quad (3)$$

where $\Lambda(Y) = \frac{e^Y}{1+e^Y} = \frac{\exp(Y)}{1+\exp(Y)}$, $Y = \alpha + \beta X + \sum_{j=1}^J \gamma_j Z_j + \Phi R$; Λ denotes the cumulative logistic distribution function; X is the main test variable (endogenous variable), *catfat_gta*; Z 's are control variables, as defined in the baseline specification, and R is the residual from the first stage regression, which is then included as an additional regressor in the second-stage estimation.

The output from the 2SRI model above includes the naive standard error, which assumes that there is no error in the generation of the “residual” in the first-stage regression model. The fact that “residual” is a “generated” regressor (i.e., with estimation errors) affects how the standard error of the regression coefficient in the second-stage regression is computed. Thus, bootstrapping is used to deal with this issue (1,000 bootstrap replications are performed).

3. EMPIRICAL RESULTS

Columns (1), (2) and (3) of Table 1 contain the empirical results using the logit regression. The results in Column (1) of Table 1 show that the relationship between small bank liquidity and failure risk is positive and significant. The economic significance of the result is reflected by the magnitude of the coefficient of 2.764 on *catfat_gta*. It suggests that if the bank liquidity is 1 percent higher, then the bank's failure risk is predicted to be around 2.7 percent higher at the 1% significance level. Column (2) of Table

1 reports the regression results for medium banks. For these banks, the relationship between bank liquidity and failure risk is positive but not significant. The results in Column (3) of Table 1 show that the relationship between large bank liquidity and failure risk is negative and significant at the 1% level. The contrast is sharp compared to the positive relationship found for small banks. The magnitude of the coefficient of -2.879 on *catfat_gta* suggests that if the bank liquidity is 1 percent higher, then the bank's failure risk is predicted to be around 2.8 percent lower. In fact, the *catfat_gta* coefficients for the small and large banks are of similar magnitude but in opposite direction. Thus, the data suggests that, consistent with the economic intuition, the “precautionary motive” hypothesis strongly dominates for small banks, the “moral hazard effect” hypothesis strongly dominates for large banks and the two effects largely offset each other for medium banks.

Table 1 The effect of bank liquidity on failure risk (Logit regression model)

VARIABLES	Bank failure risk		
	(1) Small banks	(2) Medium banks	(3) Large banks
<i>catfat_gta</i>	2.764*** (0.35)	0.257 (0.94)	-2.879*** (1.05)
<i>ca</i>	-1.180** (0.59)	-0.015* (0.01)	-0.035* (0.02)
<i>aq</i>	0.021*** (0.00)	0.030*** (0.00)	0.031*** (0.00)
<i>mc</i>	0.023** (0.01)	0.128 (0.12)	0.271 (0.32)
<i>earn</i>	-0.045*** (0.00)	-0.041*** (0.01)	-0.023*** (0.01)
<i>ltdrt</i>	-1.706*** (0.29)	-0.083 (0.33)	-0.043 (0.11)
<i>ucrt</i>	-4.765*** (0.62)	0.459 (0.69)	0.309 (0.43)
<i>noniirt</i>	-0.000 (0.00)	-0.001 (0.00)	-0.035** (0.02)
<i>bhc</i>	-0.008 (0.09)	7.517*** (1.11)	- ⁴
<i>banksize</i>	0.308*** (0.04)	-0.451 (0.33)	-0.716*** (0.24)
<i>fedfunds</i>	-0.638 (0.50)	0.000 (0.00)	-10.806 (15.19)
<i>sloos</i>	-0.050*** (0.01)	0.028 (0.02)	-0.018 (0.04)
Constant	-11.423*** (0.69)	-9.943** (4.88)	4.807 (4.34)
Time dummies for report date	Yes	Yes	Yes
Observations	286,710	10,709	6,875
Pseudo R-squared	0.535	0.563	0.563

Notes: The ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively.

Column (1), (2) and (3) of Table 2 report the regression results using the two-stage residual inclusion (2SRI) approach across different sizes of banks. As can be seen from the table, the results are in line with the earlier main estimation findings. Consistent with the “precautionary motive” and “moral hazard effect” hypotheses, the results show that for small banks, bank liquidity and failure risk are positively correlated; for large banks, bank liquidity and failure risk are negatively correlated; and for medium

⁴ The coefficient on *bhc* is zero and standard error is omitted because of perfect prediction. In other words, “*bhc*” predicts failure perfectly in this case.

banks, the relationship is insignificantly positive. The coefficient on *catfat_gta* is 2.990 and -3.593 for small and large banks, respectively. The magnitude is also economically important, implying that for small banks, an increase in bank liquidity of 1% translates into a 3% increase in failure risk; in sharp contrast, for large banks, a 1% increase in bank liquidity predicts a 3.6% decrease in failure risk.

Table 2 The effect of bank liquidity on failure risk (Two-stage residual inclusion (2SRI) model)

VARIABLES	Bank failure risk		
	(1)	(2)	(3)
	Small banks	Medium banks	Large banks
<i>catfat_gta</i>	2.990*** (0.38)	0.876 (1.21)	-3.593** (1.49)
<i>resid</i>	-1.279** (0.54)	-1.814* (1.08)	2.661 (2.52)
<i>ca</i>	-1.162** (0.58)	-0.016 (0.01)	-0.037* (0.02)
<i>aq</i>	0.021*** (0.00)	0.030*** (0.00)	0.031*** (0.00)
<i>mc</i>	0.042** (0.02)	0.168 (0.33)	0.219 (0.27)
<i>earn</i>	-0.045*** (0.00)	-0.041*** (0.01)	-0.022*** (0.01)
<i>ltdrt</i>	-1.686*** (0.28)	-0.096 (0.52)	-0.001 (0.10)
<i>ucrt</i>	-4.831*** (0.73)	0.335 (0.76)	0.528 (0.52)
<i>noniirt</i>	-0.000 (0.00)	-0.001 (0.01)	-0.039*** (0.01)
<i>bhc</i>	-0.013 (0.09)	7.506*** (1.76)	-. ⁵
<i>banksize</i>	0.286*** (0.05)	-0.492 (0.39)	-0.768*** (0.27)
<i>fedfunds</i>	-0.667* (0.40)	-0.000 (0.01)	-0.361 (0.36)
<i>sloos</i>	-0.048*** (0.01)	0.028 (0.03)	-0.044*** (0.01)
Constant	-11.265*** (0.76)	-9.580* (5.76)	6.030 (4.36)
Time dummies for report date	Yes	Yes	Yes
Observations	286,707	10,708	7,091
Pseudo R-squared	0.536	0.565	0.515

Notes: The ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively.

4. CONCLUSIONS AND RECOMMENDATIONS

Previous empirical research findings regarding the effect of bank liquidity on failure risk are mixed and sometimes, contradicting. Some papers find that liquidity is negatively and significantly related to bank failure (Ng & Roychowdhury, 2014). In contrast, several studies find that liquidity is positively and significantly related to bank failure (Almanidis & Sickles, 2012; Cleary & Hebb, 2016). Four other studies find liquidity to be insignificant (Cole & White, 2012; Berger & Bouwman, 2013; De Jonghe, 2010; DeYoung & Torna, 2013). The findings of this research show that the relationship between liquidity and failure risk depends crucially on the bank size. This study provides empirical support for both the moral hazard effect theory that predicts that higher liquidity may lead to lower probability of default and the precautionary motive theory according to which higher liquidity may result in higher

⁵ The coefficient on *bhc* is zero and standard error is omitted because of perfect prediction. In other words, “*bhc*” predicts failure perfectly in this case.

probability of default. This paper re-examines the relationship between bank liquidity and failure risk with a new liquidity measure developed by Berger and Bouwman (2009) (hereafter called BB measure). BB measure is a comprehensive single measure of bank liquidity since it considers all the bank's on-balance sheet and off-balance sheet activities. Traditional bank liquidity proxies mostly focus on the CAMEL-based asset-side liquidity (i.e. the relationship of short-term to long-term assets, such as the cash-to-assets ratio) or the general funding liquidity ratio (such as the ratio of short-term to long-term deposits). BB measure provides evidence that for large banks, liquidity is significantly and negatively related to failure risk; for small banks, liquidity is significantly and positively related to failure risk.

The result that the relationship between bank liquidity and failure risk differs based on bank sizes has important implications for policymakers as it provides novel insights for the design of prudential regulation and supervision of banks. Since the recent financial crisis of 2007-2009, liquidity risk management has become one of the top priorities for regulators, and new liquidity requirements, such as the Liquidity Coverage Ratio (LCR) and the Net Stable Funding Ratio (NSFR) have been proposed under Basel III in December 2010. It is well known that regulators impose and adjust liquidity requirements of banks for safety and soundness reasons. This study sheds new light on how the design features of bank regulation mechanisms can benefit both small and large banks. The results clearly show that one size does not fit all when it comes to liquidity requirements. In particular, the results suggest that regulators may have to consider banks sizes as part of base criteria for liquidity requirements to enhance regulation efficiency. In this regard, the findings of the study show that higher liquidity makes large banks safer, whilst small banks with higher liquidity buffers are exposed to higher failure risk.

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An Exploratory Investigation into the Strengths-Based Approach in Small Businesses

C. Wijekuruppu, A. Coetzer and P. Susomrith

School of Business and Law, Edith Cowan University, 270 Joondalup Drive, Joondalup, Western Australia, 6027

Corresponding Author's Email Address: cwijekur@our.ecu.edu.au

Abstract: *The strengths-based approach to management is considered to be a paradigm shift from the conventional practice of management. The underlying principles of strengths-based approach emphasise the importance of leveraging people's strengths, as opposed to fixing weaknesses in conventional practice. In this research paper we aimed to explore whether the strengths-based approach was being practised in small businesses and to understand the suitability of the strengths-based approach in the small business context. An exploratory qualitative methodology was used for this research that involved data collection through face-to-face semi-structured interviews with 30 participants from 17 small businesses in Western Australia.*

Keywords: *Strengths-perspective, Strengths-based approach, Small business, Perceived enablers, Perceived barriers*

JEL: *M12, M19, M51*

1. INTRODUCTION

It is globally accepted that small businesses play an important role in the economy of a country (Gill & Biger, 2012; Li, Armstrong & Clarke, 2011; Walker, Redmond, Webster & Clus, 2007). Nevertheless, the statistics indicate that in Australia small businesses have higher failure rates than medium and large businesses (Australian Bureau of Statistics, 2012; Nicholls & Orsmond, 2015). Researchers worldwide have identified factors related to small business management as those most likely to have contributed to small business failure (Beaver, 2003; Carland, Carland, & Carland, 2001; Cressy, 2006; Franco & Haase, 2010; Knotts, Jones & Udell, 2003; Ng & Kee, 2012; Wu & Young, 2003). Similarly, managerial issues including lack of managerial skills and experience in management of owner/managers has recently been cited as a major factor behind the high failure rates of Australian small businesses (Nicholls & Orsmond, 2015).

In small businesses, the owner/managers conduct or direct a wide variety of tasks, including human resource activities (Howard & Jawahar, 2002), whereas large businesses use formal processes and systems to implement their operations and activities. Consequently, owner/managers of small businesses have more direct influence on managerial activities compared to managers of large businesses (Lepoutre

& Heene, 2006; Mankelow, 2008). Moreover, the owner/managers in small businesses tend to operationalise the series of management activities in an ad hoc manner, without access to sophisticated management tools or formal information (Barrett & Mayson, 2008, p.111; Floren, 2006). Apart from the above, many other specific characteristics of small businesses, such as centralised decision making power of owner/managers, simple/flat and less complex organisational structure, close working relationships between managers and employees and limited or less clear division of responsibilities between employees make small businesses different from large businesses, and also unique (Anderson & Ullah, 2014; Supyuenyong, Islam & Kulkarni, 2009). In determining the way that the small businesses need to be managed and developed, one has to take these characteristics into account (Wong & Aspinwall, 2004). Said another way, in order to ensure the successful survival, development and expansion of small businesses, the owner/managers need to employ appropriate management practices that suit to specific characteristics and the distinct nature of the small business and its environment.

The extant literature on characteristics of small businesses (e.g. Coetzer, Redmond & Bastian, 2014; Supyuenyong et al., 2009; Wong & Aspinwall, 2004; Yusof & Aspinwall, 2000) suggests that the small business setting is well-suited for employing the strengths-based approach to managing and developing employees. However, to the best of our knowledge, there are no previous studies on the use of the strengths-based approach in small businesses or on its suitability to the small business context. This study was conducted to fill that research gap. Our study had two broad aims: (i) to understand whether the managers use a strengths-based approach for managing and developing employees in their small businesses, and if so, to explore how they implement the approach and (ii) to contribute to theoretical understanding of the suitability of strengths-based approach for small businesses by identifying the small business characteristics that may facilitate or hinder the adoption of strengths-based approach. The findings of this study can cast new light on small business management practices and lay the foundation for future studies.

1.1. The strengths-based approach

The strengths-based approach empowers people by facilitating the development and utilisation of their talents as opposed to emphasising their perceived weaknesses (Clifton & Harter, 2003; Lask, 2010). When talents are supplemented and refined with knowledge and skills, it leads to the development of strengths within people (Clifton, Anderson & Schreiner, 2002). A strength is defined as “a person’s ability to provide a persistent, near-perfect performance in a given activity” (Clifton et al., 2002, p. 4). Strengths can be better described as natural capacities of people to behave, think, or feel in a way that allows optimal functioning and performance in the pursuit of valued outcomes (Linley & Harrington, 2006b). Said in general terms, a strength is something that a person is innately good at, passionate to do, and motivated by doing (Bibb, 2016).

The strengths-based approach entails a paradigm shift: a focus change from a deficit-based approach to an approach with a strengths perspective. The roots of the ‘strengths perspective’ in the domain of social

work has been traced back to social work pioneers, such as Perlman (1957) and Hollis (1966), who urged social workers to focus on clients' strengths (Engelbrecht, 2010). Apparently, the necessity of an alternative approach to social work was triggered by major drawbacks of the traditional approach used in social work due to the negative influence of the pathology-based 'study, diagnosis and treatment' model of medical sciences (McMillen, Morris & Sherraden, 2004; Weick, 2009). Consequently, a strengths model of case management (the 'Kansas model') was developed and introduced by the University of Kansas (KU) in the mid-1980s in the area of mental health service delivery (Staudt, Howard & Drake, 2001). This led to the introduction of a number of strengths-based interventions in the area of social work, such as solution-focus therapy (Miller, Hubble & Duncan, 1996), the individual placement and support model of supported employment (Becker & Drake, 2003), the asset-building model of community development (Ketzman & McNight, 1993), and strengths-based social work assessment (Graybeal, 2001).

Positive psychology is the other domain of knowledge where the strengths perspective can be traced. Martin Seligman, introduced the term 'positive psychology' to emphasise the importance of recognising and nurturing human talents and virtues by psychologists in addition to their general practices of curing diseases of the human mind (Seligman & Csikszentmihalyi, 2000). This led to the contemporary positive psychology movement wherein Martin Seligman is considered to be the leader (Linley & Harrington, 2005; Luthans & Youssef, 2007). Along with this emphasis on the positive aspects of human nature, different strengths-based practices emerged in both academic and applied domains, such as leadership (Welch, Grossaint, Reid & Walker, 2014), service delivery (Ibrahim, Michail, & Callaghan, 2014), education (Lopez & Louis, 2009), policy (Rapp, Pettus & Goscha, 2006), career coaching (Littman-Ovadia, Lazar-Butbul & Benjamin, 2014) and management (Brim, 2007; Engelbrecht, 2010).

Strengths-based approach to management is managing employees with a strengths focus. It is argued that the employees whose strengths are recognised in the workplace are happier, more fulfilled, and have more energy to achieve their goals and perform better at work (Linley et al., 2009). Previous researchers have demonstrated that strengths awareness and strengths use lead to positive outcomes for people and organisations, such as enhanced life satisfaction and employee well-being, enhanced employee engagement, improved self-efficacy and confidence in goal attainment, enhanced self-esteem, and enhanced employee and organisational performance (e.g. Crabb, 2011; Forest, Mageau, Crevier-Braud, Bergeron, Dubreuil & Lavigne, 2012; Govindji & Linley, 2007; <http://www.gallup.com>; Linley, Woolston & Diener, 2009; Littman-Ovadia et al., 2014; MacKie, 2014; McDowell & Butterworth, 2014; Park et al., 2004; Welch et al., 2014; Wood et al., 2011; Woerkom & Meyers, 2015). Ideally, organisations should have a strengths culture (applying a strengths framework to the organisation's human resource activities) (Linley & Harrington, 2006a; Tombaugh, 2005) and a strengths-based psychological climate (employees' positive perceptions of strengths-based philosophies) (Woerkom & Meyers, 2015) for managers and employees to realise their strengths and strengths requirements of the different roles in organisations. It also helps managers to place employees in roles wherein they can apply their realised

strengths. Thus strengths culture and strengths-based psychological climate leads to a better performance for both employees and organisations.

2. DATA AND METHODOLOGY

We employed a qualitative research methodology to explore and understand a phenomenon that has not been previously researched (Bluhm, Harman, Lee & Mitchell, 2011). The study involved an interpretive phenomenological approach (Wojnar & Swanson, 2007) with semi-structured, face-to-face interviews to obtain a wide range of data from the individuals at different levels of the organisation (Kvale & Brinkmann, 2009; Martin, 2000). The units of analysis of this study were the owner/managers and the employees of the small businesses because they were likely to have direct experience of the phenomenon studied (Ivey, 2013; Wojnar & Swanson, 2007). The experiences, perceptions and attitudes of the small business owner/managers and employees were the primary data for the study (Kumar, 2014).

2.1. Sampling

Small businesses in the motor vehicle industry in Western Australia were selected as the sampling frame using a purposive sampling technique (Kumar, 2014; Long & Godfrey, 2004). The owner/managers and employees were recruited using convenience sampling, with regard for the researcher's convenient access to participants and known contacts (Kumar, 2014). The early recruits were asked to recommend other potential participants, and we thereby extended the list of participants using the snowball sampling technique (Kumar, 2014). A sample of 30 respondents, comprised of 11 managers and 19 employees from 17 small businesses in the motor vehicle industry participated this study.

2.2. Data collection and data analysis

Separate semi-structured interview schedules were used for the two categories of respondents. Interviews were conducted at a time and place that the participants considered convenient (Qu & Dumay, 2011). Each interview lasted approximately 40 minutes. In addition to the scheduled questions, the researcher asked questions arising from the dialogue such as gentle probing where deemed necessary (Qu & Dumay, 2011). The interviews were audio taped with the participants' permission (Carpenter & Suto, 2008). Following each interview, the thoughts and observations of the researcher were recorded in a field log.

Thematic analysis was used for data analysis, given its flexibility to allow the researcher to interpret data in a broader manner. This method also enabled the researcher to highlight similarities and differences within the data set (Aronson, 1994; Braun & Clarke, 2006). The Nvivo10® software programme was used to assist with data analysis (Leech & Onwuegbuzie, 2011) because it has the capacity to work with a wide range of data and to adopt many types of analyses (Wiltshier, 2011). The analysis was guided by Braun and Clarke's (2006) 'six phases of thematic analysis' procedure.

3. RESULTS

The research questions to guide this exploratory study were: Is the strengths-based approach well-suited for managing and developing employees in small business, and how is the strengths-based approach employed in this context? The analysis of data found 17 themes with respect to the sub-questions of the study. A summary of findings is presented in Table 1. The findings are discussed in the context of relevant literature in the following sections. The sections are aligned with the sub-questions of the overarching research question.

Do small businesses use a strengths-based approach to managing and developing their employees and if so, how do they implement the approach?

The findings revealed that the owner/managers used a strengths-based approach in employee selection during the employees' period of temporary employment and in task assigning. In the opinion of participants, in both instances, the managers observed employees' actual performance under real work settings to identify whether the employees had the required strengths. This is consistent with several definitions of a strength. That is, people who have the natural capacity to display optimal functioning and performance in a task are more likely to be those with required strengths (Bibb, 2016; Linley & Harrington, 2006b; Rath, 2007).

However, the findings also suggest that the owner/managers did not use a strengths-based approach during employee selection interviews, employee training, and employee performance evaluation. Instead, the criteria and the process used in employee selection interviews and performance evaluation were more like that of competency-based human resource activities (Boyatzis, 2008; Campion et al., 2011; Olesen, White & Lemmer, 2007). It was further found that the training interventions were aimed at employees' 'weakness fixing' as opposed to what is advocated in strengths literature (Coetzer, Redmond & Bastian, 2014; Linley & Harrington, 2006a, 2006b; Linley et al., 2009).

What are the perceived enablers to the adoption of the strengths-based approach?

The findings suggest that close relationships between owner/managers and employees in small businesses, owner/managers' autonomy in decision making, managerial informality and flexible work roles within small businesses, and owner/managers' concerns about customer retention were conducive to the adoption of the strengths-based approach in small businesses. From participants' perspectives, the enablers would facilitate the adoption of the strengths-based approach: identify employee strengths; allow managers to perform the role of a strengths-based trainer/coach; and facilitate role shaping within the workplace to make employees' weaknesses irrelevant.

Table 1. A summary of findings

What are the perceived barriers to the adoption of the strengths-based?

Research objectives	Themes defined	
To understand whether small businesses use a strengths-based approach to management and, if so, to find out how they implement the approach	Employee selection	Theme 1: Managers focus on job-related experience and qualifications Theme 2: Managers focus on candidates' appearance and background Theme 3: Managers focus on the attitudes of candidates
	Task assigning	Theme 1: Managers focus on positive character traits Theme 2: Managers focus on the skills of employee
	Employee training	Theme 1: Managers conducted personalised coaching Theme 2: Managers encouraged peer coaching Theme 3: All employees got access to technical update training
	Employee performance evaluation	Theme 1: Managers appreciate employees verbally Theme 2: Managers reward employees with gifts and special benefits
To explore perceived enablers and barriers to the adoption of the strengths-based approach in small businesses	Perceived enablers	Theme 1: Close manager-employee relationship fosters strengths-based approach to management Theme 2: Autonomy in decision making facilitates strengths-based approach to management Theme 3: Managerial informality and flexible work roles helps strengths-based approach to management Theme 4: Managers' concerns about customer retention set background to strengths-based approach to management
	Perceived barriers	Theme 1: Time constraints discourage managers to use a strengths-based approach Theme 2: Limited availability of human resources hinders the adoption of strengths-based approach to management Theme 3: Strengths-based approach may lead to perceptions of inequity

We found that, from participants' perspectives, time constraints faced by owner/managers, limited availability of human resources, and managers' perceptions that the strengths-based approach may lead to perceptions of inequity among employees would hinder the adoption of the strengths-based approach in small businesses.

4. CONCLUSIONS AND RECOMMENDATIONS

Previous research on strengths-based approach has been conducted predominantly in academic and experimental settings. The very few studies under occupational settings were conducted in large business contexts. Hence, this research generates new knowledge on the strengths-based approach in the small business context. The current study provides the first empirical evidence on the adoption of strengths-based approach in small businesses. Although the literature on small business characteristics (e.g. Wong & Aspinwall, 2004; Yusof & Aspinwall, 2000) and a very few research (Coetzer et al., 2014) suggests that a strengths-based approach to employee management in small businesses has good prospects, this study provides the first empirical evidence on its suitability to the small business context.

The findings of this study suggest that the owner/managers were aware of the potential benefits of strengths use by employees. However, due to the difficulties faced in identifying employee strengths and some of the constraining characteristics of the small business environment, the owner/managers have been unable to apply a full-blown strengths framework to organisations' human resource activities. The findings further suggest the suitability of small business environment for the adoption of the strengths-based approach to management given that the identified enablers and barriers are managed accordingly.

The findings have practical implications for the small businesses sector. The study provides owner/managers with information about a potential alternative to the traditional weakness-based management practice. The findings also provide a new direction for owner/managers to achieve enhanced levels of employee satisfaction, employee motivation and employee engagement and improved employee and organisational performance by capitalizing on employee strengths. Moreover, this study found that some of the small business characteristics, such as managerial informality, governance by people-dominated systems, less clear division of job responsibilities and limited customer base, which were previously recognised as ‘constraining characteristics’ had the potential to facilitate the adoption of this new management approach. This finding suggests the necessity of in-depth analyses of small business characteristics prior to any practice or policy recommendation or implementation in the sector by small business practitioners or the government.

The current study was limited to a convenient sample in which any strengths identification was done using managers’ personal observations and judgements. Given the criticality of the strengths identification stage in adopting a strength-based approach, future researchers could explore organisations that use one or more recognised tools for strengths identification. This research was an exploratory study that relied on cross sectional data. Future research with longitudinal designs may be able to explain the effects of a strengths-based approach on small business employees and thereby provide strong conclusions on the suitability of the said approach to the small business context. Although this study was limited to the motor vehicle industry, future research could address other industries, such as retail and manufacturing, to increase the findings representation’s credibility and accuracy. Such future research should shed more light on the link between a strengths culture and diverse outcome measures of small business performance.

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A Comparative Study of Accounting and Finance Bachelor's Degree Programs in Australia and Sri Lanka

U. Edirisinghe^a and D. Kapu Arachchilage^b

^a*Department of Accountancy & Finance, Sabaragamuwa University of Sri Lanka, P.O. Box 02, Belihuloya, Sri Lanka*

^b*School of Business and Law, Edith Cowan University, 270 Joondalup Drive, Joondalup, Western Australia, 6027*

Corresponding Author's Email Address: d.kapuarachchilage@ecu.edu.au

Abstract: *The dynamic economic environment we encounter today is more financially driven rather than trade driven and due to this transformation there are greater concerns on higher education degree programs in accounting and finance. This study compares accounting and finance bachelor's degree programs offered by Sri Lankan and Australian universities. 18 universities are selected from the two countries as the sample of this study. Comparison is first made at national policy level and then at programs level by analysing related national frameworks, curriculums of related special/major bachelor's degree programs. Consequently, similarities, differences, strengths and weaknesses of programs offered by two countries are identified as a mean of lessons to be learned from each other.*

Keywords: *Accounting, Finance, Higher Education*

JEL Classification: A22, I23, M4

1. INTRODUCTION

Although Accounting and Finance are two different fields of studies, the two disciplines are definitely interrelated with each other. Both accounting and finance are highly technical disciplines where one should be qualified through recognized professional and academic institutions/bodies to receive professional recognition. Grablowsky and Brewer (1975) state that in the mind of practitioners, accounting and finance are overlapping areas. Even in degree programs specialized in either accounting or finance separately, closely associated subjects are inevitably taught in each degree program. For example, fundamentals of financial management and corporate finance are essentially covered in bachelor's degree programs specialized in accounting and vice versa. In fact according to Grablowsky and Brewer (1975) many practitioners in the finance field fail to identify a real difference between accountancy and finance training.

In the world of rapidly changing technology which changes all means of business methods and practices, greater concerns could be identified among policy makers, regulators, professional bodies and educators on changes in accounting and finance related higher education (Wijewardana & Cooray, 1993; Salem, 2013). Growth and development levels of economies of different countries are at different paradigms due to various political, social and economic states of affairs. Education development related to accounting and finance may or may not be in par with domestic and financial environments. Thus the quality of the higher education cannot be directly judged by the status of related industries with in the countries' borders. Mainly education systems in any country evolve with the innovations and trends emerge globally regardless of the fact that whether local industries catch up with these trends or not. Yet this conclusion cannot be made in higher education sector without proper evidence through in-depth comparison between higher education programs. As an attempt to find such evidence this study conducts a comparative analysis on bachelor's degree programs related to accounting and finance offered by universities in Sri Lanka and Australia. The emphasis will be to identify key similarities and differences of the two systems. Also such a cross country analysis would serve as a reference for future educational reforms in each of the countries (Ding, 2000).

When reviewing the past literature, many studies are available analysing the higher education systems related to accounting degree programs of two countries. However, a vast majority of these studies do not jointly analyse both fields of study (accounting & finance). Thus, an alternative motive of this study is to fill this research gap.

2. DATA & METHODOLOGY

2.1. Population & Sample

There are 43 universities in Australia both private and public funded and all these universities have either business schools or faculties offering degree programs relevant to the fields under discussion. Out of 15 national universities in Sri Lanka only 12 universities provide degree programs specializing in either accountancy and/or finance.

Six universities from Sri Lanka and twelve universities from Australia have been considered as the sample of this study. To ensure the sample covers the curriculum of high ranked as well as low ranked universities, sample was randomly selected by ranking according to the Webometrics. Nonetheless for Australia due to the geographical complexity and to guarantee fair representation from each of the seven states, universities were clustered by their location prior to proportional selection.

2.2. Data

This study is based on secondary data mainly gathered from information available on the web. Information for National policy level is obtained from the websites of the government authorities responsible for higher education in the two countries. And information on course structure and curriculum are obtained from the websites of the respective universities. Policy documents were compared and analysed with the aid of Nvivo qualitative data analysing software. The comparative analysis of the degree programs offered was analysed through detailed review of courses offered by each university. When selecting the degree programs only bachelor degrees either specialize or major in the disciplines of accounting and finance have been considered. Double majors or minors in the considered disciplines have been excluded from this analysis. This study follows semi structured research design which is regarded by Teichler (1996) as theoretically and methodically most promising way to conduct comparative analysis.

3. RESULTS

3.1. General Structure of Education

Education system of Australia can recognize in three stages namely, F-10 (Foundation to Year 10), senior secondary curriculum and tertiary education. F-10 covers the curriculum from Foundation to Grade 10, which is structured upon 8 key learning areas (English, mathematics, science, humanities and social sciences, arts, technologies, health and physical education, languages). The next stage is senior secondary which is similar to Advanced level in Sri Lanka with few structural differences. In grade 11 and 12, students should select combination of subjects under different subject streams to pursue in their two years of senior secondary study aiming ATAR (Australian Tertiary Admissions Rank) course examination or VET (Vocational Education Training) Examination. Arts, English, Humanities and social sciences, health and physical education are some of these subject streams. Tertiary education in Australia can be obtained either at universities or at TAFE (Technical and Further Education institutes). Students who expect to enter into universities for tertiary education should sit for ATAR examination and get a benchmark score relevant to the degree program they expect to study in university of their choice. Students who sit for the VET examination can enter into technical colleges to follow a TAFE course related to their potential career.

The Education system in Sri Lanka can be mainly divided in to five parts, namely Primary, Lower Secondary, Upper secondary, Advanced Level and Tertiary Level. Primary level education is from Grade 1 to 5 (5 to 10 years old children), Lower secondary is from Grade 6 to 9 (10 to 14 years old children), upper secondary level is grade 10 and 11 which is the level that prepares students for General Certificate of Education (G.C.E) Ordinary Level (O/L) Examination. Advanced level is the final two years at school education system, that is Grade 12 and 13 (16 to 19 years old children). Students who want to pursue advanced level education must complete G.C.E O/L examination. Once qualified for the advanced level

education, students have the choice to select from five major streams of study namely, Physical Science Stream, Biological Science Stream, Commerce Stream, Arts Stream and Technology Stream. Students should study 3 subjects under each stream and sit for the same subjects at the General Certificate of Education (G.C.E) Advance Level (A/Ls) examination. G.C.E A/L examination also acts as the entrance examination for Sri Lankan state universities which is the only pathway to access to free tertiary education.

3.2. Comparison between Pathway to Higher Education Related to Accounting and Finance

Table 1 Higher Education Pathways

Stages of Education System	Australia	Sri Lanka
F-10 (Foundation to Grade 10)/ Secondary Level – GCE O/L	Economics and Business is a subject under Humanities and Social Sciences learning areas from Grade 7 to Grade 10.	Commerce and Accountancy is an optional subject under Vocational Training Subjects for Grade 10 & 11
Senior Secondary Advanced Level – G.C.E A/L	Senior secondary level has an ATAR course for Accountancy and Finance. If a student is able to score the ATAR score requested by the courses in any field they can get university entrance to follow those courses. Not as in Sri Lanka, students following ATAR course in accountancy and finance does not necessarily need to pursue their higher studies in this particular stream.	Commerce Stream is one of the fields from the five fields of studies which students can choose to study for 2 years at advanced level. Commerce Stream has three main subjects namely Accounting, Economics and Business Studies. Students pursue to enter into a national university Sri Lanka and access bachelor degree programs related to Management/Accounting/Finance must select the commerce stream and correct subject combination.
Tertiary Level (Bachelor's Degrees)	All the national universities of Australia offers degree programs related to Accountancy and Finance. The entry qualification ATAR score differs among universities. Universities offer 3 year bachelor's degrees which can be a single major in either accountancy/finance, or double major with much wide range of disciplines such as marketing, planning, law, human resource management, international business etc. Common titles of degree programs are Bachelor's in Commerce or Bachelor's in Business.	Admission to the university system is based on the highly competitive GCE Advanced Level examination. All bachelor's degrees available in national universities are 4 year bachelor honours degrees specializing in either accounting or finance. Common Title of degree programs are Bachelor of Science in Management, Bachelor of Business Administration specialising in Accounting/Finance.

3.3. Comparison between Qualification Frameworks

In the attempt of current study to compare higher education systems of the two countries related to accounting and finance disciplines, comparison of national qualification frameworks is of paramount importance. The Australian framework (AQF) has first originated in 1995 and have revised for several times, most recent being the revision in 2011. Whereas Sri Lanka Qualification Framework (SLQF) has only initiated in 2009 and had only one revision since then in 2015.

Table 2 represents a comparison between qualification hierarchies of the two countries. Sri Lankan system has 12 levels where as AQF has only 10 levels. Although similarities could be observed in the two frameworks, key differences could be identified in the manner level descriptors and qualification descriptors have been defined.

Table 2 Qualification Hierarchies

SLQF Level Qualification awarded	SLQF Level	AQF Level	AQF Level Awarded	Qualification
Doctor of Philosophy / MD with Board Certification/Doctor of Letters/Doctor of Science	12	10		Doctoral Degree
Master of Philosophy	11	9		Masters Degree
Masters with course work and a research component	10			
Masters by course work	9			
Postgraduate Diploma	8	8		Bachelor Honours Degree Graduate Certificate Graduate Diploma
Postgraduate Certificate	7			
Bachelors Honors	6			
Bachelors	5	7		Bachelor Degree
Higher Diploma	4	6		Advance diploma/Associate degree
Diploma	3	5		Diploma
			4	Certificate 4
			3	Certificate 3
			2	Certificate 2
			1	Certificate 1
Advanced Certificate (GCE A/L or equivalent)	2			Senior Secondary Certificate of Education
Certificate (GCE O/L or equivalent)	1			

Source : AQF (2011) and SLQF (2015)

Volume of Learning

There is a significant difference in how volumes of learning have been defined in the two frameworks. Volume of learning of a qualification is the notional duration for all activities required to achieve intended learning outcomes of specific qualification type (AQF, 2013). It is a fundamental dimension in defining and differentiating each qualification type from others. In SLQF, volume of learning is defined in terms of credits. A credit is considered equal to 50 notional hours for a taught course and 100 notional hours in a industrial training /research course. A full-time academic year is considered to have 1500 notional hours. The total credits per course will be defined by determining the total activities student expected to achieve in order to reach learning outcomes. If a course module is allocated with 3 credits, students must engage with activities that requires spending 150 notional learning hours in a credit course. Thus the duration of the qualification will depend upon the amount of credits determined to a qualification. For example a SLQF level 3 bachelor’s qualification should have minimum of 90 credits which means students must at least spend 3 years to earn this qualification.

The definition of AQF is straight forward. It does not have a linkage with credit allocation. Volume of learning is simply defined by the number of years to be spent on the qualification. For example AQF level 7 bachelor degrees minimum required volume of learning is 3-4 years.

3.4. Comparison between Bachelor's Degree Course Coverage

After the national policy level analysis, the course content offered by the bachelor's degrees of the 18 universities selected for the sample were analysed by looking in to what course units each of the degree program offers. As the model curricula for degree programs in accounting and finance, two base papers were considered. For Accounting, model Curriculum drafted at the United Nations Conference on Trade and Development (UNCTAD), Geneva in 2011 was considered and for Finance the subject areas need to be covered was constructed based on surveys by Root et al., (2007) and Lessard and Mattson (1996).

Table 3 Percentage of weight given to each Knowledge Area

Subject Dimensions	Accounting		Finance	
	SL	AUS	SL	AUS
Organizational Knowledge	30.3%	21.9%	43.2%	26.9%
Information technology (IT)	7.5%	2.3%	9.7%	3.2%
Accounting Courses				
Core (Basic) Accounting-Related Knowledge	32.3%	43.6%	31.7%	17.3%
Advanced Accounting related knowledge	8.7%	4.5%	6.9%	1.6%
	41.00%	48.10%	38.60%	18.90%
Finance Courses				
Derivatives	1.0%	0.3%	1.6%	5.8%
Financial Markets and Institutions	0.8%	0.3%	1.7%	8.0%
Financial Management/Corporate Finance	3.0%	1.4%	5.1%	8.0%
Investment	2.1%	0.3%	4.3%	6.7%
Real Estate	0.0%	0.0%	0.5%	0.3%
Special Topics related to Finance	3.0%	1.4%	6.1%	7.7%
	9.90%	3.70%	19.30%	36.50%
Research	7.5%	0.0%	9.8%	0.3%
Internship/Work Integrated Learning	6.3%	3.8%	6.9%	1.0%

Table 3 illustrates the comparison between average weights allocated to the twelve knowledge areas suggested by model curricula. In both countries, a higher weight is allocated for course units related to organization knowledge. Weight of course units related to IT is considerably and comparatively high in Sri Lanka, may be due to the fact that lower computer literacy level of undergraduates compels to include more IT course units in the curriculum. This approach agrees with Boritz (1999) recommendation to have additional curriculum coverage to deal with latest development in IT related to enterprises. Notably accounting courses are the knowledge areas with the highest weight of accounting special degree programs of both countries. Also in Sri Lankan Finance special degrees, units related to accounting get a prominent value just as in an Accounting degree. In fact the total average weight for accounting course units (38.6%) in a Sri Lankan Finance degree is significantly higher than the total weight of Finance course units (19.30%).

In credit to the fact that Sri Lankan universities only offer 4 years honours degrees, research methodology is a compulsory course in the curriculum and a thesis or an internship would be a compulsory program requirement. Whereas in Australia rarely research course unit is involved and only handful of degrees give the option for internship/work integrated learning (WIL). Abeysekara (2006) states that growing number of international students in Australia is one of the major issues to incorporate WIL program to their curriculum among many other issues.

3.5. Flexibility of Course Electives

Yelkikalan et al. (2012) depict that if business schools to maintain their sustainability and increase their preference level should have flexibility on curriculum while increasing units on special subjects. Higher weights on elective units mean the curriculum is more flexible to allow students to choose what they want to study. Table 4 illustrates the ratio between credit weight on core courses and elective courses. It is clear that Australian undergraduates have more flexibility than Sri Lanka because all Australian universities offer 25%-46% of credit weight on elective courses whereas apart from one university weight on electives are below 10% in Sri Lanka.

Table 4 Percentage of Elective Courses

Universities	Accounting - Units of Credits				Finance -Units of Credits			
	Total	Core	Elective	Electives %	Total	Core	Elective	Electives %
<u>Sri Lanka</u>								
UOC	120	106	14	12%	120	106	14	12%
UOK	120	110	10	8%	120	110	10	8%
UJPR	126	120	6	5%	120	120	6	5%
SEUSL	126	120	6	5%	126	120	6	5%
EUSL /SUSL	120	120	6	5%	127	124	3	2%
<u>Australia</u>								
UNSW	144	78	66	46%	144	78	66	46%
UNCASTLE	240	140	100	42%	240	140	100	42%
CANBERRA	72	48	24	33%	72	48	24	33%
UQ	48	36	12	25%	48	36	12	25%
QUT	288	156	132	46%	288	156	132	46%
USQ	24	16	8	33%	24	16	8	33%
ADELAIDE	72	54	18	25%	72	51	21	29%
MELBOURNE	300	225	75	25%	300	187.5	112.5	38%
DEAKIN	24	16	8	33%	24	16	8	33%
SWINBURNE	300	200	100	33%	300	200	100	33%
UWA	144	84	60	42%	144	84	60	42%
ECU	360	240	120	33%	360	240	120	33%

Even though Australian degree programs are more flexible due to more elective course units, that also raise the issue of level of specialization towards the core discipline knowledge areas. Table 5 provides evidence that Sri Lankan degree programs have given more weight to specialized knowledge areas by having those as core course units rather than having them as electives. Also the higher percentage of electives of Australian degree programs allow students to select from Non Accounting/Finance Courses or minor from an entirely different discipline which also contributes to the fact that Sri Lankan degree programs are highly focused into specialisation/major discipline (Accountancy/Finance) than Australia. Wijewardena and Cooray (1993) points out that it becomes important to integrate accounting with other business disciplines and general education as that would strengthen the liberal arts knowledge base.

Table 5 Percentage weight on specialized knowledge Areas

Accounting Special Knowledge Areas	Accounting Degrees				Finance Special Knowledge Areas	Finance Degrees			
	CORE		ELECTIVES			CORE		ELECTIVES	
	SL	AUS	SL	AUS		SL	AUS	SL	AUS
Financial Accounting Management	10.44%	14.12%	0.00%	2.08%	Financial Management	2.97%	4.17%	0.00%	2.08%
Accounting for special industries	6.54%	4.86%	0.33%	1.74%	Corporate Finance	5.36%	4.81%	0.00%	5.56%
Taxation Accounting information systems	2.29%	2.43%	1.63%	0.00%	Derivatives & Risk Management	0.38%	2.56%	1.53%	3.47%
Law	2.95%	3.13%	0.32%	1.56%	Financial Markets and Institutions	1.11%	4.17%	1.25%	4.17%
Auditing	3.90%	1.39%	0.48%	0.00%	Insurance	0.42%	0.32%	0.56%	0.00%
	4.25%	5.21%	0.67%	2.60%	Investment	3.44%	3.53%	1.11%	1.39%
	3.45%	3.13%	0.65%	1.04%	Real Estate	0.00%	0.00%	0.42%	0.00%
					Cases in Business/Finance	0.00%	0.64%	0.56%	0.69%
					Special Issues in Finance	1.39%	0.00%	1.39%	0.00%
					Financial Information Technology	0.14%	0.00%	0.00%	0.69%
					Forecasting	0.42%	0.00%	0.00%	2.08%
					International Finance	1.48%	1.92%	0.56%	1.39%

4. CONCLUSIONS AND RECOMMENDATIONS

This paper compares the higher education system of bachelor's degree programs specialized in Accounting and Finance in Sri Lanka and Australia. One of the important findings of the study is that in Sri Lanka it is difficult to draw a clear distinction between accounting degree programs and finance degree programs as the level of prominence is given to accounting in finance special degree programs is significantly high, questioning the adequacy of finance units in finance programs. In Sri Lanka universities offer 4 year bachelor's honours degrees where as in Australia it is generally 3 year bachelor degrees. Due to the same fact, in Sri Lankan degrees, research and internship/WIL are compulsory component in the curriculum with high credit weights but in Australia handful of programs gives WIL even as an elective. In terms of flexibility Australian degrees are more flexible with higher number of elective units in contrast to Sri Lankan curriculum structure which is very standardized and rigid giving poor liberty to the students to choose units of their choice. However, this also makes the Sri Lankan degree program equipped with compulsory advanced units related to accounting and finance in curricula than in Australia.

Major lessons can be learned and remedial actions can be taken from these findings are, Sri Lankan institutions should attempt to give more flexibility to students by offering more elective units and may also lessen the focus towards specialization by giving students the option to minor in another field of study. Australian institutes should find ways and means to incorporate WIL to the curriculum because as Abeysekara (2006) stated accounting curriculum should be 'for accounting' rather than 'about accounting'.

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Comparing Market-Based and Accounting-Based Credit Models: A Survey of the Theoretical Literature

D. Dinh^a, R. Powell^a and D. Vo^b

^a*School of Business and Law, Edith Cowan University, 270 Joondalup Drive, Joondalup, Western
Australia, 6027*

^b*Ho Chi Minh City Open University, 97 Võ Văn Tần, phường 6, Quận 3, Hồ Chí Minh 700000,
Vietnam*

Corresponding Author's Email Address: ddinhvie@our.ecu.edu.au

Abstract: *The paper examines two common types of corporate financial distress models, including (i) accounting-based models; and (ii) market-based models. While the accounting-based models use the analysis of financial statements to differentiate between distressed and non-distressed firms, market models utilise a combination of balance sheet items and volatility in market asset values of a firm to measure Distance to Default (DD). Findings from empirical studies using these models across countries and periods of time have provided mixed results. As such, the choice of an appropriate default models needs to factor in the unique circumstances of each credit portfolio.*

Keywords: *Accounting models, Market models, Financial distress, Distance to default.*

JEL Classification: G21

1. INTRODUCTION

The liberalisation of financial institutions worldwide in recent decades has created opportunities for commercial banks to develop their operations and minimise their losses in the face of changes in economic circumstances. Nevertheless, the competitiveness among financial sectors around the globe has also created riskier financial markets. In these conditions, banks and other financial institutions require powerful and effective risk management systems. Bank risk management is therefore a matter that has attracted special attention from policy makers, researchers and the commercial banks themselves. In order to achieve effective risk management, banks must give high priority to the evaluation and estimation of their credit risks. Credit risk, also known as default risk, has become one of the key risks for banks, especially since the Global Financial Crisis of 2008-2009, when banks experienced dramatic financial problems. Consequently, building prediction models for corporate financial distress is important to the business activity of commercial banks.

It is essential for lenders to measure the credit risk or financial distress of firms because lenders need to be aware of borrowers' potential bad debts, and for making provisions, evaluating risk, determining credit

policy, allocating capital, setting discretionary authorities for credit officers, and detecting weakened assets at an early stage. For policy makers, understanding of credit risk is essential to maintaining quality lending practices and saving sufficient capital.

There are various credit risk measurement models, from which the most suitable and relevant model should be selected by commercial banks. In this paper, an extensive literature survey on the topic is undertaken. In general, two types of popular credit risk models are presented: (i) the accounting-based model and (ii) the market-based model. The accounting-based models rely on an analysis of financial statements from borrowers' business to derive a score, such as the Altman Z-score; whereas market-based or structural models such as the Merton and KMV models use the firm's leverage and volatility of market asset values of a firm to obtain Distance to Default (DD) and Probability of Default (PD).

The purpose of this study is to extensively assess the relative advantages and disadvantages of each model type and compare their effectiveness over different economic conditions. This comparison can provide lenders and regulators theoretical evidence in relation to the most appropriate model for their circumstances. The structure of this paper is as follows. Following this Introduction, Section 2 presents the literature survey on accounting-based models. Market-based models are synthesised in Section 3. Section 4 compares and contrasts the two modelling approaches, following the conclusions in Section 5.

2. ACCOUNTING-BASED MODELS

Accounting-based models entail the use of accounting information (balance sheets and profit and loss statements) to derive a score which discriminates between distressed and non-distressed firms. One of the first accounting-based models was developed by Beaver (1966), who applied 79 financial ratios to defaulting and non-defaulting listed firms in the period from 1954 to 1964. Based on classification tests in a univariate framework, Beaver identified a single financial ratio (Cash flow/Total Debt) as the best indicator of bankruptcy.

In 1968, Altman published the Z-score formula which used Multiple Discriminant Analysis (MDA) to develop a prediction model. The first application of the model involved a group of 66 American manufacturing firms, 33 bankrupt companies and 33 companies which were not bankrupt. Altman (1968) selected 22 potential variables (financial ratios) to evaluate, and then to segment them into 5 distinct groups, namely: liquidity, profitability, leverage, solvency, and activity. He found that 5 out of these 22 variables provided the best combination to predict bankruptcy, and the following discriminant function for public firms is then presented to predict default:

$$Z = 0.012X_1 + 0.014X_2 + 0.033X_3 + 0.006X_4 + 0.999X_5 \quad (1)$$

where: X_1 = working capital/total assets, X_2 = retained earnings/total assets, X_3 = earnings before interest and taxes/total assets, X_4 = market value of equity/book value of total liabilities, X_5 = sales/total assets.

The predetermined cut-offs for the Z score are as follows: If $Z > 2.99$ - "Safe" Zone: the company is in a safe zone, no risk of bankruptcy. If $1.81 < Z < 2.99$ - "Grey" Zone: the company is in a warning zone, there may be a risk of bankruptcy. If $Z < 1.81$ - "Distress" Zone: the company is in a distress zone, there is a high risk of bankruptcy (Altman, 2014).

Altman (1968) claimed the MDA model was able to accurately predict failure with 95% accuracy one year in advance. The model has since been widely used by researchers and banks to understand and minimize credit risk. Altman, Haldeman and Narayanan (1977) subsequently constructed a 7-variable bankruptcy model, known as ZETA model. This model is arguably able to predict failure five years prior to bankruptcy. Altman (1983) then modified the original Z-score model, into two versions, a Z'-score model for private manufacturing firms and a Z''-score model for non-manufacturing firms. With the Z'-score model, the author substituted the book value of equity for the market value in X_4 of equation (1), and with the Z''-score model, X_5 was excluded.

However, Ohlson (1980) asserted that there were some limitations with MDA credit models. For example, the author argued that prior research did not adequately reflect the timing issue. In this study, Ohlson investigated when reports were released to examine whether firms were actually bankrupt before or after the released date. He also used a Logit or Multiple Logistic Regression in formulating a model to predict bankruptcy based on 9 financial ratios. Key findings from this paper are that 88% of 105 bankrupt firms were actually bankrupt one year before they were declared bankrupt. The results showed four important aspects in predicting bankruptcy: the size of the company, leverage, performance, and liquidity. Later, Zmijewski (1984) used 3 financial ratios which measure performance, leverage, and liquidity in order to derive a scoring model using the probit approach. In addition, Moody's KMV Company (2003) created the RiskCalc model to provide Estimate Default Frequency (EDF) measures for private firms based on 11 financial ratios.

Stanisic, Mizdrakovic and Knezevic (2013) constructed prediction models of corporate default in the market conditions of Serbia and compared outcomes with Altman's Z-score. Stanisic et al. (2013, p. 145) stated that "many authors have constructed models for the purpose of bankruptcy prediction, but predominantly in stable market conditions or in times of economic growth". Various approaches such as Logistic Regression, Decision Trees, and Artificial Neural Networks were adopted. In all these approaches, financial ratios were used to predict distress, Stanisic et al. (2013) found that only the artificial neural network model performed better than Altman's Z-score models. In Bosnia and

Herzegovina, Memic (2014), used various models to predict default up to 4 periods in advance prior to default. He found that default prediction differed between logistic regression and MDA.

In Thailand, Meeampol et al. (2014) applied an emerging market Z-score model and a traditional Z-score model to predict the financial distress of the listed firms on the Stock Exchange of Thailand (SET) over the period from 1998 to 2003. Meeampol et al. (2014) found both of these models be good predictors of possible bankruptcy. Furthermore, these models were even more effective when two years of information were used rather than one year. Lawrence, Pongsata, and Lawrence (2004) compared Ohlson's Logit model (Ohlson, 1980) and Altman's Z'-score model (Altman, 1983) for predicting the bankruptcy of firms in Thailand. Key conclusion is that both methods are able to predict for financial distress of Thai firms regardless of their size.

Notwithstanding these positive findings, there have been criticisms of accounting-based models. For example, Platt and Platt (1990) and Grice and Dugan (2001) found that the models had low accuracy if circumstances (such as economic conditions, time periods or industries) differed from the original circumstances that were used to develop the models. The models have also been criticised due to time lags in obtaining financial information (Zavgren cited in Allen et al., 2015) and due to the static nature of accounting information (Katz, Lilien, & Nelson, 1985; Queen & Roll, 1987). However, these shortfalls do not apply to market-based models which are discussed in the following section.

3. MARKET-BASED MODELS

A criticism of accounting-based models was that the models use data from financial reports where the data is outdated and as such, backward looking. Sathye, Bartle and Boffey (2012) proposed to use forward looking market information on asset pricing and the market value of debt to calculate default probability. Black and Scholes (1973) and Merton (1974) used option pricing model in modelling default risk, and the structural model developed from this is commonly became known as the Merton model or Distance to Default model (DD model hereafter). Under these models, the firm defaults when asset volatility causes the market value of assets to fall below its debt values.

Several researchers have developed alternatives and modifications to the original Merton DD model. For example, Crosbie and Bohn (2003) produced Moody's KMV model, which calculates DD in a similar manner to Merton. However, instead of using a normal distribution to calculate PD from DD, Moody's KMV model sought to improve accuracy by using its own global database of distressed firms to determine and estimate default frequency (EDF) related to each default level.

A few researchers have focused on using an option model to find out the key drivers of default. For example, Patel and Vlamis (2006) calculated the DD and the risk-neutral default probabilities using the option-based model. They classified their results into type I error (default was not predicted even though it did occur), and type II error (predicted default did not occur). There was no type I error observed, but several type II errors were observed. Patel and Vlamis's results supported high leverage and high asset

volatility as being the two driving forces of default. Similarly, Bystrom (2006) found asset volatility and firm leverage ratios to be the drivers of default. Bystrom's work could be useful for assessing the default probabilities of firms in volatile environments.

In Bharath and Shumway (2008)'s paper, the DD model was compared to an alternative method using the functional form. The authors found the alternative prediction model to perform better in "hazard models and in out-of-sample forecasts than both the option-based model and a reduced-form model that used the same inputs" (Bharath & Shumway, 2008, p. 1339). In addition, they found the DD model did not generate a sufficiently accurate statistic for defaults, and claimed it was possible to build a reduced-accurate default prediction model that was useful for forecasting defaults.

Koutsomanoli-Filippaki and Mamatzakis (2009) provided realistic evidence on the active interactions between risk and efficiency. Their panel analysis evidenced that the effect of minor shocks to the DD on inefficiency was negative and substantial. Post GFC, Huang and He (2010) found the DD model to be suitable for comparing the default rate of major Chinese banks. Allen and Powell (2012) found that the DD model identified higher and more volatile default risk in Australian banks than was evident from book-based asset values.

Allen, Boffey, Kramadibrata, Powell and Singh (2013) used a DD model and a modified DD model (conditional distance to default or CDD model), which measured tail risk to measure asset volatility and default risk in Indonesia. Key findings from this study is that the CDD model was able to identify high tail asset volatility in the agriculture and mining industries of Indonesia. Pribadi and Susanto (2012) found that the DD approach provided good ordinal ranking of default probability for a sample of borrowers in Indonesia and also provided good early warning prediction for the public.

Argawal and Maheshwari (2016) assessed the significance of the Merton DD in predicting defaults for a sample of listed Indian firms, including those defaulting and non-defaulting. The study incorporated two alternative models: logistic regression and multiple discriminant analysis. The option-based DD was also created to predict defaults and had a significantly negative relationship with the possibility of default. The DD retained its significance even after the addition of Altman's Z-score. This further established the DD's robustness as a significant predictor of default.

In the DD model, DD denotes the number of standard deviations that the firm value is from the point of default. Lower values of this variable indicate that the firm is closer to the default point and there is larger probability of default. Based on works of Merton (1974), Crosbie and Bohn (2003), and Vassalou and Xing (2004), the following DD model is adopted.

There are two critical assumptions. The first is that the firm value follows geometric Brownian motion:

$$dV = \mu V dt + \sigma_v V dW \quad (2)$$

where: V is the total value of the firm, μ is the expected continuously compounded return on V , σ_v is the volatility of firm value and dW is the standard Wiener process.

The second assumption of the model indicates that the firm has only issued one single zero coupon bond maturing in T periods (one year is used in this study in line with common practice). Other assumptions are also adopted in this model, including: (i) refinancing and renegotiating of the firm's debt obligations is not allowed; (ii) liquidation of the firm is costless; and (iii) default boundary is constant. It is generally argued that neither the underlying value of the firm nor its volatility is directly observable. These two variables can be inferred from the value of equity, the volatility of equity and other observable variables used in the model. In addition, an iterative procedure is required to solve a system of non-linear equations to estimate the underlying value of the firm nor its volatility.

The equity value of a firm satisfies the following:

$$E = VN(d_1) - e^{-rT} FN(d_2) \quad (3)$$

where E is the market value of the firm's equity, V is the market value of the firm's assets, F is the face value of the firm's debt, r is the instantaneous risk-free rate, T is the time to maturity of the firm's debt and N is cumulative standard normal distribution function, and:

$$d_1 = \frac{\ln\left(\frac{V}{F}\right) + (r + 0.5\sigma_v^2)T}{\sigma_v\sqrt{T}} \quad (4)$$

$$d_2 = d_1 - \sigma_v\sqrt{T} \quad (5)$$

The volatility of the firm's value, σ_v , is related to the volatility of the firm's equity, σ_E , by the following expression:

$$\sigma_E = \left(\frac{V}{E}\right)N(d_1)\sigma_v \quad (6)$$

Solving the above two non-linear equations gives the firm's value, V , and its volatility, σ_v . These two variables, along with the face value of the debt, F , are inputs for estimating the DD, which is defined as:

$$DD = \frac{\ln\left(\frac{V}{F}\right) + (\mu - 0.5\sigma_v^2)T}{\sigma_v\sqrt{T}} \quad (7)$$

In above equations, the debts are equivalent to the value of all current liabilities plus half the book value of all long term debt outstanding. T is commonly set at 1 year. In addition, it is noted that daily log equity returns and their standard deviations are calculated for each asset for the historical period. In addition, these asset returns derived above are applied to equation 3 to estimate the market value of assets every day. Log of the daily asset return is calculated and new asset values estimated (Allen et al., 2015).

4. COMPARISON OF ACCOUNTING-BASED AND MARKET-BASED MODELS

The effectiveness of market-based and accounting-based credit models in default prediction have been compared and contrasted. For example, Hillegeist et al. (2004) criticized the effectiveness of Altman's (1968) Z-score and Ohlson's (1980) O-score, in providing analysis in relation to information to conclude the probability of default. In addition, Hillegeist et al. compared these scores with a DD model, finding that the DD model provided a great deal more information than accounting-based methods. Vassalou and Xing (2004) considered accounting models to be backward looking compared to the DD model, which uses forward looking market information. Those authors also criticized accounting models for implying that firms with similar financial ratios would have similar probability of default, because this would not be the case if their asset volatilities were different. In Australia, Gharghori, Chan and Faff (2006) found that a DD model outperformed accounting models in measuring default. This was the first study using significantly large Australian data (over 11,000 firms), to compare those models.

Miller (2009) found that the two different approaches were commonly used by practitioners and researchers to measure the financial health of all companies (not just manufacturing ones, as originally used in the Altman model) and included non-manufacturing companies in their testing universe. Miller (2009) concluded that DD had superior ordinal and cardinal bankruptcy prediction power, and it had a more durable bankruptcy signal, but it generated less constant ratings than the Z-score. Trujillo-Ponce, Samaniego-Medina and Cardone-Riportella (2014) used credit default swap spreads for the time period from 2002 to 2009 to empirically analyze whether accounting-based or market-based models could better explain credit risk for corporates. They found that a combined model of accounting-based and market-based variables was the best choice.

Allen et al. (2015), in a study of US data, found the key advantages of accounting-based models to be the wide range of factors included in the initial analysis, that were easy to apply because they comprised a few basic ratios. Furthermore, these models were accurate when used for the same industry as used for the model development. However, the models were often slow to react to changing economic conditions. Conversely, the authors found that market-based models like Merton KMV could be expensive to purchase, but were very responsive to changing market circumstances.

5. CONCLUSIONS

This paper aims to provide a comparison and contrast between two popular types of models which can be used to predict financial distress of firms, including (i) accounting-based models; and (ii) market-based models. From a theoretical perspective, both types of models were developed on the basis of sound finance theory. As such, they can be applied consistently across the countries in principle. However, accounting standards and practices are highly unlikely to be the same across different nations. Therefore, accounting-based models to predict corporate financial distress may fail to provide sensible and consistent outcomes across countries or even across various periods of time. In addition, market-based

models were developed on a set of assumptions which may not be the same across countries. These views are supported by the observation that findings from empirical studies across countries and periods have consistently presented mixed results. Consequently, comprehensive empirical analysis for a particular country or region, and at various periods of time including some structural breaks such as the global financial crisis, is desirable when selecting an appropriate credit model.

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R&D Expenditure Volatility and Stock Return: Adjustment Costs, Earnings Management or Overinvestment-control?

E. Xiang^a, D. Gasbarro^b and W. Ruan^b

^a *School of Business and Law, Edith Cowan University, 270 Joondalup Drive, Joondalup, Western Australia, 6027*

^b *School of Business and Governance, Murdoch University, 90 South Street, Murdoch, Western Australia, 6150*

Corresponding Author's Email Address: e.xiang@ecu.edu.au

Abstract: *A positive relation between the level of R&D expenditure and firm performance has been widely documented; however, changes to this level may incur adjustment costs, arise from earnings management, or reflect the actions of managers attempting to control technocrats overinvesting in value-decreasing projects. Using 4539 publicly listed US firms in the period 1980-2010, we find a significantly negative relation between the volatility of R&D expenditure and stock return. This relation is stronger for young, R&D-increased firms, and during recessionary periods. These results are consistent with managers manipulating earnings, but to smooth, rather than to improve, their firm's reported performance.*

Keywords: *R&D expenditure volatility, Stock return, Earnings management, Adjustment costs, Overinvestment-control*

JEL Classification: G12; M41; O32

1. INTRODUCTION

Research and development (R&D) is seen as critical to a firm's competitive advantage, long-term growth and firm value (Pakes, 1985; Jaffe, 1986; Lev & Sougiannis, 1996; Hall, Jaffe & Trajtenberg, 2005; Li, 2011). A common contention is that R&D expenditures should remain stable over time in order to develop sustainable competitive advantages (Dierckx & Cool, 1989; Kor & Mahoney, 2005), maintain firm performance (Grabowski, 1968), or avoid large adjustment costs (Hambrick, MacMillan & Barbosa, 1983; Swift, 2008; Brown & Petersen, 2011). Implicitly, these arguments suggest that investors should view volatility in R&D expenditures unfavourably.

The detrimental effect of volatility of R&D expenditures on firm value may however arise from firms managing or manipulating their R&D expenditures. Managers may adjust their R&D spending to smooth corporate earnings or may reduce R&D expenditures when earnings fail to meet analysts' forecasts (Elliot, Richardson, Dyckman & Dukes, 1984; Baber, Fairfield & Haggard, 1991; Dechow & Sloan,

1991; Perry & Grinacker, 1994; Bushee, 1998; Degeorge, Patel & Zeckhauser, 1999; Cheng, 2004; Swift, 2008; Xu & Yan, 2013; Tong & Zhang, 2014).

However, an alternative view is that volatility in R&D expenditures enhances firm value by governing entrenchment of management and curtailing overinvestment (Bowman & Hurry, 1993; Gompers, 1995; Neher, 1999; Lovas & Ghoshal, 2000; Swift, 2008). Accordingly, volatile R&D expenditure provides insight into the internal governance and oversight mechanisms for R&D investment decisions.

We argue that managers may: disruptively change R&D expenditures and incur significant adjustment costs (adjustment costs hypothesis), manipulate their earnings by adjusting their R&D expenditures (earnings management hypothesis), and yield to technocrats who wish to maintain stable R&D expenditure (low R&D volatility) at the expense of firm value (overinvestment-control hypothesis).

While a large body of literature has investigated the relation between the level of firm R&D investment and stock return, considerably less attention has been given to the effect of adjustments to R&D expenditure, and therefore volatility in this expenditure, on stock return. Our research aims to fill this gap by investigating the association between stock return and the level and volatility of R&D expenditure, while cognizant of the finding of Li (2011) highlighting to the role of financial constraints. This facilitates an examination of three alternative hypotheses of managerial behaviour that we propose to explain the relation between R&D expenditures and firm value. We contend that managers may: incur significant adjustment costs by altering R&D expenditures, manipulate their earnings by adjusting their R&D expenditures, or allow technocrats to maintain stable R&D expenditures at the expense of firm value. These arguments are consistent with value-decreasing practices that produce lower returns. We contribute to the literature by empirically differentiating between these three explanations and clarifying the role of financial constraints.

To conduct this analysis, we use 4539 listed US firms for the period 1980 and 2010 for which we are able to compute volatility in their expenditure on R&D. Initially, we conduct the baseline multivariate analyses to empirically investigate the impact of R&D expenditure volatility on stock return. Subsequently, we examine the differential effect of R&D volatility on stock return for various partitions of the dataset. We create dichotomous subsamples of: dead and long-lived firms, young and mature firms, periods of expansion and recession, and firms that decrease or increase their R&D expenditures using dummy variable interaction terms.

Our empirical findings indicate that volatility in R&D expenditure is significantly and negatively associated with stock return, and the inclusion of a volatility term increases the explanatory power of the model. This principally supports the argument that changes in R&D are a vehicle that managers can use to manipulate their earnings. R&D manipulation is more serious in dead firms and may also contribute to firm failure. There is a more significant relation between R&D expenditure volatility and stock return amongst young firms, during recessionary periods and for firms that increase their R&D expenditures.

2. DATA & METHODOLOGY

2.1. Sample and data

Our sample is comprised of US listed firms for the period 1980 to 2010. Originally, there are 31,036 firms listed in the US at some time between 1980 and 2010. Then we select firms with the ratios of R&D expense to Sales (R&D) that are less than unity and firms for which we can calculate standard deviations of R&D during the sample period. The resulting sample is 4539 firms. After matching monthly stock return (R) data, the final sample size becomes 703,772 firm-month observations. The main data source is Worldscope from the Datastream platform, which provides the data for most of the variables in this study. Information used for measuring the business cycle is obtained from the website of the National Bureau of Economic Research (NBER). Industry classification is based on Siccodes 5 of the Fama-French industry codes.

2.2. Definition of key variables

Our dependent variable is Stock return (R). Following Li (2011), R is the monthly return in percent, which is calculated using Return Index (RI) from Datastream. Our independent variables are R&D intensity (R&D) and R&D expenditure volatility (R&D_Volatility). Following Lev and Sougiannis (1996, 1999), Chan, Lakonishok, and Sougiannis (2001), Bah and Dumontier (2001), and Eberhart, Maxwell and Siddique (2004), among others, R&D intensity is defined as the ratio of R&D expense to sales. Following Swift (2008), R&D_Volatility is measured using the coefficient of variation and defined as the ratio of the three-year rolling standard deviation of a firm's R&D expenditure to its three-year mean R&D expenditure as follows:

$$R\&D\ volatility = \frac{stddev_i}{mean_i} \quad (1)$$

where $stddev_i$ is the three-year rolling standard deviation of a firm's R&D expenditure, and $mean_i$ is the three-year mean of a firm's R&D expenditure.

A set of control variables is used and they include KZ index (KZ), which is used to measure financial constraints; return on assets (ROA), which is net income divided by total assets at the end of year t-1; natural log of market equity (ln(ME)), which is the natural log of market capitalization at the end of year t-1 and used to measure firm size; natural log of the ratio of book equity to market equity (ln(BE/ME)), which is the natural log of the ratio of book equity to market equity at the end of year t-1 and used to identify whether a firm is under- or over-valued; Momentum, which is the prior six-month returns (with a one-month gap between the holding period and the current month).

2.3. Empirical methodology

Initially, we conduct the baseline multivariate analyses to empirically investigate the impact of R&D expenditure volatility on stock return. Subsequently, we examine the relation by using dummy variable

interaction terms to partition the sample into: dead and long-lived firms, young and mature firms, expansionary and recessionary periods, and R&D-increased and -decreased firms, respectively.

We adapt the Li (2011) and Swift (2008), models by including R&D expenditure volatility and its interaction with financial constraints as follows:

$$R = \beta_0 + \beta_1 R\&D + \beta_2 KZ + \beta_3 R\&D \times KZ + \beta_4 R\&D_Volatility + \beta_5 R\&D_Volatility \times KZ + \beta_6 ROA + \beta_7 \ln(ME) + \beta_8 \ln\left(\frac{BE}{ME}\right) + \beta_9 Momentum + \varepsilon \quad (2)$$

The dependent variable, stock return (R), is the monthly return in percent. R&D intensity (R&D) of the firm is captured by its R&D expense scaled by Sales. R&D expenditure volatility (R&D_Volatility) is measured using the coefficient of variation defined as the ratio of the three-year rolling standard deviation of a firm's R&D expenditure to its three-year mean R&D expenditure. According to the testable hypotheses, we should expect a negative relation between R&D expenditure volatility and stock return if the high adjustment cost or earnings management hypotheses are applicable, while a positive relation would be expected if the overinvestment-control hypothesis applies.

3. RESULTS

3.1. Summary statistics and correlation analysis

Table I summarizes all variables used in our main analyses. Panel A presents the summary statistics for these variables for the entire period from 1980 to 2010, and three subperiods: 1980-1989, 1990-1999 and 2000-2010, and Panel B reports their pair-wise Pearson correlation coefficients. Panel A shows that, for the whole period, the overall average stock return is 1.67% per month. The average R&D intensity as measured by the ratio of R&D expense to sales, is 8.60%, while R&D_Volatility is 26.60%. The mean KZ, which represents the financial constraints, is -0.5509, where index values exceeding 3.5 (-2.8) would place the firm in the top (bottom) quartile of firms facing financial constraints. The average ROA is -2.26%, but the distribution is highly skewed with a median of 5.21%. The subperiod statistics show that while stock return remains stable among the three subperiods, both R&D and R&D_Volatility increase gradually.

The correlation analysis results in Panel B show that stock return is negatively correlated with R&D intensity, R&D_Volatility, and financial constraints. These variables are winsorised at the 1st and 99th percentiles before they are used in subsequent regression analyses.

Table I. Descriptive Statistics of Key Variables

<i>Panel A: Summary statistics of key variables</i>				
	Whole period	1980-1989	1990-1999	2000-2010

Variable	Statistics	N	Values	N	Values	N	Values	N	Values
R	Mean	703772	0.0167	140478	0.0154	243225	0.0200	320069	0.0147
	Median		0.0000		0.0000		0.0000		0.0000
R&D	Mean	592392	0.0860	105432	0.0433	209736	0.0887	277224	0.1001
	Median		0.0439		0.0239		0.0491		0.0542
R&D_Vol	Mean	544476	0.2660	87864	0.1978	180948	0.2385	275664	0.3058
	Median		0.1533		0.1221		0.1440		0.1736
KZ	Mean	497220	-0.5509	25848	-0.6387	207588	-0.4954	263784	-0.5860
	Median		0.0820		-0.1450		0.1555		0.0343
ROA	Mean	619392	-0.0226	111144	0.0703	207312	0.0040	300936	-0.0753
	Median		0.0521		0.0790		0.0576		0.0286
ln(ME)	Mean	605100	11.9248	102060	12.1639	200568	12.0509	302472	11.7605
	Median		11.9226		12.0168		11.9473		11.8503
ln(BE/ME)	Mean	555504	-0.8021	100260	-0.5172	191760	-0.8709	263484	-0.8605
	Median		-0.7180		-0.4474		-0.7942		-0.7871
Momentum	Mean	650348	0.0846	124879	0.1005	224606	0.0895	300863	0.0744
	Median		0.0145		0.0513		0.0234		-0.0092

Panel B: Correlation coefficients

	R&D	R&D_Volatility	KZ	ROA	ln(ME)	ln(BE/ME)	Momentum
R	-0.0100	-0.0022	-0.0033	0.0367	-0.0432	0.0449	-0.0057
R&D		-0.0097	-0.0816	-0.4006	-0.0658	-0.1490	-0.0400
R&D_Volatility			0.1206	-0.3117	-0.3146	-0.0290	-0.0181
KZ				-0.3693	-0.1888	0.0616	-0.0465
ROA					0.3925	0.0204	0.1351
ln(ME)						-0.2551	0.0025
ln(BE/ME)							-0.0505

3.2. Baseline test

Table II summarizes our regression results concerning the impact of R&D expenditure volatility on stock return. We replicate the Li (2011) model and augment it with our R&D_Volatility term in models (1) and (2) respectively. Model (1) shows that both R&D intensity and financial constraints are positively related to stock return. Also, the coefficient for the interaction term, KZ*R&D, is positive and statistically significant. This result is consistent with the findings of Li (2011), and suggests that the positive R&D-return relation is more pronounced in financially constrained firms. That is, financially strapped firms that maintain high R&D expenditures, signal the high quality of their R&D projects. By corollary, high R&D expenditure is more likely to be associated with overinvestment in less financially constrained firms.

In model (2) our baseline model, includes the impact of R&D expenditure volatility. We find a negative relation between R&D_Volatility and return. This relation supports our assertion that R&D volatility is consistent with adjustment costs adversely affecting firm performance, and also consistent with our argument that R&D volatility provides a mechanism through which management can manipulate their

earnings. Conversely, the negative relation does not support the conjecture that R&D volatility is indicative of the actions of managers controlling overinvestment by technocrats. The addition of the R&D_Volatility term in model (2) does not alter the positive relation between KZ*R&D and return seen in model (1). Moreover, the interaction term “KZ*R&D_Volatility” is not significant, indicating that, volatile R&D expenditures are not used to control overinvestment, even when low capital constraints make overinvestment more likely.

Table II. Impact of R&D Volatility on Stock Return (Baseline Test)

Dependent Variable: Stock return (R)	Li (2011) (1)	Baseline model (2)
Intercept	0.04677*** (0.00206)	0.05782*** (0.0030)
R&D	0.03487*** (0.0037)	0.02257*** (0.00403)
KZ	0.00030* (0.00015)	0.00027945 (0.0001976)
KZ*R&D	0.00151* (0.00087)	0.00164* (0.0008946)
R&D_Volatility		-0.00817*** (0.00129)
KZ* R&D_Volatility		-0.00021883 (0.00034701)
ROA	0.02257*** (0.0024)	0.01857*** (0.00255)
ln(ME)	-0.00221*** (0.00017)	-0.0023*** (0.0001842)
ln(BE/ME)	0.00863*** (0.00035)	0.00558*** (0.0003796)
Momentum	0.0023*** (0.00067)	-0.0034*** (0.0006922)
Year	Yes	Yes
Industry	Yes	Yes
Obs.	348,956	334,464
Adj R-Sq	0.0032	0.0162

Note: ***, **, and * indicate the significance at the 0.01, 0.05, and 0.10 level, respectively.

3.3. Further tests

We further explore the relation between R&D volatility and stock return in greater detail by partitioning the sample. We use dummy variables to distinguish: dead and long-lived firms, young and mature firms, expansion and recession periods, and R&D-increased and -decreased firms. We find that the significantly negative relation between the volatility of R&D expenditure and stock return is stronger for young, R&D-increased firms, and during recessionary periods.

3.4. Robustness test

We recognise that there are various ways to measure R&D expenditure volatility. To ensure that our results are robust to alternative definitions of R&D expenditure volatility, we conduct robustness tests using two alternative R&D volatility measures: the residual from a regression with R&D intensity in year t as the dependent variable and R&D intensity in year $t-1$ as the independent variable (Residual) and the absolute value of the proportionate R&D expense's change ($|\Delta R\&D|$). The Residual proxy continues to provide support for hypothesis (H1a) and (H1b), however, the coefficient for the absolute value of the proportionate change in R&D becomes positive but with marginal statistical significance.

4. CONCLUSIONS AND DISCUSSIONS

This paper provides empirical evidence of the impact of R&D expenditure volatility on stock return using a sample of 4539 publicly listed US firms in the period 1980-2010 that we can compute volatility in R&D expenditures. We first conduct the baseline multivariate analyses to investigate the impact of R&D expenditure volatility on stock return. Next, we examine the impact of several dichotomous variables on the R&D expenditure volatility and return relation. Specifically, we consider: dead versus long-lived firms, young versus mature firms, expansionary versus recessionary periods, and R&D-increased versus R&D-decreased firms.

We document several findings. First, our analyses indicate that volatility in R&D expenditures is significantly, negatively associated with stock return. By including the volatility in R&D expenditures, we are able to more fully investigate the role of financial constraints on R&D expenditures. This result is consistent with managers avoiding disruption to the R&D function (adjustment costs hypothesis), but are also consistent with managers manipulating earnings to improve or smooth their firm's reported performance (earnings management hypothesis). However, the negative association is inconsistent with managers succeeding to adjust their R&D expenditure to curtail overinvestment in value-decreasing R&D projects (overinvestment-control hypothesis).

The supplementary tests using dichotomous variables based on firm and market attributes, interacted with the volatility of R&D expenditure are used to gain an insight into the source of the negative relation between R&D expenditure volatility and stock return. We find a stronger negative relation in young and R&D-increased firms, and during recessionary periods. We interpret these results as consistent with our earnings management and adjustment cost hypotheses, but not supportive of the overinvestment-control hypothesis. The stronger negative relation in young firms favours the importance of not disrupting R&D expenditures as the explanation, but is inconsistent with this hypothesis by finding that the disruption effect is less in firms that decrease their R&D expenditures than we would expect. Indeed, the stronger negative relations between R&D expenditure volatility and stock return during recessions and when R&D expenditure is increased are consistent with earnings management, and earnings smoothing in particular, causing an adverse market reaction.

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The Job Embeddedness of Employees in Manufacturing SMES in Central Java, Indonesia

F. Martdianty, A. Coetzer and P. Susomrith

School of Business and Law, Edith Cowan University, 270 Joondalup Drive, Joondalup, Western Australia, 6027

Corresponding Author's Email Address: fmartdia@our.ecu.edu.au

Abstract: *Given the lack of research on job embeddedness in both Indonesia and smaller enterprises, in this study we address the question: 1) How do employees in manufacturing SMEs in Central Java, Indonesia experience job embeddedness? 2) How should JE theory be reconceptualised to better explain employee retention in manufacturing SMEs in Central Java, Indonesia? To address this question, data were collected through semi-structured interviews with 42 employees from 13 manufacturing SMEs in Central Java, Indonesia. Preliminary findings suggest that a distinctive set of SME characteristics and institutional and cultural factors influenced employees' organisational and community embeddedness.*

Keywords: *Job embeddedness, SME, Retention, Indonesia*

JEL Classification: *M12, M54*

1. BACKGROUND AND RATIONALE FOR THE STUDY

Employee turnover is a challenging problem for SMEs as they are often perceived as lacking legitimacy as employers of choice (Williamson, 2000). Legitimacy in this context is a perception that an organisation is desirable, suitable, or an appropriate employer. Prospective employees tend to perceive that large firms have a higher level of legitimacy in that they are more reliable, important, and trustworthy employers than small firms (Williamson, Cable & Aldrich, 2002). A high level of organisational legitimacy signals to employees that employers can fulfil their employment goals relating to factors such as good salary, career advancement, work–life balance, and job security (Williamson et al., 2002). On the other hand, smaller firms confront a potential legitimacy deficit relative to their larger counterparts. For example, formal HR practices and the existence of a HR department in larger firms symbolises an organisation's working conditions to job seekers. As a result, job applicants are likely to perceive large firms more favourably than SMEs (Williamson et al., 2002).

Probably the most obvious disadvantage of working in SMEs is related to compensation. Typically, SMEs pay employees less than the larger firms (Forth, Bewley & Bryson, 2006). SMEs also provide less formal training for their employees, (Jayawarna, Macpherson & Wilson, 2007; Panagiotakopoulos, 2011) and for employees who seek skill development and professional growth, this could be a disadvantage of

working in SMEs. However, skill acquisition still occurs in SMEs by substituting formal training with other forms of development, such as informal on-the-job learning and socialisation processes (Cardon & Stevens, 2004; Chao, 1997).

Retaining qualified workers is important for the economic viability and competitive advantage of the SMEs (Barret & Mayson, 2005; Coetzer, Cameron, Lewis, Massey & Harris, 2007; Kickul, 2001). Employee retention is critical because if SMEs lose their high-quality employees, it will be difficult to replace them with suitable internal talent or recruit from external labour markets (Wagar & Rondeau, 2006). However, there are only few studies which specifically focus on employee retention in SMEs (e.g. Cardon & Stevens, 2004; Wagar & Grant, 2008; Wagar & Rondeau, 2006). This is an indication of a research gap and potential research opportunity to study voluntary employee turnover in the context of SMEs.

The number of SMEs in Indonesia has experienced significant growth over the past decade. In 2005 there were around 47 million SMEs and by 2012 the number had grown by 20% to 56 million SMEs, which provided employment for around 107 million people (BPS, 2012). The manufacturing sector has been the largest contributor to the GDP in Indonesia at 25% on average of the total GDP since the year 2000. Despite the large number of Indonesian SMEs, the life cycle of SMEs is often short and stagnant, especially if the SMEs fail to improve the quality of their human resources (Winarko, 2014). Also, many of the best workers in SMEs move to another company after the first three years, adversely affecting the stability of SMEs (Firdanianty, 2009). To date, there is scant literature regarding employee retention in Indonesian SMEs.

Many researchers have examined the motives for employees leaving (e.g. Allen, Bryant, & Vardaman, 2010), but it is also important to understand why employees choose to remain with an organisation (Holmes, Chapman & Baghurst 2013). To understand why employees stay, Mitchell, Holtom, Lee, Sablynski and Erez (2001) developed the job embeddedness (JE) concept involving three dimensions, namely 'fit', 'links, and 'sacrifice', which are associated with the work environment (organisation embeddedness) and non-work environment (community embeddedness). Organisation embeddedness refers to how an individual becomes enmeshed in the organisation, whereas community embeddedness relates to how a worker develops strong connections to the community.

Mitchell et al. (2001) described fit as employees' perceptions of their compatibility with an organisation and their community. Links is described as formal and informal ties to people and groups within the organisation and community, and it is argued that the greater the numbers of links and the stronger they are, the stronger the attachment to the organisation and community would be (Mitchell et al., 2001). Finally, sacrifice refers to perceived material and psychological costs of leaving a job or community (Mitchell et al., 2001). JE theory argues that the more embedded an individual is in their work organisation and residential community, the less likely it is that the individual will leave his or her job (Mitchell et al., 2001; Zhang, Fried & Griffeth, 2012). JE theory provides a solid theoretical framework

for explaining why employees stay with an organisation by incorporating a wide array of on-the-job and off-the-job forces that influence employee retention (Jiang, Liu, McKay, Lee & Mitchell, 2012).

Although JE shows promise as a retention construct, it is important to note that it was developed and tested in the US and mostly studied in Western countries (e.g. Burton, Holtom, Sablinski, Mitchell & Lee, 2010; Felps et al., 2009). JE's theoretical and empirical implications are encouraging, but the construct is still under development and further research is needed to improve its measurement and conceptualisation (Mitchell et al., 2001; Zhang, Fried & Griffith, 2012). Maertz (2004) contended that national culture has become one of the 'neglected antecedents' in employee turnover models (p.105), and this omission may also be applicable to the JE model (Ramesh & Gelfand, 2010). The United States and many Western countries have individualistic cultures, whereas Indonesia and many Asian countries have collectivistic cultures (Hofstede, Hofstede & Minkov, 2010). Therefore, characteristics differ between the two categories of cultures, such as how people perceive family, express opinions, and behave in the workplace (Hofstede et al., 2010). Ramesh and Gelfand (2010) noted in their study that collectivism influences both organisation and community links. Thus, the cultural context is likely to contribute to varied application of JE theory. Furthermore, JE theory should be modified to be applicable to SMEs due to factors such as their resource paucity and their tendency to employ a narrow range of informal HRM practices (Barrett & Mayson, 2007; Bartram, 2005).

Given that there has been limited JE research in collectivist cultural contexts and Indonesia in particular, and no known research on functioning of JE in SMEs; additional research would be beneficial to make contributions to the SME and JE literatures by exploring the lived experiences of SME employees. Thus, the aim of this study was to advance our understanding of the phenomenon of JE in SMEs through exploring employees' experiences of working in manufacturing SMEs in Central Java, Indonesia. Overall, this study seeks to address the question: 1) How do employees in manufacturing SMEs in Central Java, Indonesia experience job embeddedness? 2) How should JE theory be reconceptualised to better explain employee retention in manufacturing SMEs in Central Java, Indonesia?

2. METHODOLOGY AND PARTICIPANTS

A phenomenological research design was considered the most appropriate design to develop an understanding of the phenomenon of JE in SMEs through exploring employees' experiences of working in manufacturing SMEs in Central Java, Indonesia. In this study, the participants responded to a series of semi-structured questions and provided responses based on their experiences as employees who chose to stay with the SMEs. Phenomenological inquiry was best suited for the current study as the purpose of this study was to explore a phenomenon and to describe several individuals' common or shared experiences of their work and non-work attachments in the SMEs, within the broad framework of the JE construct.

Semi-structured interviews were conducted with 42 employees recruited from 13 manufacturing SMEs in Central Java, Indonesia. Central Java (*Jawa Tengah*) was chosen as the location for data collection because the number of SMEs in the province (60% of total manufacturing SMEs) was higher than any other province in Indonesia (BPS, 2014) and there were many SME clusters in the province (Tambunan, 2008). An interview guide consisting of a set of predetermined broad, open-ended questions was used, with other questions emerging from the dialogue between the researcher and the participants. The participants were interviewed using Bahasa Indonesia, the participants' first language, as this would improve the accuracy of data collected.

The participants comprised twenty-seven males and fifteen females. The average age of participants was 36.2 years ($SD = 9.79$). The majority of participants had achieved a secondary level of formal education, and 7% indicated they had a Bachelor degree. The average tenure of the participants was 8.03 years ($SD = 6.64$).

Data analysis followed the steps recommended by Moustakas (1994), which was a modified version of the Van Kaam method of phenomenological analysis (Moustakas, 1994). The participants' perspectives in regard to their embeddedness to the organisation and community were extensively examined. The verbatim transcripts were number coded and stored in a word processor file for analysis, which was facilitated using the application Nvivo. The analysis involved six steps: (1) listing and preliminary grouping every verbatim expression relevant to the experience; (2) reduction and elimination by determining the unique qualities of an experience that stand out (i.e. invariant constituents); (3) clustering the invariant constituents into themes; (4) constructing individual descriptions of "what" and "how" the participants in the study experienced the phenomenon; (5) developing a composite description of the phenomenon representing the group as a whole (Moustakas, 1994).

3. PRELIMINARY FINDINGS

Eight themes emerged which have strong connections to the dimensions and sub-dimensions of JE. The process of identifying themes involved analysing the transcripts and looking for patterns in the text relating to how employee participants were embedded in their jobs. The themes are reported below. Table 1 (see appendix A) summarises the themes and their connections to JE.

Perception of multiple fit. Participants believed that their sense of compatibility with elements of the work environment (e.g. job, organisation culture, work group) had a significant influence on their attachment to the organisation. The assessment of fit was judged subjectively through the perceptions of the participants, rather than through some formal method of assessing person-organisation fit during employee selection (Kristof, 1996). Therefore, good fit existed as long as it was perceived to exist. There was little evidence that the SMEs used formal and extensive recruitment and selection processes to assess fit between the employees and the organisation. However, some trial and error methods were used to assess fit after employees were hired. For example, job rotation was used to assess person-job fit and a

trial period was employed as part of the selection process to assess person-job and person-organisation fits. Employees seemed to have a high level of tolerance if 'misfit' occurred. Therefore, when these participants experienced 'misfit', they tended to adjust to the situation, rather than leave the SME. For example, if a person perceived the job was not compatible with his/her knowledge, skill, and ability, but perceived a good fit with the organisation culture, workgroup or supervisor, the employee would tolerate the lack of fit with the job.

Links through social relationship and task interdependence. Friendships at work was a key factor in developing employee's attachment to the SME. The quality of the social relationships that the participants had was characterised by strong ties as a result of much time being spent with co-workers in and out of the workplace. Task interdependence also created links between workers. Some participants worked as a part of a team to complete tasks, while others mentioned that their output would be the input for other workers. Therefore, frequent communication between employees was inevitable. However, links that were created from the task interdependence reflect quantity of links, rather than the quality of links.

Perceived social and personal cost in leaving the SME. When the participants were asked about what they would sacrifice if they left the organisation, factors such as career progression and material benefits were rarely mentioned. The SMEs provided few tangible or monetary benefits. Consequently, these employees recalled and emphasised the intangible sacrifices that they would make if they decided to leave their current organisation (e.g. forfeited social ties with co-workers and good relations with the business owner). Employee participants often considered business continuity within the SME clusters in contemplating the decision to stay or leave the SME. Living near the SME clusters made these participants acutely aware of the failure rates of businesses in the surrounding areas.

Proximal location to the workplace. The distance between home and the workplace was considered important for the majority of participants. Most participants reported that they experienced a strong sense of fit with the community where they lived because the factory was located close to their homes. There were three advantages of living near the workplace from the perspective of these participants. First, the time spent commuting to the workplace was short. Second, low transportation costs; this was an important factor because many participants perceived they received a low salary. Third, for some employees, they could still maintain a reasonable balance between work life and family life.

Residential lifestyle. The assessment of fit to community was also based on the subjective perceptions of these participants in relation to characteristics of the place where they lived. Access to a religious community and the other positive attributes of the places where they lived (e.g. unpolluted air, tranquil atmosphere, low cost of living) were dominant factors for these participants. Many participants appeared to be in their 'comfort zone'. Consequently, a potential migration from one town to another was perceived as constituting a major disruption to their daily life.

Strong links to immediate and extended family. The attachment of the participants to the place where they live was shaped by the existence of their immediate and extended family live nearby. Also, the participants commented that they were reluctant to leave the community because they had some family obligations, such as to look after their ageing parents and provide for their parents' welfare. Parents' blessing also influenced participants' decisions to not leave their community or consider a job-related relocation.

Longevity in the community and engagement in community-based activities. Most participants had lived in their community a long time and had developed many attachments there. Many of these participants were born and grew up in the community where they now lived, or in a neighbouring community. Therefore, they had known their neighbours for a long time and they maintained strong relationship to neighbours. Regarding community groups, religious-related activities were often mentioned during the interviews, due to the large Muslim community in the neighbourhood. *Pengajian* (reciting the Qur'an) was the predominant regular community-based event. This event is usually hosted in different homes in the neighbourhood, or held at a mosque once a week. This activity was valued as an opportunity worship to God, but also as an opportunity to bond or *silaturahmi* with neighbours.

The presence of family, the duration of their stay in a particular community, and their involvement in community activities were the main sources of links for the participants. However, attachments to family and the length of their stay in a certain place were much more salient as forms of links when compared to involvement in some community activities. The two first-mentioned sources of links were very personal for these individuals. Therefore, if these links were broken, they could not be easily substituted (e.g. family attachments) or much time and effort would be needed to find substitutes (e.g. bonding with new neighbours and new friends). The community activities (e.g. reciting Quran) were common in many places in Indonesia as the country has a very large number of people of Muslim faith. Therefore, if a person left his/her current neighbourhood, he/she could find similar faith-based community activities as substitutes in many places in Indonesia.

Perceived social and material cost in leaving the residential location. Maintaining good relations with family and friends was an important facet of the participants' social life. Therefore, leaving family and friends were considered to be a major sacrifice to these participants. There was also a tendency to avoid uncertainty, complexities, and the extra costs that would be incurred from home relocation. To some extent, it also seemed that the participants' need for affiliation was higher than their need for achievement. These participants tended to avoid jobs opportunities (or resigning from jobs) that would potentially involve disrupting their current relationships.

4. CONCLUSIONS AND RECOMMENDATION

The preliminary findings suggest that there were several factors which contributed to the employee participants becoming attached to their organisation and communities that do not feature within the original JE construct. These neglected factors need to be considered in assessing JE in small enterprises located in a non-Western cultural context. First, while the original JE construct emphasised quantity of links, the quality of links to workmates and family members were dominant factors for attaching employees to their organisation and community. Second, in the opinion of participants, the organisation-related sacrifices associated with leaving were predominantly intangible benefits (e.g. severing their close ties with co-workers). This was because SMEs in the study typically employed informal HRM practices (e.g. unstructured on-the-job training), offered low wages, and provided few fringe benefits. Third, the findings suggest that proximity to the workplace was a key factor in assessing fit to the community. Finally, the social and material costs were factors considered to be very important by most of the participants when they were contemplating geographical relocation for work purposes. However, none of the aforementioned factors are particularly salient in the original JE construct.

As recommended by Mitchell et al. (2001) in their seminal article, JE theory should be modified and the items comprising its six dimensions reviewed based on accumulated research findings. Consistent with this recommendation, the preliminary findings of the present study suggest that several items should be modified when examining JE in SMEs, and specifically SMEs located in Central Java, Indonesia. Many items in the original construct seem redundant in this context (e.g., 'I can reach my professional goals working for this organisation', 'I feel good about my professional growth and development', 'the benefits are good on this job'). On the other hand, the preliminary findings suggest a need for more salient replacement items, such as items that capture: perceived losses associated with giving up relationships with workmates; the quality of links in the community; and the proximity of home to the workplace.

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Appendix A

Table 1 Themes emerged and the connection to JE

Themes	Dimension	Sub-dimension
Theme 1: Perceptions of multiple fit		Organisation fit
Theme 2: Perceived social relationship and the task interdependence	Organisation embeddedness	Organisation links
Theme 3: Perceived social and personal costs when leaving the SME		Organisation sacrifice
Theme 4: Proximal location of the workplace.		Community fit
Theme 5: Residential lifestyle		
Theme 6: Strong links to immediate and extended family	Community embeddedness	Community links
Theme 7: Longevity in the community and engagement in the community-based activities		
Theme 8: Perceived social and material cost in leaving the residential location		Community sacrifice

Greening Business Cultures

G. Dolva, P. Susomrith and C. Standing

*School of Business and Law, Edith Cowan University, 270 Joondalup Drive, Joondalup, Western
Australia, 6027*

Corresponding Author's Email Address: gdolva@our.ecu.edu.au

Abstract: *This research explores ecocentric sustainability⁶ cultures in small to medium-sized enterprises (SMEs) in Western Australia and when completed will propose a practical framework to facilitate the gradual shift towards such cultures in SMEs. Participants in two preliminary studies demonstrated an understanding of sustainability in relation to the use of resources and waste reduction. Yet, few understood the relevance of and interrelationship between sustainability and nature. This study reflects on these results and describes how they will be explored further.*

Keywords: *Ecocentric, Sustainability, Building capacity, Businesses*

JEL Classification: O35, Q01, Q56

1. INTRODUCTION

To respond to the increasing impacts that anthropomorphic activities have on the health of the ecological processes of the Earth (Morris, 2012) we need to better understand the relationships between people and their environment. In spite of over 50 years effort and the emerging concepts and tools to implement sustainability in organisations by decreasing human impact and protecting the integrity of the Earth's ecosystems, we still face rapid increases in global environmental crises. In many cases, this has occurred because tools and processes that are developed to facilitate sustainability, have rarely considered the impact of activities on ecosystems. Reducing the impact on ecosystems needs to become part of cultures at homes, in communities and at workplaces.

This paper summarises the initial research and explains the next steps necessary for completion. It describes in particular an updated conceptual approach that both reflects recent development in this area and aligns well with the initial approach and preliminary results. In particular, by exploring *ecocentric sustainability* cultures instead of *sustainability* cultures it will contribute to the rapidly changing and growing theoretical and practical field that deals with ecocentric cultures. While the direction has slightly altered because of these changes in the sustainability industry, the aim of this research however, remains the same. Namely to create a capacity-building framework that is transformative and relevant, flexible,

⁶ Sustainability has two opposing viewpoints. *Anthropocentric sustainability* that puts the needs of humans above that of the needs of nature, and *ecocentric sustainability* that states that nature has a value beyond its utility to humans; that all things connect to each other and that for all systems to survive, the health and integrity of the ecosphere within which they all exist is a priority.

self-organising and uses existing and future resources, tools and approaches effectively. By updating the approach this research also support new key environmental sustainability and cultural themes of the 2030 Agenda for Sustainable Development by the United Nations (United Nations, 25 September 2015), Federal Government (Australian Government, Department of Industry, Innovation and Science, Office of Chief Economist, 2015) and state (Small Business Development Corporation, 2015; Department of Environment Regulation, 2016) government.

When implementing sustainability into a business, the size of the business (Stubblefield, Loucks, Martens & Cho, 2010; Newell & Moore, 2010; Walker, Redmond & Giles 2010) and influences from the owner-managers' motivations and daily challenges (Williams & Schaefer, 2013) need to be taken into account. This is particularly the case in small to medium sized enterprises. In Australia, about 97% of all business are small to medium-sized enterprises (SMEs). Of these, 62% employ between 2 and 19 staff, which represents around 37% of the workforce and contributes almost 36% of financial value to The Australian economy (Australian Government, The Treasury, 2016, September 23) and other values to society (Nicholls & Orsmond, 2015). SMEs therefore represent a large part of Australian society and need special attention to meet their needs for change. SMEs also deal with operational challenges differently to larger businesses. In particular, they tend to be less able to respond to fluctuations in demand, changing costs, management, using available resources or strategic planning than larger businesses (Nicholls & Orsmond, 2015) and regulations than larger businesses (Australian Government, Department of Industry, Innovation and Science, Office of Chief Economist, 2015).

It was not surprising that the initial research found that barriers to integration of sustainability in SMEs by employees and employers in Perth were mainly associated with lack of leadership, governance, time and financial factors (Dolva, 2016). In this paper, some additional preliminary results are presented and discussed and the next stage of the research is described.

2. NEW CONCEPTUAL APPROACH

The new approach used to structure and develop the next stage of this research evolved out of recent development in the field of anthro-ecology (Ellis, 2015; Liu, Liu, Yang, Chen & Ulgiati, 2016) and evolution of ecocentric sustainability cultures (Waring, et al., 2015). Although exploring how ecological systems reflect social and economic systems is not new; emerging approaches (Waring, et al., 2015; Ellis, 2015; Liu et al., 2016) that consider culture as the *genetics* of social phenomena that link social theories with ecological theories are however, new. These explore how environmental sustainability cultures and behaviour (social theories) can evolve (ecological, evolutionary, resilience theories) with authors such as Waring et al. (2015), Ellis (2015) and Liu et al. (2016) suggesting such approaches have value in developing collaborative solutions to complex and dynamic environmental dilemmas (Waring, et al., 2015). In his approach, Waring et al. (2015) seek to understand the *genetics* or dynamic relationships between traits, in this case cultures, and the settings and selective forces that affects those cultures as well as identifying options for change. Such an in-depth approach when focused on ecocentric

cultures has the potential to generate results that make it possible to embed changes in existing cultures so that changes become more transformative, relevant, valuable, effective and strategic. It makes sense to approach ecocentric sustainability transformation in such a cross-disciplinary way because social and economic systems are after all, embedded within ecological systems in nature.

By using the emerging theories of Waring et al (2015), Ellis (2015) and Liu *et al* (2015) this research also tests the practical use of these theories, and by adopting a learner focus (Dartely-Baah & Amposah-Twiah, 2011; Sarabdeen, 2013) can therefore be used to develop a framework that assists developing ecocentric sustainability cultures in organisations. The conceptual framework that describes Waring's et al. (2015) proposed framework, with *ecocentric sustainability* as the focal trait is illustrated in Figure 1. The three main steps in Waring's et al. (2015) framework that explores the evolution of cultural traits formed the updated research questions and conceptual framework (Figure 1). Concepts of ecocentric sustainability where human systems are described as embedded in ecological systems (Ellis, 2015; Liu et al., 2015) were also used to develop the questions.

The research questions to continue to explore the evolution of *ecocentric sustainability* cultures are;

1. What is the ecocentric sustainability **culture** of people employed in the business?
2. What forces **influence** ecocentric sustainability at the business?
3. What internal and external **options** are available and how are they **selected**?
4. How can ecocentric sustainability be integrated into the business?

The data from open-ended questions will be transcribed into NVivo and sorted by identifying emerging themes that will be coded into logical nodes and sub-nodes for analysis. All preliminary and new data will then be explored for emerging patterns and relationships, compared to the discussion of the emerging theories of authors described above and used to create a capacity-building framework. Such a framework has the potential to speed up the adoption of green cultures in SMEs in Western Australia and therefore address the associated challenges faced in Western Australia. In addition, by testing emerging theories in the area of ecocentric sustainability it adds value to the research community.

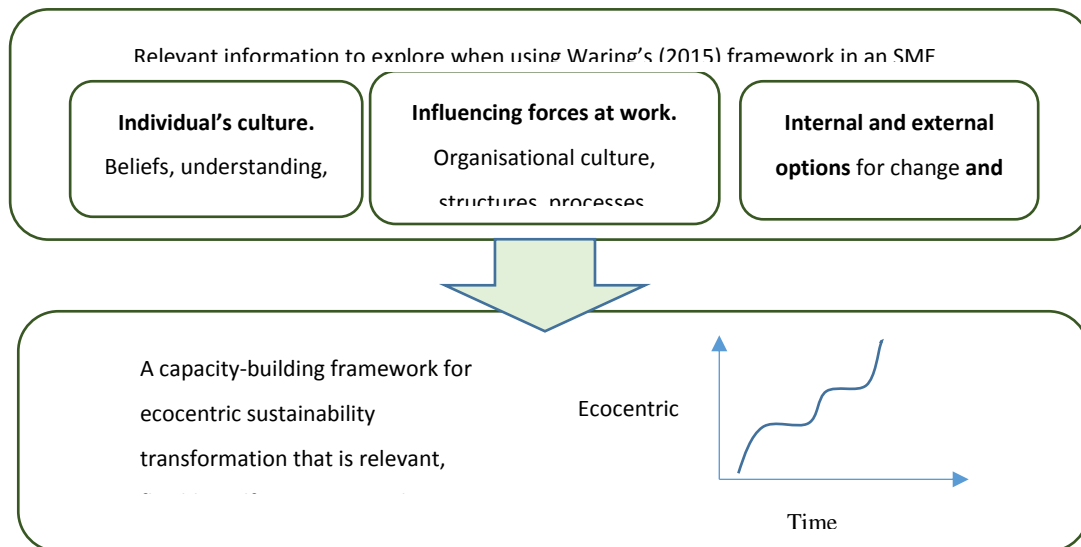


Figure 1. Conceptual research framework using Waring's et al. (2015) approach to explore and develop ecocentric sustainability in SMEs, Western Australia.

3. DATA & METHODOLOGY

3.1. Preliminary results

Two preliminary studies have been completed. Dolva (2016) has published one of these that involved 21 interviews, while the second used an online survey (using Qualtrics) and summarised below, will be published in 2017. This online survey was developed with the purpose of collecting additional and confirmatory data that could be analysed qualitatively with open-ended questions as well as quantitatively with questions that required respondents to rate or select answers. Participants for both studies owned or worked in small to medium sized businesses in Perth. They were approached face to face, by phone or email. For the interviews, over 150 individuals and for the survey over 300 (who did not contribute to the interviews) were contacted to take part in these studies. Those who declined to participate in these studies generally mentioned that they did not have time, felt they could not contribute or were not interested in the topic.

The questions used in the online survey which are relevant to the new conceptual approach for this research are listed below.

What does sustainably mean to you? This question used an open comment box.

Where and when have you heard or found out about it? This question used an open comment box.

What sort of tools, processes or activities does your workplace use to become more sustainable?
What do you think it should or could use or do? These questions used sliding scales with lists of tools and processes.

What are some barriers you think prevents your workplace using these? This question used an open comment box.

And

What sort of benefits or trade-offs could occur if your workplace adopted sustainability concepts, ideas or activities? This question used an open comment box.

4. RESULTS

The results from this preliminary survey (n = 37 responses) together with the description of the development of the final research framework are summarised below.

What does sustainability mean to you?

Findings include themes such as waste and recycling (31 comments), long-term thinking (22 comments) and use terms that relate to natural systems (19 comments), economic and social systems (16 comments each). Less mentioned themes and terms are those that relate to environmental justice or ethics (8 comments), peace and equity (6 comments), the role of politics (4 comments), environmental conservation and democracy (2 comments each).

Where and when have you heard or found out about it?

Most people heard or read about sustainability at work (9) or from the media (7). Others found out from other (cannot recall) (6), family or friends (5), school (3), a workshop (3), university (2) or college (1).

What sort of tools, processes or activities does your workplace use to become more sustainable?

What do you think it should or could use or do?

This question gave participants lists of tools and processes to choose from on a sliding scale, and they selected between 15 and 32 items in total from the two lists (List 1 = what have you used? And – List 2 = what should/could you use?). While conclusions are difficult to draw from this sample size, the results reveal some interesting trends. For example, trends show that while few had used sustainability tools or processes (30% of respondents); participants were on average (51%) interested in doing so in the future. Those who have used tools or processes in the past or knew about them were also slightly more interested in using them in the future (Pearson's $r=0.5334$). In particular, re-using local government staff (Pearson's

r=0.9586), private consultants (Pearson's $r=0.9244$), environmental management systems⁷ (Pearson's $r=0.8295$), completing environmental impact assessments⁸ (Pearson's $r=0.8089$) or using other sustainability indices or tools (Pearson's $r=0.8320$). In addition, to learn more, they prefer to have access to informal non-commitment type workshops (62%, in particular short workshops = 50%), school and educational providers (62%), online resources (62%) and tools such as Corporate Social Responsibility (61%), Environmental Management Systems (59%) and Environmental Impact Assessments (59%).

What are some barriers you think prevents your workplace using these? And

What sort of benefits or trade-offs could occur if your workplace adopted sustainability concepts, ideas or activities?

There were 48 comments indicated the participants thought sustainability was beneficial, compared to 22 that did not. Most reported that the biggest barrier was financial (13 comments) with few commenting on the impacts on efficiencies (2), changes to work practices (2), more constraints (2), reduced production (1) or vehicle use (1). Most saw benefits particularly in leadership, branding and marketing (18 combined), healthier communities and workplaces (9), less waste and resource use (8), financial (7), ethical (4), environmental protection (1) and productivity (1). Additional insights suggested that the larger the organisation the more likely they were to use tools and attend training. Moreover, those that used sustainability practices said that it was also something that individuals did, rather than something that is part of how things are done in the business. Others commented that changes to marketing and leadership might offset this in the future.

5. CONCLUSIONS AND RECOMMENDATIONS

The data revealed that participants understood the meaning of sustainability, but were unclear how it related to environmental issues or how it could transfer into actions in their workplaces. In particular, into actions that extended beyond the technical management of waste and resource reduction activities. However, a number of participant's comments illustrate knowledge or awareness of how sustainability can be achieved using management systems or impact assessments. It was also interesting to find that those people who responded to the online survey also identified more benefits than barriers to adopting sustainability practices. Sustainability was also an individual's effort rather than driven by the business itself. An additional interesting finding was that those who knew more about sustainability through tertiary education were less happy about how it was done at work. So perhaps, ignorance is indeed blissful.

⁷ An Environmental Management System is a management document that uses the ISO14000 series of standards to develop processes that assist organisations reduce their impacts on environments for the longer term.

⁸ An Environmental Impact Assessment is a government driven risk assessment process that requires organisations to consider the risks to the environment and how to mitigate these when planning development or other proposals that are likely to impact on nature.

Respondents to the online survey also revealed slightly different results to those from the initial interviews (Dolva, 2016). In particular, respondents to the online survey seemed to *know* and *do* more with sustainability than the interviewed participants (Dolva, 2016), which may indicate that people using online resources may be more aware and involved with sustainability than others. Or did they simply search online for ‘answers’? Additionally the answers to some other survey questions revealed that people *knew* more than they *did*, which suggests that transfer of knowledge and awareness into actions rather than development of knowledge (through education or after searching for answers online?) may be one of the main issues. Moreover, the reasons given by those who did not participate in either the interviews or the survey also suggested potential barriers to engagement. In particular that time, lack of interest in the topic and the feeling that they may not be able to contribute.

Although some of the results from the preliminary interviews and survey were not clear and appeared contradictory, they clearly pointed towards answers to the main theme that dealt with the concept of ecocentric sustainability cultures and their adoption by SMEs. Therefore, while the initial interviews and online survey revealed valuable initial insights, some of these now need further clarification through a next stage. This stage will use semi-structured in depth interviews which is more suitable than online surveys when exploring emerging cultural themes at the grassroots level. Such an exploratory, grounded theory approach is particularly suited to studies of new ideas, where there is a lack of data or when a fresh perspective is needed (Rowley, 2002; Driscoll & Lindenmayer, 2012) to describe the hows and whys of contemporary social phenomena. The development of ecocentric sustainability cultures is just such a social phenomenon.

The third stage of this research that uses Waring’s et al (2015) framework will now link *ecocentric sustainability* cultures with anthro-ecology (Ellis, 2015) using a new approach to confirm and provide answers to remaining questions in this research (Figure 1). This stage will involve conducting a minimum of 30 in-depth semi structured interviews within two different industries. The two industries that will be involved are the construction and café industries in Perth, Western Australia. Both offer familiar and essential services to society yet differ in their ability to change and adapt, all of which makes them suitable yet contrasting industry examples to use for this stage of the study.

There are more construction SMEs than any other industry group in Western Australia (Small Business Development Corporation, 2015) and they face common challenges when trying to deal with reducing environmental impacts (Tassicker, Rahnamayiezekavat & Sutrisna, 2016). Particularly in the production and management of waste and their position in supply chains as consumers of manufactured goods (Nasir, et al., 2016; Ruparathna & Hewage, 2015), workplace culture (Norton et al., 2015) and uncertainly with costs (Qian, Chan & Khalid, 2015). In contrast the café industry that is very much part of Australian social cultures, can and often does integrate activities that reduce their environmental impacts (Moskwa, Higgins-Desbiolles & Gifford, 2015). Because both of these industries are common in Australian society and contrast in their ability and adoption of sustainability, they are likely to provide

sufficiently different insights for this study and lead to outcomes that may generate solutions that can be available to a broader range of industries.

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What Drives Corporate Sustainability Disclosures Made by Chinese Listed Companies?

J. Zhang and H. Djajadikerta

*School of Business and Law, Edith Cowan University, 270 Joondalup Drive, Joondalup, Western
Australia, 6027*

Corresponding Author's Email Address: jzhang@ecu.edu.au

Abstract: *This study examines the determinants of corporate sustainability disclosures (CSD) made by the listed firms in China, and how the CSD users perceived this form of disclosures. More precisely, we developed an instrument that provide an exploratory empirical view on how the listed sustainability performance indicators listed on GRI are differently perceived in China from what was intended by GRI. Based on this approach, we investigate in-depth and examined driving forces for the listed firm to issue CSD. The empirical results indicated that while Legitimacy Theory and Stakeholder Theory partially explained the quality of CSD, Signalling Theory was not supported.*

Keywords: *Corporate sustainability reporting/disclosures, China, GRI, Users' perception of CSD*

JEL Classification: M41

1. INTRODUCTION

The economy and development of China over decades has achieved not only its national prosperity, but also a significant degree of concern about corporate sustainability. As a vehicle of communication to the society, corporate sustainability disclosures (CSD) are considered as the most effective and efficient way, which facilitates the empowerment and acknowledgement of stakeholders in the quest and understanding of sustainability (Qian, Gao & Tsang, 2015). Due to the lack of comprehensive and enforcing CSD regulations, the growth of corporate sustainability practices extensively depend on voluntary disclosure practice (Zhang, Djajadikerta & Zhang, 2015) A few theoretical frameworks were consequently invoked to predict the motivations for the management in China to issue CSD; however, much research has investigated the influential factors of CSD based on the theories and the standards developed from the Western contexts and economy, and very limited research focused on the driving forces created by cultural and social-political influence (Shan & Taylor, 2014).

1.1. The influence of Chinese culture on CSD

Corporate sustainability disclosure is heavily influenced by both external and internal environmental factors of a nation. Hofstede (1980) defines culture as a collective mental programming, which has been indicated as a factor that significantly affects the corporate reporting in a country. Qu and Leung (2006) indicated that companies being profitable while maintaining sustainability are directly influenced by an

old Chinese paradox of being rich and generous. Under commodity economic market, culture differences have made different perceptions between the West and the East. Wang and Juslin (2009) found that the Western concepts do not adapt well to the Chinese market, because they have rarely defined the primary reason for corporate sustainability. The etic approach to the corporate sustainability concept does not take the Chinese reality and culture into consideration. However, Confucianism and Taoism, which emphasize the “cultivation of virtue and morality, as well as the core of its harmony notion is the harmonious society” (Wang & Juslin, 2009, p. 446), offer a better understanding of corporate sustainability in the Chinese context.

1.2. The influence of ownership structure on CSD in China

The divergence of corporate governance can influence and determine CSD practices due to the differences in political, social and environmental backgrounds among nations (Wang, Zhou, Lei & Fan, 2016). As defined by Wang et al. (2016), this form of ownership structure is used as an important mechanism by the ultimate owners to separate their cash flow ownership from their control rights in order to receiving more benefit from control rights. Subsequently, CSD reporting provide signals to the stakeholders at different layers of the structure in regards to companies’ sustainability performance, thereby reducing the degree of information asymmetry between stakeholders and corporate management (Wang et al., 2016). However, the degree of influence of this form of ownership structure differs in different contexts. A large number of listed companies in China around 63.15% are controlled by the state government, either directly occupying share of more than 80% or indirectly subsidized (Wang et al., 2016). The state owned pyramidal structure is essentially to decentralize control rights over the firms to firm management instead of selling shares. In comparison, privately owned firms or foreign owned firms are to discharge their external financing constraints by creating internal capital markets (Fan & Wong, 2002). Consequently, ownership structure is one of the most important factor to consider when study CSD in China.

1.3. Literature and hypotheses

This study integrates Legitimacy Theory and Stakeholder Theory from a social-political perspective to examine the driving forces of CSD, as well as Signalling Theory, which is from an economic-based perspective.

Legitimacy Theory

Legitimacy Theory has long been thought to be explanatory when investigating the quality of corporate suitability (Chauvey, Giordano-Spring, Cho & Pattern, 2015). Prior studies on corporate disclosures have shown evidence of companies voluntarily disclosing information in annual reports as a strategy to manage their legitimacy (Hutchings & Taylor, 2000; Taylor & Shan, 2007). Legitimacy Theory assumes that economic, environmental and social information are closely bonded with, and in response to corporate sustainable factors and the information legitimizes management and its activities (Cho,

Michelon, Pattern & Roberts, 2015). Legitimacy Theory is significant and relevant for the research to apply in the Chinese context, because there is an inseparable relationship between the state government and companies that create important social roles for the stated-owned firm (Zu & Song, 2009). Consequently, the following hypotheses were developed under Legitimacy Theory:

H1: the quality of corporate sustainability disclosures of Chinese listed companies is positively related to industry type

H2: the quality of corporate sustainability disclosures of Chinese listed companies is positively related to company location.

H3: the quality of corporate sustainability disclosures of Chinese listed companies is positively related to firm age.

Stakeholder Theory

Strategic posture is particularly concerned in this study because it concerns how actively the response of an entity's key decision maker regards to social activity (Chiu & Wang, 2015). Recently in China, firm value was considered to be linked with stakeholders, and there have been increasing concerns with stakeholder value since the 1980s. Stakeholder Theory is also often applied when analysing the relationships between the levels of CSD and financial performance (Li & Zhang, 2010). According to Chu, Chatterjee and Brown (2013), one of the effective ways to ensure firm value maximization is to increase the future return. This can be satisfied firstly by issuing voluntary social and environmental responsibility disclosure. It was found that a firms' higher level of corporate sustainability creates positive value to stakeholders and builds sound public image (Chu, Chatterjee & Brown, 2013). Also, corporate ownership plays importance role showing stakeholder posture towards CSD practices (Shan & Taylor, 2014). Due to the discussion above, the following hypotheses were developed under Stakeholder Theory:

H4: the quality of corporate sustainability disclosures of Chinese listed companies is positively related to government ownership

H5: the quality of corporate sustainability disclosures of Chinese listed companies is positively related to legal-person ownership.

H6: the quality of corporate sustainability disclosures of Chinese listed companies is positively related to foreign ownership.

Signalling Theory

In Signalling Theory, information obtained from the management level is exceedingly more accurate and reliable than from the market. Investors, therefore, seek information transparency through corporate sustainability information; without it, they cannot respond quickly enough to make rational decisions about the most effective investment (Shan & Taylor, 2014). As a result, market resources are not allocated efficiently. Signalling Theory delivers the most reliable and valuable information to investors, because it suggests companies to disclose information that is unknown by the market (Yeh, Kou & Yu, 2011). In

order to signal the stakeholders of the companies, the follow proxies:

H7: the quality of corporate environmental disclosure of Chinese listed companies is positively related to financial performance.

H8: the quality of corporate sustainability disclosures of Chinese listed companies is positively related to charitable donation.

Control variables

Two control variables, firm size and leverage are set based on Legitimacy theory. These variables are set as control variables because there is potential collinearity with the other independent variables.

H9: the quality of corporate sustainability disclosures of Chinese listed companies is positively related to firm size.

H10: the quality of corporate sustainability disclosures of Chinese listed companies is positively related to leverage.

2. DATA & METHODOLOGY

2.1. Sample and Data Collection

A sample of 238 companies listed at the top of HeXun Social Responsibility Ranking Order were selected and their stand-alone corporate sustainability reported were collected from ShenZhen Stock Exchange (SZE) database. Financial data of the sample companies were extracted from their annual reports, which were collected from the CNinfo database.

2.2. Dependent Variable

Global Reporting Initiative (GRI) has been always adopted to measure the quality of CSD by Chinese researchers due to its significance of its broad range of stakeholder approaches (Brown, Jong & Lessidrenska, 2009). However, Drori, Meyer and Wang (2006) and Vigneau, Humphreys and Moon (2015) indicated that GRI is mostly presented by multinational companies on the global basis, and international accounting firms have large influence on standardizing the guidelines. Due to the drawback of GRI a, an instrument is developed to examine the quality of CSD made by the Chinese listed companies based on the report users' perceived importance of corporate sustainability and the performance indicators listed in GRI. The instrument is shown in Appendix A. The qualitative score of CSD is measured by the presentation of an item listed in the coding instrument. If an item was present, it is further scored on an ordinal scale based on the perceived quality of the disclosures with scores ranging from poor 1 to excellent 5 (see Appendix B). If not, a score of 0 was given. The scores achieved in each section is then multiplied by CSD perceptions index, which is developed from the design of the instrument, and it measures how importantly the report users perceived it.

2.3. Research model

Based on the hypotheses shown in this paper and existing literature studies, the regression model investigated empirically are shown as follows:

$$\begin{aligned} \text{CSD}_{\text{quality}} = & \beta_0 + \beta_1 \text{IND} + \beta_2 \text{AREA} + \beta_3 \text{AGE} + \beta_4 \text{GOWN} + \beta_5 \text{LOWN} + \beta_6 \text{FOWN} \\ & + \beta_7 \text{PERF} + \beta_8 \text{CSE} + \beta_9 \text{SIZE} + \beta_{10} \text{LEV} + \varepsilon_i \end{aligned}$$

A list of description of the independent variables are shown in Appendix C.

3. RESULTS

3.1. Descriptive statistics

The descriptive statistics in Appendix D shows profiles of the dependent variable, the independent and control variables. The dependent variable $\text{CSD}_{\text{quality}}$, and two control variables and one independent variable SIZE, LEV and CSE are not normally distributed, and are transformed by natural Logarithm.

In terms of the independent variables, the average firm age is quite high, suggesting that most of the firm ranked in Hexun are old companies with longer societal existence. For corporate sustainability expenditure, the variation is fairly large, suggesting that while some companies contributed significantly in corporate sustainability, the others may not participate so actively. This variation may influence the lesser extent of CSR practice. Also, performance measured by return on equity suggests that the sample companies were still capable of making profit for the equity holders during the financial hard time and transitional period of 2013. Data collected is normally distributed after transformation, and multicollinearity test was undertaken before the regression analysis. Appendix E shows that result from multicollinearity test. Overall, no serious multicollinearity problem shown in the independent variables. The data is then examined by the OLS regressions analysis.

3.2. Regression analysis and findings

Appendix E provides the results of the regression analysis. It shows that the R^2 is 0.113 and 0.081, which barely passed the critical value of multiple r squared of 0.06 when F equals to 2.887 and 2.511 for the models with and without the control variables respectively (Tabachnick & Fidell, 2007). Therefore the regression model is significant, and it suggests that the statistically significant components of the dependent variable are explained by the variation of the independent variables.

Hypotheses 1, 2 and 3 are developed based on Legitimacy Theory, and the proxies are industry classification, company location and company age. The results in Appendix F supported only for the second proxy that companies operating in the economic stable regions tends to influenced by their duty to fulfil obligations for the political and financial objectives, thereby to comply with what the society requires and expects (Wang, 2007). However, the results do not support industry classification and firm age. Most aged listed firm in China were owned by the government and the tight control from the governing body can manage their CSD practice. With regards IND, we suggest that as our dependent

variables measures the integrated quality of economic, social and environmental information in corporate sustainability, in which industry classification might not be significant. A set of guidelines were published by the Chinese National Environmental Protection Agency in 2011, and many companies in the high profile industries would choose to disclose environmental information in order to alleviate the government's concerns. However, many of these firm were still reluctant to disclosure social information in their CSD.

Hypotheses 4, 5 and 6 are based on Stakeholder Theory where firm's ownership structure is particularly considered to represent corporate strategic posture. Foreign ownership was found strongly significant in the regression analysis, and it is explained by theory that foreign joint ventures in the Chinese stock exchanges are more politically visible and subject to more public scrutiny in China. Political costs may potentially be reduced if companies with foreign ownership are politically visible and transparent. Statistically significance was not found in hypotheses 4 and 6. Statistical insignificance of LOWN can be explained by the interest between the legal person ownership and the other investors. Li and Zhang (2010) indicated that that inappropriate transactions to expropriate benefits at the expense of the minority for the legal person party was always considered. It is very likely that the controlling shareholder would divert wealth over mechanism such as inter-corporate loans, and in long-run, neglecting the disclosures of corporate sustainability. With regards GOWN, although not statistical significant is obtained, a potential association between GOWN and the quality of CSD was detected. The explanation is that in the context of the Chinese unique political background, encouragement from the government policies often has more influence to the listed companies, as they are more likely to follow the encouragement from the government in the consideration of stakeholder power from the theoretical perspective. However, for state owned enterprise, showing their sustainability practices in CSD increases only on the richness of disclosures. It does not grant extra credit from the government but additional cost of preparing such disclosures are generated (Zhou, 2005). This explains why the results from the regression model showed that a potential negative correlation between the quality of CSD and the government ownership of a company. Overall, the results showed very limited evidence about government owned firm, and this is because of the state-owned companies were under the pressure from the government as a pioneer to provide advanced quality of CSD as well CSD behaviour.

Hypothesis 7 and 8 are based on Signalling Theory based on the Western perspective, in which performance and corporate sustainability expenditure are proxies to reflect corporate operating risk. The results in Appendix E do not support and therefore, Signalling Theory is not supported. We suggest that the context of company's performance proxies is such that during the economic downturn in 2013, management was motivated to signal their success and quality by issuing disclosures regarding financial performance. However, as suggested by Tam (2002), potentially the minority of shareholder pursue the tendency of short-term profit and are more willing to see information only about companies' financial performance. Due to the continuous down turn in China's equity market in 2013, economic demands of corporate information was more of social demands.

In regards to control variables, first, company total asset is strongly significant based on Legitimacy Theory, showing that large firms were more likely to issue high quality CSD; however, similarly to the Western context, these large firms were mostly owned by the state-government, and the tendency is explained because of potential political costs that they face without issuing corporate sustainability information. As indicated in previous section, SIZE has binary linear relationship with many independent variables, suggesting that large foreign owned companies operating in the tier one regions in China are mostly like to generate high quality of CSD. The second control variable, leverage, was not found significant in the analysis but a potential negative relationship was detected. Shen and Shu (2009) indicated that China has most highly levered firm across Asia preliminary due to monetary policy, high-saving rate and over-confidence. Due to this reason, it is not surprising that while some highly leveraged firm reduced the extent of corporate sustainability report, the other tried to conform the encouragement from the governing body as they are directly or indirectly controlled.

4. CONCLUSIONS

The purpose of this study was to examine the driving forces of CSD based on the report users' perceived importance of corporate sustainability and GRI. The empirical results indicated that while Legitimacy Theory and Stakeholder Theory partially explained the quality of CSD, Signalling Theory was not supported. Overall, firm size, company location and foreign ownership were found strongly significant. Although significance was not found in government ownership and leverage, potential negative associations were detected in the analysis. The other variables developed from the theoretical frameworks were not support and they have no impact on the quality of CSD.

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APPENDIX A

Research instrument

Code	Category/indicator	CSD type	CSD perceptions index (CSDPI)	Score of quality by CSDPI
	Economic performance		4	
EC1	direct economic value generated and distributed	Economic	4	
EC2	financial implications and other risks and opportunities for the organisation's activities due to climate change	Economic	4	
EC3	coverage of the organisation's defined benefit plan obligation	Economic	4	
EC4	financial assistance received from government	Economic	4	
	Market presence		3.87	
EC5	ratios of standard entry level wage by gender compared to local minimum wage at significant locations of operation	Economic	3.87	
EC6	Policy, practices, and proportion of spending on locally-based suppliers at significant locations of operation	Economic	3.87	
EC7	proportion of senior management hired from the local community at significant locations of operation	Economic	3.87	
	Indirect economic impacts		3.69	
EC8	development and impact of infrastructure investments and services supported;	Economic	3.69	
EC9	significant indirect economic impacts, including the extent of impacts	Economic	3.69	
	Procurement practices		3.64	
EC10	proportion of spending on local suppliers at significant location of operation	Economic	3.64	
	Additional questions		4	
AQ1	CPI of employees	Economic	4	
AQ2	spending regarding unemployed/retired workers	Economic	4	

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Research instrument

Code	Category/indicator	CSD type	CSD perceptions index (CSDPI)	Score of quality by CSDPI
	Material usage		4	
EN1	Material used by weight or volume	Environmental	4	
EN2	percentage of materials used are from recycled materials	Environmental	4	
	Energy		4.2	
EN3	Direct energy consumption by primary energy	Environmental	4.2	
EN4	Indirect energy consumption by primary	Environmental	4.2	
EN5	Energy saved due to conservation and efficiency improvements	Environmental	4.2	
EN6	Initiatives to provide energy-efficient or renewable energy based products and services, and reductions in energy requirements as a result of these initiatives	Environmental	4.2	

EN7	Initiatives to reduce indirect energy consumption and reductions achieved.	Environmental	4.2	
	Water		4.51	
EN8	Total water withdrawal by source	Environmental	4.51	
EN9	Water sources significantly affected by withdrawal of water	Environmental	4.51	
EN10	Percentage and total volume of water recycled and reused	Environmental	4.51	
	Biodiversity		4	
EN11	Location and size of land owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	Environmental	4	
EN12	Description of significant impacts of activities, products and services on bio diversity in protected areas and areas of high biodiversity value outside protected areas	Environmental	4	
EN13	Habitats protected or restored	Environmental	4	
EN14	Strategies, current actions, and future plans for managing impacts on biodiversity	Environmental	4	

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Research instrument

Code	Category/indicator	CSD type	CSD perceptions index (CSDPI)	Score of quality by CSDPI
EN15	Number of IUCN red list species and national conservation list species with habitats in areas affected by operations, by level of extinction risk	Environmental	4	
	Emissions		4.46	
EN16	Total direct and indirect greenhouse gas emissions by weight	Environmental	4.46	
EN17	Other relevant indirect greenhouse gas emissions by weight	Environmental	4.46	
EN18	Initiatives to reduce greenhouse gas emissions and reductions achieved	Environmental	4.46	
EN19	Emissions of ozone-depleting substance by weight	Environmental	4.46	
EN20	NO, SO and other significant air emissions by type and weight	Environmental	4.46	
	Effluents and waste		4.48	
EN21	Total water discharge by quality and destination	Environmental	4.48	
EN22	Total weight of waste by type and disposal method	Environmental	4.48	
EN23	Total number and volume of significant spills	Environmental	4.48	
EN24	Weight of transported, imported, exported, or treated waste deemed hazardous under the terms of the Basel Convention Annex I, II, III, and VIII, and percentage of transported waste shipped internationally	Environmental	4.48	
EN25	Identity, size, protected status and biodiversity value of water bodies and related habitats significantly affected by the reporting organisation's discharges of water and runoff.	Environmental	4.48	
	Products and services		4	

EN26	Initiatives to mitigate environmental impacts of products and services and extent of impact mitigation	Environmental	4	
EN27	Percentage of products sold and their packaging materials that are reclaimed by category	Environmental	4	

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Research instrument

Code	Category/indicator	CSD type	CSD perceptions index (CSDPI)	Score of quality by CSDPI
	Compliance		4.35	
EN28	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations	Environmental	4.35	
	Transport		4	
EN29	Significant environmental impacts of transporting products and other goods and materials used for the organisation's operations, and transporting members of the workforce.	Environmental	4	
	Overall		4	
EN30	Total environmental protection expenditures and investments by type	Environmental	4	
	Supplier Environment Assessment		4	
EN31	Percentage of new suppliers that were screened using environmental criteria; significant potential negative environmental impacts in the supply chain and actions taken.	Environmental	4	
	Environmental grievance mechanisms		4	
EN32	number of grievances about environmental impacts filed, addressed, and resolved through formal grievance mechanism	Environmental	4	
	Additional questions		4	
AQ3	Pollution and waste by technical issues	Environmental	4	
AQ4	Overall environmental influence	Environmental	4	
	Labour practice and decent work			
	Employment		3.86	
LA1	total workforce by employment type, employment contract and region, broken down by gender	Social	3.86	
LA2	total number and rate of new employee hires and employee turnover by age group, gender, and region	Social	3.86	
LA3	benefits provided to full-time employees that are not provided to temporary or part-time employees, by significant locations of operations	Social	3.86	

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Research instrument

Code	Category/indicator	CSD type	CSD perceptions index (CSDPI)	Score of quality by CSDPI
LA15	return to work and retention rates after parental leave by gender	Social	3.86	
	Labour/management relations		4	
LA4	percentage of employees covered by collective bargaining agreements	Social	4	
LA5	minimum notice periods regarding operational changes, including whether it is specified in collective agreements	Social	4	
	Occupational health and safety		4.22	
LA6	percentage of total workforce represented in formal joint management – worker health and safety committees that help monitor and advise on occupational health and safety programs	Social	4.22	
LA7	rates of injury, occupational diseases, lost days and absenteeism, and total number of work-related fatalities, by region and by gender	Social	4.22	
LA8	education, training, counselling, prevention, and risk-control programs in place to assist workforce members, their families, or community members regarding serious diseases	Social	4.22	
LA9	health and safety topics covered in formal agreements with trade unions	Social	4.22	
	Training and education		4	
LA10	average hours of training per employee by gender, and by employee category	Social	4	
LA11	programs for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings	Social	4	
LA12	percentage of employees receiving regular performance and career development reviews, by gender	Social	4	

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Research instrument

Code	Category/indicator	CSD type	CSD perceptions index (CSDPI)	Score of quality by CSDPI
	Diversity and equal opportunity		3.81	
LA13	composition of governance bodies and breakdown of employees per employee category according to gender, age group, minority group membership, and other indicators of diversity	Social	3.81	
	Equal remuneration for women and men		4	
LA14	ratio of basic salary and remuneration of women to men by employee category, by significant locations of operation	Social	4	
	Additional question		4	

AQ5	Sexism	Social	4	
	Human rights			
	Investment and procurement practices		3.79	
HR1	percentage and total number of significant investment agreements and contracts that include clauses incorporating human rights concerns, or that have undergone human rights screening	Social	3.79	
HR2	Percentage of significant suppliers, contractors, and other business partners that have undergone human rights screening, and actions taken.	Social	3.79	
HR3	Total hours of employee training on policies and procedures concerning aspects of human rights that are relevant to operations, including the percentage of employees trained	Social	3.79	
	Non-discrimination		3.84	
HR4	total number of incidents of discrimination and corrective actions taken	Social	3.84	

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Research instrument

Code	Category/indicator	CSD type	CSD perceptions index (CSDPI)	Score of quality by CSDPI
	Freedom of association and collective bargaining		3.81	
HR5	operations and significant suppliers identified in which the right to exercise freedom of association and collective bargaining may be violated or at significant risk, and actions taken to support these rights	Social	3.81	
	Child labour		4.16	
HR6	operations and significant suppliers identified as having significant risk for incidents of forced or compulsory labour, and measures to contribute to the elimination of all forms of forced or compulsory labour	Social	4.16	
	Forced and compulsory labour		4	
HR7	Operations and significant suppliers identified as having significant risk for incidents of forced or compulsory labour, and measures to contribute to the elimination of all forms of forced or compulsory labour	Social	4	
	Security practices		4.16	
HR8	percentage of security personnel trained in the organisation's policies or procedures concerning aspects of human rights that are relevant to operations	Social	4.16	
	Indigenous rights		3.81	
HR9	total number of incidents of violations involving rights of indigenous people and actions taken	Social	3.81	
	Assessment		3.78	
HR10	number of grievances related to human rights filed, addressed and resolved through formal grievance mechanisms	Social	3.78	

	Supplier human rights assessment		3.62	
HR11	Supplier human rights assessment	Social	3.62	

APPENDIX A

Research instrument

Code	Category/indicator	CSD type	CSD perceptions index (CSDPI)	Score of quality by CSDPI
	Human rights grievance mechanisms		3.78	
HR12	Human rights grievance mechanisms	Social	3.78	
	Society			
	Local communities		3.76	
SO1	percentage of operations with implemented local community engagement, impact assessments and development programs	Social	3.76	
SO9	Operations with significant potential or actual negative impacts on local communities	Social	3.76	
SO10	prevention and mitigation measures implemented in operations with significant potential or actual negative impacts on local communities	Social	3.76	
	Anti-corruption		4	
SO2	percentage and total number of business units analysed for risks related to corruption	Social	4	
SO3	percentage of employees trained in organisation's anti-corruption policies and procedures;	Social	4	
SO4	actions taken in response to incidents of corruption	Social	4	
	Public policy		3.81	
SO5	public policy positions and participation in public policy development and lobbying	Social	3.81	
SO6	total value of financial and in-kind contributions to political parties, politicians, and related institutions by country	Social	3.81	
	Anti-competitive behaviour		3.88	
SO7	total number of legal actions for anti-competitive behaviour, anti-trust and monopoly practices and their outcomes	Social	3.88	

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Research instrument

Code	Category/indicator	CSD type	CSD perceptions index (CSDPI)	Score of quality by CSDPI
	Compliance		4.16	
SO8	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with laws and regulations	Social	4.16	
SO11	Supplier assessment for impact on society	Social	3.71	
SO12	Grievance mechanism for impact on society	Social	4	
	Product responsibility			
	Customer health and safety		4.36	
PR1	life cycle stages in which health and safety	Social	4.36	

	impacts of products and services are assessed for improvement, and percentage of significant products and services categories subject to such procedures			
PR2	total number of incidents of non-compliance with regulations and voluntary codes concerning health and safety impacts of products and services during their life cycle, by type of outcomes	Social	4.36	
	Product and service labelling		4	
PR3	type of product and service information required by procedures, and percentage of significant products and services subject to such information requirements	Social	4	
PR4	total number of incidents of non-compliance with regulations and voluntary codes concerning product and service information and labelling, by type of outcomes	Social	4	
PR5	practices related to customer satisfaction, including results of surveys measuring customer satisfaction	Social	4	
	Marking communications		3.83	
PR6	programs for adherence to laws, standards, and voluntary codes related to marketing communications, including advertising promotion and sponsorship	Social	3.83	

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Research instrument

Code	Category/indicator	CSD type	CSD perceptions index (CSDPI)	Score of quality by CSDPI
PR7	total number of incidents of non-compliance with regulations and voluntary codes concerning marketing communications, including advertising, promotion and sponsorship by type of outcomes	Social	3.83	
	Customer privacy		4.31	
PR8	total number of substantiated complaints regarding breaches of customer privacy and losses of customer data	Social	4.31	
	Compliance		4.25	
PR9	Monetary value of significant fines for compliance with laws and regulations concerning the provision and use of products and services	Social	4.25	

APPENDIX B

Likert-type scale

Ordinal Scale	Description
5	Separate statement in section of corporate sustainability; which must include the following items: mission; goals; and performance targets in specific concise; understandable; and realistic terminology. All items must have measureable/quantitative dimensions and a given time frame.
4	As per 5; but deficient in one significant item.
3	General and specific; some breadth; and including only some significant measurement
2	Lacking any significant measurement
1	Brief; incomplete
0	Omitted

APPENDIX C

Independent variables

Independent variables	Proxies	Definition
IND	H1d: industry type	Whether a company is in a high profile industry
AREA	H2d: company location	Whether a company is located in an economic developed area
AGE	H3d: firm age	Years a company has been listed
GOWN	H4d: government ownership	Percentage of shares owned by the government
LOWN	H5d: legal-person ownership	Whether the legal person of a company is a board member
FOWN	H6d: foreign ownership	Percentage shares owned by foreign companies
PERF	H7d: performance	ROE
CSE	H8d: charitable donation	Donation made to charities
Control variables		
SIZE	H9d: firm size (control variable)	Total asset
LEV	H10d: leverage (control variable)	Debt to equity ratio

APPENDIX D

Descriptive statistics

Sample period	2013				
Variable	Mean	Median	Std. Deviation	Skewness	Kurtosis
CSD_{Quality}	196.79	136.46	168.82	1.60	2.91
IND	0.21	0.00	0.41	1.43	0.05
AREA	0.41	0.00	0.49	0.36	-1.89
AGE	13.52	14	5.92	0.00	-1.20
GOWN	0.28	0.29	0.26	0.22	-1.42
LOWN	0.68	1.00	0.47	-0.76	-1.44
FOWN	0.54	0.00	0.13	3.04	10.38
PERF	0.12	0.11	0.68	0.938	0.958
CSE	4221907.84	1008596.5	8940606.37	3.797	16.01
SIZE	2.36E11	1.22E10	1.407E12	8.818	83.277
LEV	2.03	1.13	2.99	3.28	11.09
Ln(CSD_{Quality})	4.93	4.91	0.87	-0.12	-0.59
Ln(CSE)	13.69	13.82	2.08	-0.59	0.48
Ln(SIZE)	23.38	23.22	1.79	1.153	2.024
Ln(LEV)	0.07	0.12	1.12	0.03	0.19

APPENDIX E

Test of multicollinearity

		IND	AREA	AGE	GOWN	LOWN	FOWN	PERF	LN(CSE)	LN(SIZE)	LN(LEV)
IND	Pearson Correlation	1									
	Sig. (1-tailed)										
AREA	Pearson Correlation	-0.03	1								
	Sig. (1-tailed)	0.31									
AGE	Pearson Correlation	-0.01	0.12*	1							
	Sig. (1-tailed)	0.42	0.04								
GOWN	Pearson Correlation	0.09	0.13*	0.06	1						
	Sig. (1-tailed)	0.78	0.02	0.18							
LOWN	Pearson Correlation	0.05	-0.04	0.02	-0.32**	1					
	Sig. (1-tailed)	0.23	0.26	0.37	0.00						
FOWN	Pearson Correlation	-0.08	0.03	-0.02	-0.04	-0.03	1				
	Sig. (1-tailed)	0.11	0.3	0.41	0.26	0.33					
PERF	Pearson Correlation	-0.06	0.09	0.018	-0.02	-0.03	-0.01	1			
	Sig. (1-tailed)	0.19	0.09	0.39	0.40	0.35	0.42				
LN(CSE)	Pearson Correlation	0.06	0.01	0.01	0.00	-0.02	0.01	0.18**	1		
	Sig. (1-tailed)	1.18	0.45	0.45	0.50	0.38	0.42	0.00			
LN(SIZE)	Pearson Correlation	-0.09	0.36**	0.134*	0.39**	-0.14*	0.19**	0.12**	0.33**	1	
	Sig. (1-tailed)	0.09	0.00	0.02	0.00	0.01	0.00	0.03	0.00		
LN(LEV)	Pearson Correlation	-0.14*	0.27**	0.28**	0.29**	-0.14*	0.09	0.023	0.17**	0.70**	1
	Sig. (1-tailed)	0.16	0.00	0.00	0.00	0.02	0.08	0.36	0.00	0.00	

*Correlation is significant at the 0.05 level (1-tailed)

**Correlation is significant at the 0.01 level (1-tailed)

APPENDIX F

Multiple regressions models

Results for multiple regressions for corporate sustainability disclosures by CSD perceptions index WITH the control variables

Model			R²	F	Sig. (1-tailed)		
WCSD			0.113	2.887	0.002		
Variable	Hypothesis number	Expected sign	B	Beta	T	Sig. (1-tailed)	(1-tailed)
Constant	N/A	N/A	1.786	N/A	1.659	0.098	
IND	H1	+	0.204	0.096	1.485	0.139	
AREA	H2	+	0.209	0.118	1.746	0.082*	
AGE	H3	+	0.007	0.048	0.734	0.464	
GOWN	H4	+	-0.152	-0.045	-0.608	0.544	
LOWN	H5	+	0.034	0.018	0.276	0.783	
FOWN	H6	+	0.848	0.122	1.882	0.061*	
PERF	H7	+	0.104	0.008	0.125	0.900	
LN(CSE)	H8	+	-0.006	-0.013	-0.195	0.846	
LN(SIZE)	H9	+	0.127	0.261	2.541	0.012**	
LN(LEV)	H10	+	-0.036	-0.046	-0.500	0.618	

*Note: N = 238; *p < 0.1; ***p < 0.01*

Results for multiple regressions for corporate sustainability disclosures by CSD perceptions index WITHOUT the control variables

Model			R²	F	Sig. (1-tailed)		
WCSD			0.081	2.511	0.012		
Variable	Hypothesis number	Expected sign	B	Beta	T	Sig. (1-tailed)	(1-tailed)
Constant			4.140		10.135	0.000	
IND	H1	+	0.156	0.073	1.137	0.257	
AREA	H2	+	0.324	0.183	2.837	0.005***	
AGE	H3	+	0.008	0.058	0.901	0.368	
GOWN	H4	+	0.134	0.039	0.581	0.562	
LOWN	H5	+	0.038	0.021	0.307	0.759	
FOWN	H6	+	1.160	0.167	2.620	0.009***	
PERF	H7	+	0.254	0.020	0.304	0.761	
LN(CSE)	H8	+	0.026	0.062	0.952	0.342	

*Note: N = 238; ***p < 0.01*

Integrated Reporting and Firm Performance: A Research Framework

K. Appiagyei, H. Djajadikerta and E. Xiang

School of Business and Law, Edith Cowan University, 270 Joondalup Drive, Joondalup, Western Australia, 6027

Corresponding Author's Email Address: kappiagy@our.ecu.edu.au

Abstract: *Far from being a combination of the conventional financial information with social and environmental disclosures in one report, integrated reporting (IR) is evolving as the next corporate reporting paradigm to meet the needs of stakeholders. Drawing samples from the Johannesburg Stock Exchange (JSE) and the Australian Stock Exchange (ASX), this study proposes a framework to analyse and compare the quality of integrated reporting between a mandatory and voluntary setting. In addition, the framework proposed can be tested to make a business case for the adoption of IR by examining the relationship between IR and firm performance.*

Keywords: *Integrated reporting, Firm performance, Framework*

JEL Classification: *M41*

1. INTRODUCTION

Stakeholders demand for more information especially in the non-financial section of corporate reporting has increased after the financial crisis (Velte & Stawinoga, 2016). In response to this call, organisations have increasingly been involved in the provision of voluntary non-financial information as part of their corporate reporting. Additionally, concerns of the impact of organisations activities on the society, call for greater accountability, and the inception of publication of separate environmental reports has led to an increase in social and environmental reporting (Bhimani, Silvola & Sivabalan, 2016). As noted by Thorne, Mahoney and Manetti (2014), reporting on the social and environmental impact of organisations activities is increasing despite the cost involved in producing such information. Moving from merely providing social and environmental disclosures in the annual report to the provision of standalone reports (de Villiers, Rinaldi & Unerman, 2014), there have been criticism on the link between the financial report and sustainability (social and environmental) reports (e.g. Robertson & Samy, 2015). Integrated reporting (IR) appears to present the opportunity to establish the link between the financial, social and environmental information of organisations (Reuter & Messner, 2015). Far from just being a combination of the conventional financial information with social and environmental disclosures in one report, integrated reporting involves a “concise communication about an organisation’s strategy, governance, performance and prospects, in the context of its external environment, leading to the creation of value over the short, medium and long term” (IIRC, 2013, p. 7).

The concept of IR has recently attracted the attention of academics and practitioners (Velte & Stawinoga, 2016), and the discussion on the benefits and ability to meet the needs of stakeholders is still on-going. However, despite IR gaining prominence, research of the concept is empirically scarce (Robertson & Samy, 2015), with most of them either focused on a single country (see Lee & Yeo, 2016; Serafeim, 2015; Robertson & Samy, 2015; Setia et al., 2015; Ahmed Haji & Anifowose, 2016; Higgins, Stubbs, & Love, 2014) or worldwide sample (see Jensen & Berg, 2012; García-Sánchez, Rodríguez-Ariza & Frías-Aceituno, 2013; Lai, Melloni & Stacchezzini, 2016; Frias-Aceituno, Rodríguez-Ariza & Garcia-Sánchez, 2014; Churet & Eccles, 2014; Maniora, 2015) with little comparison of the concept between a voluntary and mandatory setting. Since IR is largely voluntary with the exception of South Africa (where firms on

the Johannesburg Stock Exchange (JSE) report on “apply or explain basis”), this study seeks to compare the quality of IR in South Africa and Australia. The choice of Australia as a voluntary setting for the comparison is motivated by the fact that stakeholders such as investors have demanded for extensive disclosure on sustainability issues to the extent that 68% of shareholder voice the need for mandating sustainability disclosures (de Villiers & van Staden, 2011). Thus, firms in Australia have enough incentive to voluntarily engage in IR to meet the demands of stakeholders. Moreover, there have been calls for more systematic research approach to IR to help inform the business case for IR (Simnett & Huggins, 2015). A probable outcome of IR is that organisations are likely to benefit from “integrated thinking”, thus organisations can have a better understanding of the link between their value drivers and strategic goals (Simnett & Huggins, 2015). In addition, pilot programme entities are revealing significant cost savings (IIRC, 2013f). As a result, this study also seeks to examine the association between IR quality and the performance of firms considering the effect of the regulatory setting.

This study will contribute to the existing literature in two significant ways. Firstly, this study will contribute to existing knowledge by providing evidence on the difference in quality of IR between a mandatory and voluntary setting. Thus, the findings from the study will enhance the debate on the need to either mandate IR or continue its application within a voluntary environment. Furthermore, prior research focuses on single countries or uses worldwide samples with little comparison of the concept of IR between different regulatory context (see Lee & Yeo, 2016; Serafeim, 2015; Lai, Melloni & Stacchezzini, 2016; Churet & Eccles, 2014; Maniora, 2015). This study will add to literature by comparing IR in different regulatory contexts. Secondly, in terms of practical contributions, this study will make significant contribution towards the business case of IR by examining the relationship between IR and firm profitability over time from different regulatory settings. In advancing the global acceptance of IR there are calls for research to provide information to justify the adoption of IR by businesses. By examining the relationship between IR and profitability from different regulatory context, the study responds to the call of providing information on the business case for IR (Simnett & Huggins, 2015).

The remainder of the paper is organized as follows. The next section highlights the development of IR and how it can be used to meet the demands and interest of various stakeholders. Arguments for mandating information disclosure are briefly discussed to provide a context for studying IR in different regulatory environments. The research methodology and sampling process of the study is then described followed by a discussion of the current empirical results in IR research as well as the expected results of the study. The final section summarises the research framework and concludes.

2. LITERATURE REVIEW

The development of IR has been motivated by two principal ideas; provision of additional information to investors to aid their valuation of firms’ future performance and the ability of management to respond to the changing needs of stakeholders regarding social responsibility (Haller & Staden, 2014). These principal original drivers of IR has not changed substantially considering the purpose of IR in its development. The Integrated Reporting Committee (IRC) of South Africa provides that the purpose of IR is to “enable stakeholders to assess the ability of an organisation to create and sustain value over the short, medium and long-term” (IRC, 2011, p. 3). Hence, IR does not only benefit shareholders but rather stakeholders such as employees, local communities, legislators and customers also find it beneficial (Lee & Yeo, 2016; Eccles & Krzus, 2014). Since the IIRC prioritisation of the information needs of investors in its IR agenda (Baboukardos & Rimmel, 2016), there have been criticisms on the purpose of IR serving the needs of stakeholders and focus on sustainability with its emphasis on value to investors (Milne & Gray, 2013; Brown & Dillard, 2014; Flower, 2015). However, Setia, Abhayawansa, Joshi and Huynh (2015) posit that in as much as the value creation over time remains the focus of firms in IR, sustainability performance of firms will be an integral part of an integrated report. In addition, sustainability goals are

advanced as there is a shift in financial capital from short-term to long-term investment horizon (Tweedie & Martinov-Bennie, 2015).

From the forgoing, it is evident that firms' engagement in IR can be explained by the stakeholder theory. Freeman, Wicks and Parmar (2004) provide that the application of stakeholder theory is embedded in two main ideas. First, stakeholder theory enables the firm to achieve good performance by helping managers identify the purpose of the firm. Primarily, firms exist to create value for its shareholders. This assertion is not different from the primary purpose of IR in providing information about value creation for capital providers (investors). Secondly, the stakeholder theory pushes managers to determine the relationship they want to create with stakeholders within their environment in order to fulfil the purpose of the organisation. Thus, although shareholders and profits are critical, they become outputs rather than drivers in the process of creating value (Freeman, Wicks & Parmar, 2004). Similarly, aside creating value for shareholders (investors), IR also seeks to advance sustainability and meet the demands of various stakeholders (Setia et al., 2015; Tweedie & Martinov-Bennie, 2015; Eccles & Krzus, 2010). Thus, "the financial report is intended for financial capital providers, but the integrated report is intended for multiple aspects of capital providers (i.e. stakeholders)" Abeysekera (2013, p. 236). In summary, the stakeholder theory posits that firms and managers need to consider the interest of all groups that are affected or can affect their activities (Freeman, 1994) in their value creation process. Hence, in an attempt to create value for shareholders, firms should be concerned about providing goods or services that will satisfy their customers, show concern for employees, suppliers and the community in order to avoid regulation (Freeman, Wicks & Parmar, 2004). Moreover, it should be noted that the focus of IR on capital providers (investors) does not inhibit the application of the stakeholder theory since investors are themselves stakeholders.

Disclosure of information may be the result of demand by regulatory bodies. This type of information disclosure is regarded as mandatory and firms are expected to comply or face some sanctions. Such forms of information disclosure are usually specified (Karim, Islam & Chowdhury, 1998). However, regulatory bodies demand for increased non-financial information disclosure have intensified after the corporate scandals and fraud (Cole & Jones, 2005). Arguments for mandating information disclosure are based on either the view of accounting information being a public good (Watts & Zimmerman, 1986; Beaver, 1998) or the view of the need for redistribution of wealth in the information environment (Healy & Palepu, 2001). As a public good, accounting information may be under-produced in the absence of regulation and can affect the efficiency of the capital markets (Healy & Palepu, 2001). Also, since managers consider the cost and benefits in information disclosure (Hossain & Hammami, 2009), in the absence of regulation, there will be an information gap between informed managers and the uninformed stakeholders. In contrast to mandatory information disclosure which is a regulatory requirement, any other information which is beyond the requirement is voluntary disclosure (Healy & Palepu, 2001). Hence managers exercise discretion on voluntary disclosure by considering the costs and the benefits involved (Abeysekera, 2013). In addition, prior literature find that voluntary disclosure can be used by management as either a complement to mandatory disclosure (Tasker, 1998) or a substitute (Bagnoli & Watts, 2007). Generally, financial information provided in the annual report to meet the needs of shareholders are specified by accounting standards and a country's companies Act (Abeysekera, 2013). However, reporting non-financial information is largely voluntary. According to Ioannou and Serafeim (2014), voluntary reporting of social and environmental information may be used by firms to make claims about social and environmental performance that has not been met. Hence, mandating such disclosure could motivate firms to perform better in their socio-environmental activities, although some firms may incur higher costs which can affect shareholder value. Currently, IR is largely voluntary although there have been calls to mandate sustainability reporting by investors in the UK, USA and Australia. Academics such as Mervyn King, and Eccles and Krzus (2010) have made calls for mandating IR. Proponents of IR, although it is still largely voluntary, believe that it has some benefits such as improving firms reputation, systems and processes, resource allocation decisions, and profitability (Higgins, Stubbs, & Love, 2014).

3. DATA & METHODOLOGY

3.1. Sample and data source

This study will sample companies listed on the Johannesburg Stock Exchange (JSE) and the Australian Stock Exchange (ASX). The corporate reports of the selected companies from 2012 to 2015 will be the main source of data. The corporate reports are retrieved from the websites of the companies.

3.2. Content analysis

Most archival research on disclosure have used content analysis (see Ahmed Haji & Anifowose, 2016; Lee & Yeo, 2016; Setia et al., 2015; Robertson & Samy, 2015). Following these existing studies, this study intends to analyse the content of the integrated reports of firms in South Africa and Australia from 2012 to 2015. In doing this, the coding scheme (checklist) developed by Setia et al. (2015) will be used (see Appendix A). This coding scheme is made up of 37 disclosure items from four capital categories; human, intellectual, natural, social and relationship capital, which was developed from the definitions of capitals provided by the IIRC and relevant literature. This scheme is adopted because it does not depict the IR practices of a particular geographical context since it relies on the explanations of the IIRC. Scoring of the quality of integrated reports is performed using a weighted index (see Ahmed Haji & Anifowose, 2016). The scoring scheme requires that “0” is assigned where the item in the checklist is not disclosed, “1” assigned for general disclosure, “2” for specific information and “3” for detailed discussion. Thus the quality integrated reporting (QIR) score is computed as the ratio of actual score to maximum score.

3.3. Model specification

To address the first objective, a two sample t-test and Mann–Whitney U test will be used to test the difference in the mean and median, respectively, of QIR scores for the companies from South Africa and Australia. Any significant difference could mean that the regulatory context has an influence on the quality of integrated reports produced. Thus arguments could be made for or against mandating IR. The second objective will be achieved by estimating a regression model as follows:

$$Perf_{it} = \beta_0 + \beta_1 QIR_{it} + \beta_2 QIR_{it} * Reg_{it} + \beta_3 Age_{it} + \beta_4 Size_{it} + \beta_5 Ind_{it} + \beta_6 Reg_{it} + \mu_{it} \quad (1)$$

where subscript *i* refers to firm *i* and subscript *t* refers to year *t*.

Firm performance (*Perf*) is measured by sales growth and earnings per share. We determine Quality of integrated report (*QIR*) as the ratio of actual score to maximum score based on the adopted IR index. Firm age (*Age*) is measured by the age of the firm since incorporation. Firm size (*Size*) is measured by the natural logarithm of total assets. Industry (*Ind*) is represented by the industry in which the firm operates and the Regulatory environment (*Reg*) is a dummy variable; 1 for mandatory, 0 otherwise.

4. RESULTS

Prior empirical research on the extent of IR has been limited to South Africa due to the mandatory regime in the country. Evidence on the extent of IR in Australia has been limited with studies in the area focusing on case studies and surveys (see Stubbs & Higgins, 2014; Stubbs, Higgins, Milne & Hems, 2014; Higgins, Stubbs, & Love, 2014). Stubbs et al. (2014) interview Australian investors in an attempt to examine the improvement in business reporting with the application of IR. Higgins, Stubbs and Love (2014) interview the managers of early adopting Australian firms to examine how they contribute to the institutionalisation of IR. They find that the information environment in Australia has not been significantly affected by IR. Stubbs and Higgins (2014) used semi-structured interviews with

organisations in Australia to determine whether IR is leading to changes in the internal processes and structures of reporting in organisations. They find little evidence to support any radical change to reporting and disclosure processes for adopting firms. The findings from some empirical research in South Africa about the implication of IR provides a direction for the expected results of the study. Ahmed Haji and Anifowose (2016) examine the trend in IR following mandating IR for firms on JSE. They assert that although there is an improvement in the quality of IR practice following the regulation, most IR practices of the firms are ceremonial. Similarly, Setia et al. (2015) find that firms in South Africa report more non-financial information after the regulation of IR. In a market-based study, Lee and Yeo (2016) examine the association between IR and firm valuation after the regulation of IR in South Africa. They conclude that the benefits of IR exceed the costs as a positive relationship is established between IR and firm valuation. In addition, they find evidence to suggest that firms that have high IR perform better than firms with low IR on the market. Following from the prior studies, it is expected that there should be a significant difference between the quality of IR in South Africa and Australia since the reporting requirement in these two contexts are different. With IR being mandated in South Africa, firms may provide IR that are only to satisfy regulatory requirement. Thus there may be questions about the quality of IR in South Africa. However, the voluntary environment in Australia could mean that firms that engage in IR may have different motivations leading to more quality IR. Additionally, it is expected that the benefits that may be associated with integrated reporting through the promotion of “integrated thinking” within organisations and the associated cost savings should lead to improved firm performance. Thus we expect a positive significant relationship between QIR and firm performance (Perf).

5. CONCLUSIONS AND RECOMMENDATIONS

Following the increased demand for firms to consider the interest of other stakeholders in their value creation process, the corporate reporting environment has evolved from the provision of separate financial reports and social and environmental (sustainability) reports which were not linked. The new reporting paradigm which is being proposed as integrated reporting presents an opportunity for firms to establish a link between the conventional financial report and the social and environmental disclosures in one report. Although IR has been mandated for firms on the JSE, many other securities regulatory agencies are yet to follow the example of South Africa. At best, some regulatory bodies are encouraging large firms to voluntarily issue integrated reports since it is expected to yield some desired benefits. This study leans on the stakeholder theory to examine the quality of IR in two different regulatory context; South Africa (mandatory setting) and Australia (voluntary setting) using the disclosure index provided by Setia et al. (2015). In making a business case for IR, the study uses the top 20 companies from JSE and ASX to examine the relationship between the quality of integrated reports and firm performance. It is expected that a significant difference exist between the quality of IR in South Africa and Australia since the regulatory setting is different. Additionally, the anticipated benefits of IR to firms in the short, medium and long-term should lead to a significant positive relationship between firm performance and quality IR. This study will extend the empirical literature on the extent of IR application in two different countries with different regulatory settings of IR. The findings from the study will inform policy makers better on their decision of regulating IR. Future studies may replicate the study by comparing IR of other voluntary countries to that of South Africa since the results from our study may not be generalised for other countries.

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APPENDICES

APPENDIX A: Coding Scheme (adopted from Setia, Abhayawansa, Joshi and Huynh (2015))

<p>Disclosure items Panel A: human capital</p> <p>Employee competence and capabilities Employee experience Employee loyalty and motivation Employee diversity Employee morale Human resource management Employee benefits Human resource development</p>
<p>Panel B: natural capital</p> <p>Use of and impact on land resources Use of and impact on atmospheric resources Use of and impact on water resources</p>
<p>Panel C: social and relational capital</p> <p>Customer health safety and privacy Customer satisfaction Relations with competitors (e.g. anticompetitive behaviour) Relations with suppliers Relations with lenders Relations with shareholders Human rights Indigenous rights Involvement in social action Social investment Donations and charitable work Involvement in cultural projects Relations with legislators, regulators and policy makers Relations with business partners Corporate culture Claims and lawsuits Relations with employees</p>
<p>Panel D: intellectual capital</p> <p>Corporate governance Intellectual property Information technology and information systems Research and development Processes, policies and procedures Organisational structure Brands Corporate image Market share</p>

Exploring Visitor Meanings at a Heritage Setting: A Means-End Approach

K. Esfandiar^a, and J. Bapiri^b

^a*School of Business and Law, Edith Cowan University, 270 Joondalup Drive, Joondalup, Western Australia, 6027*

^b*Faculty of Management, Allameh Tabataba'i University, Dehkadeh-ye-Olympic, Tehran, Tehran Province, Iran*

Corresponding Author's Email Address: k.esfandiar@ecu.edu.au

Abstract: *Historical sites are often reminded of some events, which are sensitive to visitors and thus challenging to manage. In response to this challenge, this research focuses on understanding the complexity of the interrelationships amongst visitors, sense of place, and interest in interpretation at a heritage setting. Implementing means-end chain (MEC) approach, Sa'dabad cultural complex in Iran, as the focus of the current study was investigated and the meanings that visitors assigned to the heritage site were revealed in a total of five primary clusters of meanings including (1) aesthetics (2) identity (3) nostalgia (4) luxury and splendour, and (5) power.*

Keywords: Heritage sites, Values, Means-end chain.

1. INTRODUCTION

Visiting cultural heritage sites is on the rise among both domestic and international tourists (Halewood & Hannam, 2001's; Waitt, 2000). This type of tourism as one of the largest and fastest growing tourism sectors worldwide (Poria, Biran & Reichel, 2009) is now turning into a key driver of socio-economic progress which supports culture and helps renew tourism within the context of sustainable development (Benjamin, Kline, Alderman & Hoggard, 2015; Richards, 1996). Countries therefore need to study on how to best foster heritage tourism in their own context. This is particularly vital in developing countries including Iran enjoying great heritage resources thanks to its ancient and multicultural background such that twenty one cultural heritage properties on the World Heritage list belong to this country, the most of anywhere in the Middle East and the third in Asia (UNESCO, 2016)⁹.

The majority of heritage tourism research today on the supply side focuses largely on interpretation and resource management, and on the demand side focuses more on motivations of visitors (Fyall et al., 2003; Leask & Fyall, 2006; Shackley, 2001; Poria et al., 2003 cited from Timothy & Boyd, 2006). Yet, to understand the dynamics of heritage tourism between both demand and supply sides, the concept 'sense of place', has to be taken into consideration (Poria, Butler, & Airey, 2003; Timothy & Boyd, 2003). Sense of place is defined as symbolic and subjective meanings ascribed to a setting (Stedman, 2003). In this paper, we define it as personal meanings attributed to the heritage site by visitors. According to Liin, Morgan and Coble (2012), investigating heritage sites is incomplete without considering meanings given to the site by visitors. More specifically, historic heritage sites carry a wide array of meanings for different groups of visitors, bringing conflict and difficulty with providing onsite interpretive programs. Apostolakis (2003), argued that historical heritage sites are often reminded of some events, which are sensitive to visitors, and thus challenging. The reason is that the various meanings of heritage sites are rooted in cultural, political and social arenas (Graham, 2002), which are intricate and multifarious per se.

Heritage tourists are not just consuming heritage, but playing an operating role in co-creating and representing the site meanings alongside marketers and interpreters (Weaver, Kaufman & Yoon, 2001).

⁹ The rank is based on authors' personal search on UNESCO website.

The desire of visitors to get emotionally involved with a heritage site and perceive it as part of their own heritage is such an illustration (Poria, Butler & Airey, 2006).

While place meanings and social construction was an important research area for some disciplines particularly environmental psychology (Jorgensen & Stedman, 2006) and human/cultural geography (Tuan, 1977), it has gained little attention in tourism studies. According to Liin et al. (2012) “only recently has the topic of people-place relationships become part of the heritage tourism literature (Poria et al., 2003; Timothy & Boyd, 2003).

In their study, Liin et al. (2012) identified dominant meanings that Anglo and Hispanic visitors ascribed to the Alamo and compared their responses for interpretive program development. In doing this, they employed visitor-employed photography (VEP) through means-end interviews. Using the VEP, interviewers easily extract meanings beyond the photographs from interviewees/visitors (Tonge, Moore, Ryan & Beckley, 2013). Some scholars even argue that a picture is worth more than a thousand words (Stedman, Beckley and Ambard, 2004). Means-end chain (MEC) is a useful mapping technique which has been largely used in marketing research to understand consumer behaviour (Lee, Chang, & Liu, 2010; Zanolli & Naspetti, 2002) and to some extent in tourism marketing to understand visitors’ motivation (Jiang, Scott, & Ding, 2014). Yet few of studies have examined place meanings at heritage tourism sites via the MEC (Liin et al., 2012).

The adoption of MEC in heritage sites contributes to evaluating the needs and wants of visitors through identifying the relationships between attributes (i.e., tangibles such as artifacts), the reasons for visiting (i.e., intangibles or benefits or consequences sought such as learning, relaxation, etc.), and the underlying personal and universal concepts (i.e., values such as identity, nostalgia, etc.) commonly known as the attribute-consequence-value (ACV) technique.

The MEC contributes to extracting chains of meanings based on the respondents’ words. MEC results contribute to understanding visitor meanings enabling heritage site operators to provide customized interpretive services, thus giving rise to enriching visitor experiences (Goldman, Chen & Larsen, 2001). Finally, in order to provide a visual representation of meanings at Sadabad, we used hierarchical value map (HVM).

Given that different fields have favoured different paradigms of understanding this concept, and also according to Lin, place meanings are site-specific, we aim to identify dominant place meanings that Iranian visitors attribute to Sa’dabad, one of highly top visited heritage sites in the capital city of Iran, Tehran. In particular, this study responds to Liin et al. (2012) call on further research on the use of means-end chain (MEC) technique to predict visitors’ meanings for heritage sites’ interpretive planning and marketing.

Further, Middle-Eastern countries have a good heritage tourism potential to be investigated, which has gained less interest in heritage tourism research compared with that of the developed countries (Nuryanti, 1996). The following research statement is the key issue dealt with in this study:

1. What meanings and values do the visitors attribute to Sa’dabad?

1.1. Background of the Study Site

The setting for the study is Sa’dabad palace (now called Sa’adabad Cultural Complex) located in uptown Tehran, the capital city of Iran, at the foot of Tochal Mountain and by the Darband River. Sa’dabad with 110 hectares area is regarded as one of the most famous cultural attractions in Iran due to its historical monumental value as well as its scenic landscape. Prior to the 1979 Revolution in Iran, it was a royal summer home for the two last imperial dynasties of Iran: Qajarid and Pahlavi. The 18 mansions inside

the palace area turned into museums and opened to the public once Islamic Republic superseded the Monarchy in 1980. The Complex is replete with various symbols representing ancient historical narratives and Iranian dramatic contemporary history, thereby making it one of the most top visited heritage sites in Tehran. Thanks to these special characteristics, Sa'dabad was chosen as the heritage site and the case of this study.

2. DATA & METHODOLOGY

The range of place meanings that visitors ascribed to Sa'dabad was explored in five steps as follows: visitor-employed photography (VEP) technique, interview form preparation, pilot interview, main interview, and content analysis.

In step 1, we handed a camera and a notebook to a sample of 20 visitors of Sa'dabad and asked them to take 10-15 photos of Sa'dabad features they viewed as the representative of its main and/or meaningful symbols. This procedure yielded 234 pictures. Of these yielded pictures, 9 themes were singled out based on frequency and representativeness of the symbols. The themes included: river (n=18), statue of Arash the Archer (n=17), scenic route (n=17), garden (n=16), interior decorations (n=14), half-body statue (n=13), entrance gate (n=11), lion statue (n=11), and mirror-working art (n=9). The numbers inside the parentheses represent the frequency of the related themes. Then themes were re-photographed and nine resulting photos were printed in a higher quality to ensure consistent resolution across all photos for the proper use in the interview section.

Using pictures to derive meanings from visitors' onsite experience, namely the VEP technique is commonly applied by marketing and tourism researchers (Gallarza & Saura, 2006; Liin et al., 2012; R. Stedman, Beckley, Wallace & Ambard, 2004b)

In the second step, the interview form was developed including main questions and the relevant probes (ladders) in order to stimulate detailed responses to elicit the universal concepts of visiting the site. In the third step, in order to revise and improve the interview procedure, a pilot interview was conducted with 15 volunteers. To have an interview framework, (Reynolds & Gutman, 1988) laddering procedure was used as follows: A relaxing interview atmosphere for respondents was created since the heritage-related issues are often contentious (Timothy & Boyd, 2003) particularly in the Middle Eastern countries such as Iran. Through Reynolds and Gutman (1988) laddering technique, the participants were persuaded to express their deep ideas about the images so that we could elicit the distinction.

In the fourth step, based on feedback from pilot interview and consulting with heritage experts and scholars, the main interview was prepared. 94 persons were approached for the main interview from which 50 visitors accepted to participate in the interview. Of this sample, 58% of participants were women and 42% men. As for the age of the participants, 18-30, 30-45, 45-60, and 60 above age groups accounted for 32%, 30%, 24%, and 14% of the sample respectively. The 50 visitors were interviewed based on their three most meaningful images.

In this stage, using the ACV, the researchers as the interviewers exploited a series of probes to stimulate participants' thoughts for connecting fairly concrete site meanings at the attribute level to the more abstract meanings at the consequences level and high personal abstract meanings at value level. That is, in order to activate the attribute-consequence-value chains, a series of directed probes were employed to move the participants up the ladder of abstraction (Klenosky, 2002). These probes tend to be open-ended questions such as '*why is it important to you*' to provoke participants' specific views in their own words.

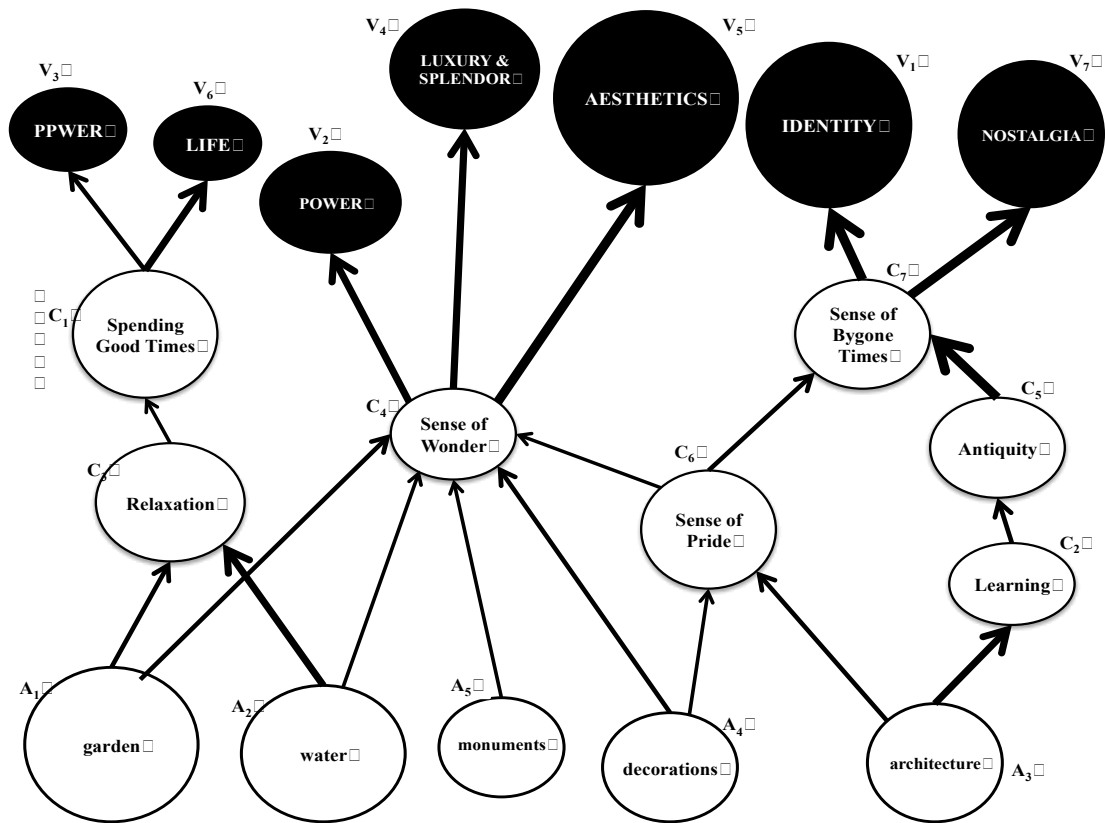


Figure 1. A hierarchical value map (HVM) of visitor meanings at the Sa'dabad

Hierarchical value map (HVP) was then developed as the final step of means-end chain analysis (see Figure 1) to group dominant place meanings at Sa'dabad into different themes. This map is drawn as a visual representation of associations allowing us to illustrate the major connections among ACVs. In HVP, only the strong relationships are drawn and the weak ones are not displayed on the map due to their low frequency. Following Liin et al. (2012) and Gengler, Klenosky and Mulvey (1995), this map illustrates attributes as white circles, consequences as gray circles and values as black circles. In order to better tell apart the attributes, consequences and values, the circles are drawn with different color. The circle size is drawn in proportion to the reporting rate and the number of ladders was shown by link thickness.

3. RESULTS

Using the VEP technique, the three most frequently photographed icons at Sa'dabad were the river (n=18), Statue of Arash the Archer (n=17), and the scenic route (n=17). Based on the HVM (Figure 1), the most meaningful values ascribed to Sa'dabad were identified and grouped into: aesthetics, identity, nostalgia, luxury and splendor, power, life and peace. However, since a limited number of the participants mentioned the two universal concepts of 'life' and 'peace', these two values were removed from the implication matrix. Based on interviews, the values or meanings were specified. These values are explained in separate sections below, ordered in terms of their frequency.

Sa'dabad Value I: Aesthetics

Aesthetics was the most frequent value, with 41 visitors mentioning it. Ornamentation, colour, the interaction of cultural objects and landscape at Sa'dabad triggers aesthetic sense amongst the visitors. Interviewer #17 stated that "wow! I always get carried away when I'm in the mirror hall or when I see

the stucco works, it's very fantastic, really gorgeous." "The Sa'dabad is beautiful," or "the Sa'dabad makes me feel peaceful" are words made by a female participant aged 23 who began to talk about the beauties of the trees once she was given a picture from the site gate (Interviewee 38). She stated that "look at the trees! You cannot find these trees anywhere. They are awesome!"

Value II: identity

Identity was the value that was clearly articulated in the interviewees' responses stating that they perceive themselves weak in their own sense of identity as an Iranian and perceive Sa'dabad visitation as a way to awakening their national identity. A total of 37 visitors produced ladders showing Sa'dabad somehow related to their own identity. For example, interviewee #22 perceived Sa'dabad part of her personal heritage once she was asked to observe statue of Arash the Archer and some other ancient Persian symbols. Many respondents tended to show Sa'dabad as part of their identity stating that "here talks about Iranians," (interviewee #12) or "I like here since it helps me get familiar with myself," (interviewee #6) or "the symbols and artifacts of Sa'dabad tell me who I was or where I came from" (interviewee #33).

Value III: Nostalgia

Of the two types of personal and historical nostalgia, the latter is mostly related to heritage sites. In other words, historical nostalgia as a phenomenon existing in the human society is noticeably felt within the heritage tourism contexts (Kim, 2005). What kind of place better than heritage sites could help visitors experience the "sentimental yearning" (KIM, 2005) for historical past? Reflecting the past, thinking of the historic days, wistful longing for the old past days are the values that were frequently mentioned by 38 participants in this research. Sa'dabad visitors pointed out that visiting the site could evoke the very memories of the magnificent days of the glorious past. Many visitors asserted that they wished they had lived in distant past when Persia was a great world power. "It is really sad that I cannot experience that gloriousness and pride, I wish I could have lived at that time at least for a moment."

Value IV: luxury and splendor

Luxury and splendor was another value that a total of 31 interviewees mentioned. Mirror-works, interior decorations, and the vastness of the site were some attributes leading to this value. Yet participants had different stance regarding this value. Some found the palace and its artifacts splendid and some hold the opposite opinion. For example, interviewee #41 stated, "I wonder how someone could live extravagantly when they see there are many having nothing to eat." Unlike the previous respondent who was against the former regime, interviewee #6 commented that "though they were monarchs, it is not that much luxurious. We should compare their lifestyle with other Kings and Queens". This conflicts of idea may originate in different groups visiting the site, those in favor of previous regime and vice versa.

Value V: power

Power was other universal meaning ascribed to Sa'dabad site by visitors. Sa'dabad used to be the summer palace of former monarchial regime in Iran. A total of 27 interviewees pointed out this meaning once they were referring to. Interviewee # 13 stated "The former regime cracked down people freedom. There was injustice, brutality, social class distance in the society they has all the power." Point to consider is that the despotic perspective was not merely because of visiting the site, there are some other personal and socio-historical factors shaping this point of view such as oppression, social class distance, brutality and injustice within different groups of people in the former regime. However, there were other respondents believing that the very dark condition and social class distance were not uncommon at that time and should not be overemphasized. Instead, they mentioned the current regime as true despot.

4. CONCLUSION AND RECOMMENDATION

This study focusing on both demand and supply sides of heritage tourism investigated the relationship between visitors (demand), the heritage site (supply) and interest in interpretation. The research questions were responded as follows:

1. What meanings and values do the visitors attribute to Sa'dabad? Using the qualitative method, the HVM revealed place meanings that visitors associated with the symbols at Sa'dabad in a total of five primary clusters of meanings including (1) aesthetics (2) identity (3) nostalgia (4) luxury and splendor (5) power. These values suggest that heritage tourism is beyond physical settings, containing symbols with a variety of socio-cultural and personal meanings which is consistent with Poria et al. (2003) and Liin et al. (2012) findings. The values also indicate that visitors and the heritage site marketers are interchangeably influenced by each other, leading to co-creation at the heritage settings (Weaver et al., 2001). The results from visitors participated in this study help us as well understand how these abstract meanings were formed at the Sa'dabad heritage site.

As regards managerial implications, the current study distinguished four groups of visitors considering the fact that they may be overlapped in some aspects; (1) those who expect to feel the site part of their personal/historical heritage, (2) those who feel negatively about the site, (3) those who expect to just learn about the site and (4) those who expect to enjoy the site. Using the HVM, Sa'dabad site management will be able to segment its own market, develop promotional strategy, evaluate the advertisements, and importantly carry out planning and interpretation programs.

The market segmentation could be conducted based on the visitors' motivations. The interpretation narratives' contents and forms should be able to reflect the most important meanings and values from the visitors' point of view by means of HVM's the thicker lines representing potential storylines. The main reason is the dominant role of emotional bonding with the site as the most important visitation motivation at the Sa'dabad. It is suggested that the personal interpretation be combined with other non-personal interpretive methods. Playing films, audio tour, producing multi-media programs, holding the exhibitions, distributing the brochures, guidebooks, installing appropriate panels with good design, historical reenactment, volunteers, etc. will increase the attractiveness and thus attachment and meaning-making to Sa'dabad.

Because the current study was an initial attempt to apply the MEC to the context of Iranian heritage tourism, further research needs to be conducted in other Iranian and/or non-Iranian contexts. Also, the future studies should include a greater diversity of Iranian heritage sites so that the findings could be better generalized to other places.

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The Strategy and Tactic (S&T) Tree for Achieving the Treacy and Wiersema (1993) Strategic Choices

L. Al-Hameed, P. Dobson and P. Jackson

^aSchool of Business and Law, Edith Cowan University, 270 Joondalup Drive, Joondalup, Western Australia, 6027

Corresponding Author's Email Address: l.al-hameed@ecu.edu.au

Abstract: *The paper proposes that the use of the relatively new tool from the Theory of Constraints – the Strategy and Tactic (S&T) tree can help to provide the linkage between the aim of the improvement and attaining the organization strategic goal. The integration of the S&T Tree and Treacy and Wiersema (1993)'s Value Discipline model is used to focus the original goal setting and subsequent implementation. Two case examples are presented to illustrate the application of the model. The case examples applied the ISO accreditations, and some of the outcomes of such quality program are undesirable and disappointing. This paper proposes that this dissatisfaction is often a consequence of a lack of clarity as to the goal of the implementation and the lack of a clear linkage to the organizational goal over the implementation.*

Keywords: *ISO outcomes, TOC strategy and tactic (S&T) tree, Treacy and Wiersema's value discipline model, Strategic choice, Case study.*

JEL Classification: *M1, L15*

1. INTRODUCTION

“Despite the impressive reference bank of success and powerful instigates of today's mainstream continuous improvement methods, they all seem to struggle with achieving higher level of adoption, with sustaining and expanding on initial improvements, and probably most importantly, with finding ways to reduce the significant percentage of failures and wasted scarce resources due to the these failures” (Barnard, 2010)

ISO involves standardizing the processes and work guidelines as well as the work policy through ensuring conformance against ISO procedures. Dissatisfaction and disappointment are commonly experienced with respect to ISO outcomes. For example, Terziovski and Power (2007) suggest that the European Commission's Directorate General of Industry provide evidence that frustration and confusion are common outcomes from implementing ISO accreditations particularly in respect to the perceived value and the outcomes of accreditation process. In addition, Costa and Lorente (2007) conclude that implementing ISO accreditation does not contribute to better company management since ISO standards tend to improve the internal operations or work procedures more than enhancing the overall organizational performance. Rodríguez-Escobar et al. (2006) argue that major source for dissatisfaction with ISO accreditations' outcomes is unrealistic expectations as to benefits. Also the high cost of maintenance of the accreditation according to Douglas et al. (2003) is a part of the disappointment with ISO accreditation. They assert that the ISO accreditation only gives value for money when the accredited organization is able to apply for contracts previously unavailable.

Publically available certification programs like ISO accreditation is a quality assurance program with a goal to confirm (assure) to others (competitors, customers, suppliers, and/or the organization itself) that the quality in specific area/s (product/service characters, process procedures, and/or the organization itself) follow specific standards and criteria (Al-Hameed, Dobson & Jackson, 2014). Yet as Williams

(2004) suggests internal motives are often also important. The basic motives of implementing ISO accreditation grouped into two groups: a) Coercive external motives: customer demand, pressure from competitors, the need to satisfy non-EU-government, the need to satisfy EU regulations. b) Internal motives: seeking quality improvement benefits, being part of a larger strategy, being part of a marketing strategy. Williams examined the outcomes of the ISO certifications in relation to the motive for adoption (Williams, 2004) and suggested that organizations following non-coercive internal motives have better outcomes than those for which ISO is enforced. Similar studies (Heras-Saizarbitoria & Boiral, 2013), (Prajogo, 2011) and (Santos & Escanciano, 2002) find similar results. I am suggesting that there is a linkage between the goal of the ISO program and the satisfaction with subsequent implementation. In line with Williams (2004) this paper propose that the ISO goal needs to be in line with the organizational goal and that targeting one or more of Treacy and Wiersema (1993) strategic choices Customer Intimacy CI, Operational Excellence or Operational Effectiveness OE and Product Differentiation PD. I am suggesting that strategic choices are well-supported by ISO implementation. The paper suggests the adoption of the Thinking Process (TP) to guide the implementation process and provide a clear understanding of what need to be done because TP tools focus on what to change and most importantly what not to change, what to change to, and How to cause the changes. The Strategy & Tactic (S&T) Tree is an important tool for managing the change process within the TOC approach. This paper will argue that this tool will provide a valuable platform for managing ISO implementation as it seeks to keep the goal of the change program clearly in focus.

The paper first introduced relevant aspects and literature of the TOC S&T tree, the Treacy and Wiersema's strategic choice model. Then two case examples of ISO accreditation analysed using one S&T trees. The analysis demonstrates that the S&T tree can provide benefit in clarifying and communicating how the ISO accreditation process links to the organizational goal.

2. THE THEORY OF CONSTRAINT STRATEGY AND TACTIC (S&T) TREE

The Theory of Constraints (TOC) is a holistic methodology that can be used to guide the implementation of any improvement programs including quality programs. TOC has helped many organizations to survive by achieving competitive advantage (Mabin & Balderstone, 2000, pp. 22-30). Its main premise is that in every system there is at least one constraint which prevents the organization from reaching its goal. The constraint usually represents the weakest point that keeps the system from improving their overall performance. The theory of constraints has been built on three interrelated principles (Shoemaker & Reid, 2005):

1. Each system has a goal, and to achieve this goal, a set of necessary conditions need to be satisfied.
2. The overall performance of the system is not the sum of its components performance.
3. Only a few constraints limit the system's performance at any time.

The technique of S&T tree provides a new approach to strategy implementation. The traditional approach is that strategy is at the top of the organization and tactics would be at a lower level or the operational level (see the left side of figure 1). However, under such model it is not clear where the strategy ends and where the tactic starts –the implementation is not clear and predictable. Consequently and to solve this dilemma Goldratt (2010) defined strategy as the answer to 'what for' and the tactic as to answer 'how to'. Goldratt proposed a more intimate linkage between strategy and tactic by suggesting that strategy and tactics should be presented in pairs (Goldratt, Goldratt & Abramov, 2002). By clearly delineating the link between strategy/tactic pairs and the organization goal the S&T tree will avoid the disharmony and the contrast between authority and responsibility since it provides an understanding of the role of each person within the organization (Barnard, 2010). S&T tree communicate the required changes in each level within the organization, which will enable organizations members to see their role in achieving a higher level strategy. Thus S&T tree builds the needed commitment to achieve the improvement process. Further, it sets the boundaries of the improvement process and also resolves the gap between authority and responsibility (Barnard, 2010).

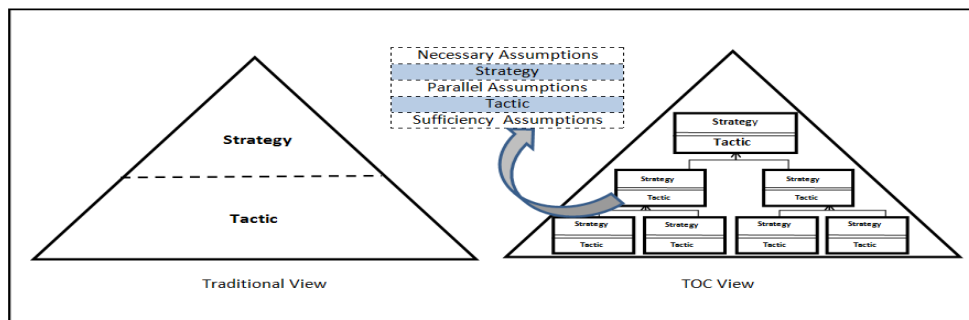


Figure 1: Traditional view vs. TOC view of strategy and tactic

Adapted from Powell, M. (2012). *Synchronization and Communication with TOC - Using S&T Tree*. Paper presented at the Third International TOCPA conference Moscow, Russia.

S&T tree is a logical tree structure that enable focusing (Huang, LI, Chung, Hsu & Tsai, 2013). It is valid as the assumption on which it is based. Thus, managers at every level in organization hold the responsibility to identify and communicate the strategy and tactic for each proposed changes. Those managers are also responsible of defining and communicating the logic behind the proposed changes which includes, why the proposed changes is necessary to achieve the higher level objective (necessary assumptions, parallel assumptions, and sufficiency assumptions) (Barnard, 2010). Necessary assumption represents the current damage of not taking the proposed change in the step. It clearly provides motivation for the necessity to the step (Ferguson, 2010). Parallel assumptions are the logical sequence which leads us from strategy to what the tactic must be. These assumptions refer to that strategy and tactic are parallel in effect or matches to each other. The sufficiency assumptions work as a guidance on what should be considered when reviewing the next level of S&T tree since it connects to the level above. It is following a sufficient-based logic which means it need to verify that all the listed component are enough or sufficient to achieve the desired result (Ferguson, 2010). The S&T tree is an important tool for defining, validating, communicating and implementing organizational strategy (Barnard, 2010). It is useful to incorporate ISO implementation as a tactic within the S&T tree to help the organization to reach its goal.

The reminder of this paper will seek to show this linkage and to develop particular S&T trees for each of these primary motives underlying ISO accreditations adoption. It will link these motives to the widely adopted value discipline model of Treacy and Wiersema (1993) to better clarify the strategic intent of the organisations.

3. THE ORGANIZATIONAL STRATEGIC CHOICES OF TREACY AND WIERSEMA (1993) MODEL FOR LEADING THE MARKET

Treacy and Wiersema (1993) determine three value disciplines to focus the organization's activities: Customer Intimacy CI, Operational Excellence OE, and Product Development PD. According to the value disciplines model whilst aspects of all components are needed successful organizations can only concentrate their efforts on one of at a time. According to Treacy and Wiersema (1993) CI is a strategy for continually tailoring and shaping products and services to fit an increasingly fine definition of the customer. Customer-intimate companies look at the customer's lifetime value to the company, not the value of any single transaction, thus they are willing to spend more to build customer loyalty for the long term. Consequently, employees in these companies will go extra step to make sure that customers gets exactly what they want (Treacy & Wiersema, 1997).

OE is the strategic approach to lead the industry through minimize overhead costs, eliminate intermediate production steps, reduce operations and process related costs, and optimize business processes across organizational boundaries. Companies pursuing OE focus on delivering their products or services to customers at competitive prices and with minimal inconvenience.

The last Treacy and Wiersema strategic choice is PD or Product Leadership. Organizations following this strategic choice strive to produce a continuous stream of state-of-the-art products and services. Such goal pushes organizations to one or more of three areas: Being creative at all the times (thinking out of the box), continue to commercialize their ideas quickly, and pursue new solutions to the problems that their own latest product or service has just solved. Such organizations create and maintain an environment that encourages employees to bring ideas into the company and, just as important, they listen to and consider these ideas, regardless of the source. Further, PD companies rush to opportunity and to capitalize on it (Treacy & Wiersema, 1997).

Treacy and Wiersema (1993) suggested that only few organizations have managed to lead in two disciplines and they managed this through focusing on one area first before commencing a second one. Such an argument has certain synergies with that proposed by TOC in the way it argues for a focus on constraints one at a time, and to have the constraint eventually move to a market constraint as with progressive breaking of internal constraints (Barnard, 2010). The TOC argument adds to the Treacy and Wiersema model as it provides an implementation focus for the model. For example, the third strategic choice of product leadership again would logically follow as organizations try to break the market constraint.

Implementing ISO accreditations perceived as a tactic used most effectively to address OE or CI. ISO accreditation cannot be seen as avenue for new product development since it is primarily a ‘best practice’ model that reflects common practice in the industry.

4. METHODOLOGY

The two organizations (Organization A and Organization B) are service providers; A is a professional service, NFP organization, works under academic institution called the parent organization and B is a For-Profit, private service provider. Organization A attained the ISO accreditation since 2008 with many unwanted outcomes, this organization will go through a routine process of editing their accreditation. While Organization B, during the time of data collection, has just get their ISO accreditation (six months or less). The research used case study approach, collecting data through in depth, semi-structured interview. In-depth interviews were conducted with members from the two organization (see table 1). In addition, multiple sources of data and perspectives were used to validate the assertions made from the interviews (for example: the organization’s website, internal audit procedures, audit criteria and report, documentation reviews and checklists, ISO standardization interpretations, a copy of the accreditation certification, ISO re-assessment report, and quality manual).

Table 1: The interviewees’ roles in the Organizations A & B

Participants from Organization A	Roles	Participants from Organization B	Roles
The manager of the organization	Administrative tasks and project manager	The Owner and General Director (GD)	Managing his business
ISO manager and internal auditor	Administrative tasks and ISO tasks	Executive General Manager	Following and managing the flow of the work within the organization
Supervisor and internal auditor	Supervision on operations and ISO tasks	Health and Safety, Environment and Quality training manager	Managing quality, environmental and safety within the organization

		(HSEQ) and also internal auditor	
IT officer	Processing projects	Financial Controller	Managing the
Business manager	Administrative tasks within the parent organization	Operations Manager	Managing the processes and operations of delivering the services
Co-director	Strategic and administrative role within the parent organization		

The two cases demonstrate the difficulties that two service organisations, a Not-For- Profit (NFP) and a For-Profit organization. The suggested frameworks would be used to guide subsequent re-accreditation whereby an organization might target external motives first followed by internal motives or vice versa. The argument that ISO accreditations can be seen to have external and internal motivations is in line with the arguments provided in value discipline model of Treacy and Wiersema (1993). In these suggested model I present the S&T tree for this subsequent development which is the OE in Organisation A after they attain CI when they first attain their accreditation. In Organization B, the proposed S&T tree is to attain the strategic choice of CI after attaining the OE by their ISO accreditation.

5. THE CASE EXAMPLES DISCUSSION

5.1. Defining the organizational goal

The Goal of Organization A

Goldratt (2010) states the goal for any NFP organization is to increase the goal units now and in the future - in this case it should be to deliver more finished projects. However, managerial staff of this organization expressed varied understandings as to the organization goal. For example, a co-director in the parent organization sees the goal of this organization is to enhance the impact on the community.

“...their goal is to provide very high level and ethical professional services to the parent organization community and the wider community and industry partners..... the goal is to have an impact on the quality and the quantity of life of the communities that we serve.”

The manager of Organization A sees the organizational goal in terms of the goal of the ISO accreditation.

“The primary goal of ISO accreditation was to achieve the accreditation to allow us to apply to government tenders, and that was it the organizational goal.”

Supervisor who is also internal auditor who work also as a stated that the main goal of this organization is perhaps the continuity of the business

“I suppose to keep people employed, I’m not sure, ...to keep going”

For the IT officer the goal was not clear

“I’m not sure if we have got vision and mission statements and things like that, I think our overall aim is to provide quality service, good response rates, part of that is providing work for people and making sure that we are profitable enough to continue running, I mean some of what we do is provide income for good purposes and people like that, but it is to do with quality research in health related areas.”

These perceptions reflect a lack of clarity regarding the organization goal.

The goal of Organization B

The formal goal of this organization is to create customer loyalty through the excellent experience as the Owner and the GD of organization B stated below, however, there is a general realization that main goal of the business is making profits:

“It’s the experience you come back for. So our job is to deliver an experience to somebody that they want to come back and do again, whether that’s general charter, touring and so on and so forth.”

In the same vein, the HSEQ Manager defines the goal as to be the best within the tourism industry:

“The goal of the organization is to be the best passenger transport company in Western Australia, if not Australia.”

The Finance Controller, however, derives the organizational goal from the mission of the organization that is to make revenues:

“The overall goal and mission is to be regarded as one of the best operators in WA. This is the mission which relates to quality, reliability, punctuality, affordability . . . So the goal for us is say within five years to achieve a certain revenue level for example, whether it’s revenue, whether it’s to become an employer of choice.”

From operational point of view, the Operations Manager defines that the goal of the organization as to make money as a way to be the best in the industry:

“To make money. To be number one. To make sure that we have our correct standpoint and to show our professionalism to the outsiders.”

Looking to this data and other feedbacks and documents within this organization, we identified a lack of alignment between the organizational goal and the goal of the ISO accreditation

The goal of the ISO accreditation in Organization A & B

The manager of Organization A sees the goal of going for the ISO accreditation as a mean to meet market requirement to be able to targeting certain customers/clients and at the same time for establishing internal operational enhancements:

“The primary goal was to achieve the accreditation to allow us to apply to government tenders, the secondary goal, once we started undertaking the process was to learn from the process and utilize it to improve our day-to-day operations, but the primary goal was to enable us to have the accreditation to apply for tenders.”

A supervisor who is also an internal auditor believes that the goal for attaining the ISO accreditation is because ISO is an important factor for business continuity through maintaining the contracts with the current clients and getting more clients:

“I would say that the goal is to maintain our contract and even to get other contracts of a similar nature.”

In the case of Organization B, The Owner and the GD is an entrepreneur who believes that doing things correctly is always fruitful. This justifies his continuous striving for development and improving the

performance as well as the profitability of his business. The goal of ISO accreditation according beside it is personal goal it is to meet the market requirement (contracts):

“For contracts . . . It’s a requirement now of many contracts for resources or government contracts and it’s becoming more so. So just really staying ahead of my competitors . . . it’s always been something that I would like to have achieved and I didn’t have the ability to do that myself, so we had someone come in specifically as an employee to take over the role. And the objective was to achieve ISO accreditation.”

In the case of Organization B, there is a level of alignment between the organizational goal and the goal of the accreditation, saying that, such alignment was only clear for few people including the owner and the GD of the organization, but not the rest of the employees.

6. DISCUSSION

Under the S&T tree framework, ISO accreditations generally used to achieve external market advantage or internal operational improvement, thus, it is a tactic to achieve a particular strategic goal. It is a planning tool that provides a clear vision for organizations on what they need to change and why. In developing and communicating the S&T tree participants in the two organisations were able to see the clear linkage of ISO accreditation the organization’s goal and strategic priorities. In both cases, I proposed using S&T tree if done in advance of implementing ISO accreditation it will help to clarify the goals of the implementation and potentially minimize the possibility of dissatisfaction with the ISO outcomes, and the cost attached to such process. In addition, for the Organisation A I am recommending that the coming editing process for their accreditation could be used to focus on the strategic choice of OE thus providing the business with a new focus for managing the growth achieved through previous customer intimacy goals (see Appendix A).

In this map of the organization strategic orientation toward its goal, A S&T tree initially constructed (not discussed in this paper) to support the aim of completing the initial goal of the accreditation to attain customer intimacy. This S&T tree focuses on to achieve OE process of accreditation review. This tree (see Appendix Figure 2) encourages the organization to have a clear focus on OE for future development. To attain this goal, the organization needs to focus their effort on internal operation improvements - maintaining their accreditation can be seen as an important tactic to achieve this. The S&T tree has a base growth box and an enhanced growth box. Within the base growth box several S&T steps have to be achieved, meeting the project promises is one of them. To achieve the project promises, process improvement is one of the strategies that the organization must use to meet project promises. To achieve this strategy ISO accreditation will be used as a tactic. Deploying ISO accreditation as a tactic for a different strategic choice required a valid justification. The necessary, parallel and sufficiency assumption (Table 4.11.1 for Organisation A) are used to justify and validate this S&T step. Each assumption needs to be examined before proceeding with the reviewing the accreditation. The assumptions for the tree validated by organizational employees to ensure that they are in agreement with the goals and assumptions underlying the OE strategy and associated ISO tactic.

Organisation B has been using the strategic choices OF OE and CI since they started the accreditation process; in fact their accreditation amid to build their operations and internal system according to the ISO standards. The enhanced growth box is where they are now and thus are seeking to sustain this growth.

In S&T trees for Organisation B represent the organisation strategic orientation toward its goal, thus first a S&T tree constructed to represents the organisation main goal of attaining the accreditation to attain OE in the first place (not discussed in this paper). While the second S&T tree (discussed in this study see Figure 3) is a guide for the organisation for further development and how the ISO accreditation can participate in attaining CI. This S&T tree (Appendix B Figure 3) encourages the Organisation B to have

a clear focus on CI as the next stage for leading the market. To attain this goal, the organisation needs to focus their effort on attracting targeted clients using their accreditation and maintain this accreditation as one of tactics. The S&T tree in Figure (3) again has a base growth box and an enhanced growth box. Within the base growth box several S&T steps have to be achieved, attracting targeted clients is one of them. To achieve this strategy maintaining ISO accreditation is one of few tactics that the organisation can use to attract the desired clients. Deploying ISO accreditation as a tactic for a different strategic choice required a valid justification. The necessary, parallel and sufficiency assumption (Table 3.1.1 Organization B) are used to justify and validate this S&T step. Each assumption examined before proceeding with the strategy.

Using the S&T tree to apply the Treacy and Wiersema value discipline will sequentially help to guide the implementation of strategic choices and with employee input in to the Tree development can provide the necessary commitment and understanding of how ISO fits in to organizational strategy.

7. CONCLUSION

The S&T Tree is a powerful new tool that can support the implementation of organizational strategic choices. It has the potential to provide a platform for sequencing the various strategic choices and with proper committed to the development by concerned stakeholders, it can help to ensure the linkage of ISO accreditation to the organizational goal, together with committed implementation.

The outcomes of implementing ISO accreditation have been disappointing in Australia until now. We conclude that there is support for the assertion that the S&T tree provides a useful and workable tool for focusing and giving direction to an ISO project. More detailed empirical field work is required to validate this assertion. Future action research in applying the tool in a live implementation would also add strength to these conclusions.

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APPENDIX A: The proposed S&T tree for Organization A

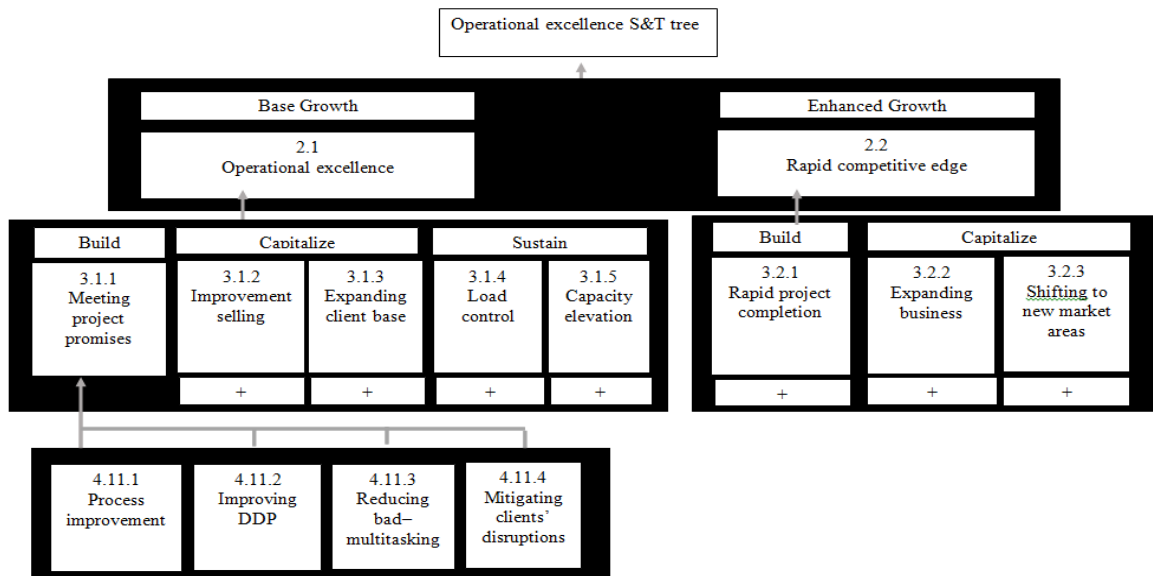


Figure 2: S&T tree for operations excellence

(based on Waxhaw, G. (2010) Viable Vision for Health Care System," in *Theory of Constraints Handbook*, J. F. Cox III and J. G. Schleier Jr (eds.), Mc Graw-Hill: New York, USA, pp. 928-945.)

Table 4.11.1 for Organisation A: Assumptions of for Process Improvement S&T tree

4.11.1	Process Improvement
Assumptions behind strategy	Without robust processes to ensure meeting projects' promises, the system is at risk of failing to fulfil their projects and not being able to maintain customer satisfaction.
Strategy	Internal process improvement
Assumptions behind tactic	The ISO standards will work in a project-based organisation "Moderate" ISO practices will lead to better on time delivery No strategic processes will be "over-written" by ISO processes
Tactic	Following the procedure of the ISO accreditation Adopting improving project operations such as TOC Critical Chain Project Management CCPM
Take Note! Sufficient assumptions	Instigating the ISO accreditation procedures to be a part of daily routine requires continuous effort, which concentrate the focus on maintaining and mastering the standards procedures and leave less time for applying new initiatives. The way to attain Operational Excellence is to meet all projects' promises through processes and operational improvement to the extent that will satisfy both the Organisation and the clients' need

Appendix B: The proposed S&T tree for Organization B

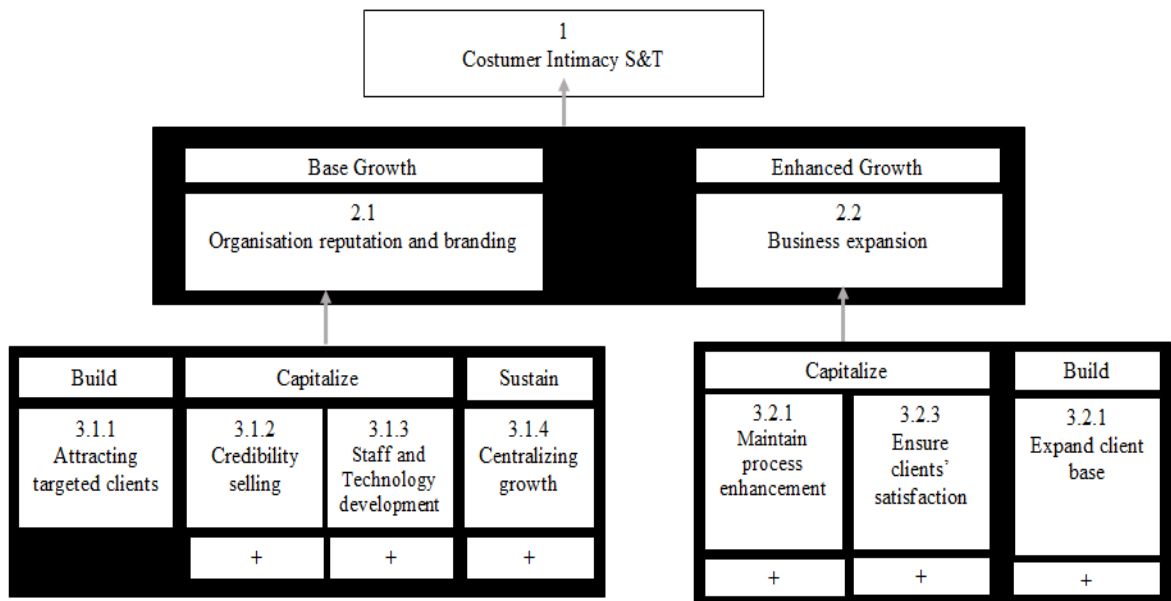


Figure 3: Organisation B S&T tree for Customer Intimacy

(Based on Wadhwa, G. (2010) Viable Vision for Health Care System," in Theory of Constraints Handbook, J. F. Cox III and J. G. Schleier Jr (eds.), Mc Graw-Hill: New York, USA, pp. 928-945.)

Table 3.1.1 Organization B: Attracting targeted clients step

3.1.1	Attracting targeted clients
Assumptions behind the step	The organisation does not provide cheap services; it provides high standards quality services to customers looking for this kind of services with that level of quality. Consequently, it is necessary for the organisation to attract those customers and maintain them as tits customers For the organisation to lead the tourism industry in WA as an organisation that deliver high quality tourism services, it is necessary to attract certain clients to get this reputation
Strategy	Attracting targeted clients
Assumptions behind tactic	To attract new customers who seek quality service, the organisation has to have strong brand and reputation of their services and High standards service, and ISO accreditation will maintain our reputation and brand Governmental departments are more likely to hire ISO accredited organisation Consistent processes would result from "moderate" ISO practices
Tactic	<ul style="list-style-type: none"> Maintain The ISO accreditation and Following its procedures is a good advertising for the organisation and its reputation of providing reliable services Seek prestigious awards the recognize performance and excellency Alliances and teaming with competitors and governments body Exceed and Satisfy the needs of the targeted clients
Take Note! (Sufficient assumptions)	<ul style="list-style-type: none"> Maintaining ISO accreditation is a challenge Cost is a major factor of customer decision

Consumer-Celebrity Relationships: Predictor Variables of Consumer's Buying Intentions.

M. Moraes^a, J. Gountas^a and S. Gountas^b

^a*School of Business and Governance, Murdoch University, 90 South Street, Murdoch, Western Australia, 6150*

^b*Department of Finance and Banking, School of Economics and Finance, Curtin University, Kent St, Bentley, Western Australia, 6102*

Corresponding Author's Email Address: m.moraes@murdoch.edu.au

Abstract: *Societies have always had a need for heroes to define new heights of achievements, new thresholds of ability, endurance and aspirations. Celebrities have a complex role upon consumers' buying behaviour that still requires a better understanding. After all, celebrities are influential leaders and role models placed at the top of the social pyramid. Nonetheless, the relationships that consumers develop with media personalities still require a better understanding. Celebrity personality and lifestyle attributes are major influences of consumers' opinions about brands and buying decisions. This paper investigates how different celebrities trigger different aspirations. Also, it investigates the aspirational drivers which lead to celebrity worship and influence upon consumers' buying behaviour. The model was tested with WarpPLS (N=534). The results support the hypotheses that consumers' intention to buy celebrity endorsed brands is influenced by consumers' aspirations and need for fame. Managerial implications for marketing professionals and academics are briefly discussed.*

1. INTRODUCTION

Throughout the twentieth and twenty-first centuries the phenomenon of celebrity popularity has increased enormously (Choi & Berger, 2010). A number of authors have documented the growth of celebrity mass-production, resembling many other mass-manufactured tangible and physical products (Gamson, 1994; Rojek, 2004, 2012; Rowlands, 2008; Turner, 2004). The growth of the celebrity culture has a strong influence on many consumers. Celebrity admiration and worshipping has become a compulsive preoccupation and appears to be a new form of mass population addiction around the world (Rowlands, 2008). A sizeable commercial industry has been developed to feed the insatiable consumers' needs for celebrity news, regarding products they buy, activities they engage and lifestyles for others to emulate (Gabler, 1998). Celebrities have become living, embodied products and have a great deal of influence on consumer attitudes and lifestyles. Giles (2000) suggests that famous celebrities affect many people's lives globally much more than just the products they recommend. Consumers develop relationships with celebrities and they have become dominant role models for many young consumers ready made for wholesale imitation of their attitudes, values and lifestyles. Nonetheless, celebrities in marketing have been mostly studied from a celebrity endorsement perspective, even though their current influential role in society is more complex than this. McCracken (1989) argues that consumer identity construction is influenced by celebrity role models. Famous celebrities become important aspirational figures to emulate and form vicarious relationships via mass media. The need for mass consumption of famous people and the new phenomenon of massification of fame is a new and growing field of research in Marketing and Cultural studies (Gountas et al., 2012; Maltby, 2010; Maltby et al., 2008). Therefore, the relationships that consumers develop with celebrities still require a better understanding.

2. HYPOTHESIS DEVELOPMENT

Consumers tend to develop emotional feelings towards celebrities because of their symbolic as well as cognitive attributes. This is an example of conceptual consumption because consumers focus on intangible attributes and benefits which are cognitive and affective (Ariely & Norton, 2009). Even though consumers do not have direct interaction with celebrities, many believe that they know and have a personal connection with them. These distant and imaginary relationships are referred to as parasocial relationships (Horton & Wohl, 1956; Rubin, et al., 1985). Often people express feelings towards media celebrity personalities without any real knowledge of what the reality is. Such remote feelings are consumer self-projections onto their favourite celebrities which can be agents for personal change and self-development. This can be explained by the simple fact that people are willing to include others into their identities (Aron & Aron, 1997). Feelings of admiration and adoration are generated for real and imaginative media celebrity relationships (Schindler et al., 2013; Boon & Lomore, 2001). Such feelings help people to grow and develop their identities (Schindler, 2014; Schindler et al., 2015; Schindler et al., 2013). Rojek (2013) suggests that younger consumers have a higher tendency to imitate celebrities and they are more likely to develop ambitious aspirations for extrinsic goals such as becoming wealthy and attaining high social status (Twenge, 2014). Consumers' favourite celebrities are embodied role models of material achievements, attractive lifestyles, readily accessible for imitation. Therefore, they tend to imitate celebrities they adore, or even just simply admire. Admiration is related to emulation, while adoration leads to mimicry (Schindler et al., 2013). If consumers are not able to emulate a celebrity's fame they can imitate smaller parts of their lifestyle, such as a luxury hand bag.

Consumer's imagined celebrity lifestyles appear to be strong driving desires for worldwide celebrity popularity (Houran et al., 2005). The desire to have the life of famous individuals is no longer perceived as a difficult goal to achieve. Media outlets such as reality television and globally available social media provide many opportunities for anyone who wants to become famous even for five minutes of fame. Gountas et al. (2012) developed a new scale measuring consumer's motives and aspirations to attain fame. The desire for fame can possibly lead to extrinsic aspirations, such as money, physical appearance and material assets (Maltby et al., 2008; Gountas et al., 2012), and also to intrinsic aspirations, such as a higher need to be more influential and belong (Maltby et al., 2008). Expectations and desire for fame is likely to be associated with higher levels of celebrity worship and celebrity influence on consumer's buying decisions (Fishbach & Dhar, 2005).

Celebrities portray certain personality and lifestyle characteristics deemed to be attractive for certain market segments. Some individuals want to be associated with individuals who are perceived to be successful and socially recognisable. This has been referred to as 'basking in reflected glory' (Cialdini et al., 1976). Some people admire others who seem to be the perfect portrait of success and emulate their values and aspirations (Schindler et al., 2013). Admired and adored celebrities are representations of certain socially desired lifestyles and personality attributes, which can become internalised aspirational goals for fans to achieve in the future (Schindler et al., 2013). This leads to the subjective formation of consumer-fan perceived identity congruence with their favourite celebrity attributes and lifestyle aspirations.

Hyper competition in mass media and celebrity market leads to more selective consumer attention of which celebrities to focus their admiration (Greenwood & Long, 2009). Consumer aspirational lifestyle desires drive their behaviours to emulate their favourite role models (Holmes & Redmond, 2006). Celebrity lifestyle and inspirational attributes are perceived to be strong influences for celebrity adoration (Morales & Gountas, 2014). Modern day consumers are looking for life coaches, thus influential figures (Rojek, 2012). In their cultural function of 'life coaches', celebrities provide "lifestyle tips and people skills" to ordinary people (Rojek, 2012, p. 175). Some celebrities tend to be more inspirational role models for healthy lifestyles and socially caring causes, while other celebrities have a stronger role model

influence on consumer's hedonic and materialistic lifestyle choices. Different celebrity types/characters are likely to be associated through imaginary relationships with different groups of consumer's and thus lead to different influences on behavioural choices and outcomes. The literature review leads us to propose the following hypotheses and conceptual model (Figure 1):

H1a,b - The desire for fame (DFF) has a significant positive association with, a) intrinsic celebrity-like aspirations (CaspInt); and b) extrinsic celebrity-like aspirations (CaspExt).

H2- Celebrities' perceived inspirational attributes (CellInsp) are positively associated with consumer's emulation of celebrity-like intrinsic aspiration (CaspInt).

H3- Celebrities' perceived materialistic lifestyle attributes (CellLife) are positively associated with consumer's desires to emulate celebrity-like extrinsic aspirations (CaspExt).

H4a,b – Consumers celebrity-like intrinsic aspirations (CaspInt) are positively associated with celebrity influence upon: a) consumers opinions and attitudes (InfOpin), and b) with consumers' buying intentions (InfProd).

H5a,b- Consumers extrinsic aspirations for exciting and glamorous lifestyle (CaspExt) are positively associated with celebrity influence upon: a) consumers opinions and attitudes (Inf.Opin), b) consumers' buying intentions (InfProd).

H6 – Consumer's Information and Attitudes (InfOpin) are positively associated with Consumer's Intentions to buy (InfProd).

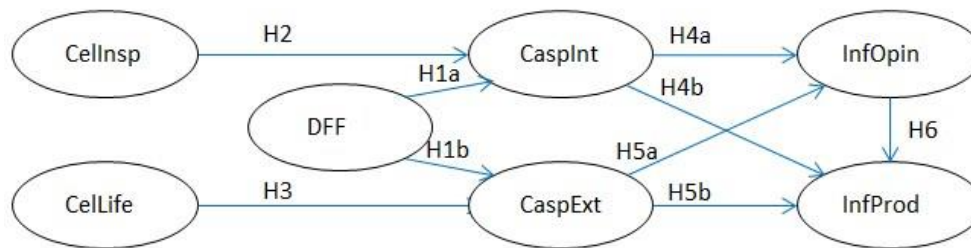


Figure 1- Conceptual Research Model and hypothesis.

3. METHOD

An online survey was conducted with 534 Australians. The average participant age is 26, with 67% female and 33% male. The participants were university undergraduate and postgraduate students from a representative sample of four Western Australian Universities. Students were not offered any incentives to participate. All constructs were pre-tested and questions used a 5 point Likert scale (1= strongly disagree and 5= strongly agree). Participants were asked to name their favourite entertainment celebrity in music, television or cinema and to answer following items of the survey questions in relation to the listed celebrity.

The study uses measures from existing literature and some developed/adapted through extensive qualitative and quantitative research. The researchers conducted thirteen in-depth interviews with Australian and international students; five in-depth interviews with experts (casting agents, and celebrity managers/directors) who are working in the celebrity industry. In addition, six focus groups were conducted to develop and refine the hypothesised research model. Exploratory factor analysis using Promax produced robust factor structures and Cronbach's Alpha scores confirmed the appropriateness and internal validity of all construct items. The constructs included in this study are:

1) Consumers' aspirations: Three factors measured consumers, a) Desire for fame (DFF), b) Intrinsic Celebrity-like Aspirations (CaspInt), and c) Extrinsic Celebrity-like Aspirations (CaspExt). Promax rotation produced three robust factors for consumer aspirations with acceptable Cronbach Alphas.

a). The construct of Desire for fame (DFF) internal validity is acceptable, Cronbach $\alpha = 0.88$, confirming that this is a well validated scale measuring the overall consumer desire for fame (Gountas et al., 2012).

The items for the two facets of **Intrinsic** and **Extrinsic** Celebrity-like aspirations originated from Kasser and Ryan (1993) and Grouzet et al. (2005).

b). The Celebrity-like Aspirations measured **Intrinsic** celebrity-like aspirations has three items and the Cronbach $\alpha = 0.64$, e.g., 'I wish my life was as meaningful as the life of this celebrity'.

c). **Extrinsic** celebrity-like aspirations factor has three items and produced an acceptable Cronbach $\alpha =$

0.71, e.g., 'I wish I had a similar lifestyle as to celebrity'.

2) Admired celebrity attributes factor consists of two facets, a) socially inspirational attributes, and b) material lifestyle attributes. The factor items were developed through extensive literature review, qualitative research and tested with quantitative research before they were used in this study:

a) *Celebrity socially inspirational attributes facet (CellInsp)* internal validity is above the recommended levels (Cronbach $\alpha = 0.82$. This factor consisted of seven items e.g., 'I perceive this celebrity to be a caring person towards other people in need'; 'I perceive my favourite celebrity as being caring and unselfish towards others'; 'I perceive my favourite celebrity as someone who does not give up when things look hopeless'.

b) *Celebrity material lifestyle attributes facet (CelLife)* internal validity is acceptable with Cronbach $\alpha = 0.71$. This factor consists of four items, e.g., 'My favourite celebrity appears to live a glamorous lifestyle'; 'my favourite celebrity likes to have an exciting lifestyle'.

3) Celebrity influence on consumers' opinions and attitudes (InfOpin), produced a Cronbach $\alpha = 0.80$. This factor was measured using four items that reflect the feeling of adoration adapted from Schindler et al. (2013) adoration scale. E.g., 'I feel that I am guided and shaped by my favourite celebrity'.

4) Celebrity influence on consumers' buying intentions (InfProd), produced a Cronbach $\alpha = 0.84$. This factor consists of four items which measure celebrity influence in regards to the four main consumer buying preferences (food, fashion, brand and product). E.g., 'My favourite celebrity influences my food consumption preferences'; 'this celebrity influences my fashion, brand and produce preferences'.

4. DATA ANALYSIS

The data were analysed using a partial least square (PLS) approach using WarpPLS (4.0) software program. This approach was chosen due to its efficiency with relatively small samples and complex

models (Hair et al., 2014). WarpPLS is a Partial Least Squares regression analysis which measures linear and non-linear relationships (mediation and moderation), simultaneously. WarpPLS uses a bootstrapping approach which addresses concerns regarding lack of normal data distribution (Kock, 2012). WarpPLS is an efficient way of measuring model fits to the data that tests complex relationships between independent and dependent variable differences. Table 1 shows the means (M), standard deviations (SD), composite reliability (CR), Cronbach alpha (CA), average variance extracted (AVE) and correlations. All factors presented convergent validity (AVE scores higher than 0.5) and discriminant validity, the square root of the average variance extracted for each variable is greater than the correlations between that and other latent variables indicating discriminant validity (Fornell & Larcker, 1981). The conceptual model (Figure 1) was tested to produce final optimal model (Figure 2). The final model fits the data well. The fit statistics for the sample are: Average path coefficient (APC) =0.368, P<.001; Average R-squared (ARS) =0.39, P<.001; Average block VIF (AVIF) = 1.24 (ideally < 3.3); Average full collinearity (AFVIF) = 1.698 (ideally< 3.3); Tenenhaus goodness of fit (GoF) = 0.49 (large>0.36); R-squared contribution ration (RSCR) =1.00 (1=ideal); Simpon's Paradox Ratio = 1.00 (1=ideal). Table 2 shows the PLS modelling results.

Variable	M	SD	CR	CA	CaspExt	CaspInt	DFF	Cellife	CellInsp	InfOpin	InfProd
CAspExt	2.94	0.57	0.84	0.71	(0.63)						
CAspInt	3.20	0.85	0.80	0.64	0.49**	(0.58)					
DFF	2.36	0.97	0.91	0.88	0.61**	0.49**	(0.68)				
Cellife	3.58	0.73	0.82	0.71	0.43**	0.19**	0.28**	(0.55)			
CellInsp	3.92	0.57	0.87	0.82	0.03	0.35**	-0.50	0.16**	(0.53)		
InfOpin	2.60	0.86	0.87	0.80	0.37**	0.53**	0.33**	0.12**	0.28**	(0.63)	
InfProd	2.00	0.90	0.90	0.84	0.50**	0.26**	0.37**	0.24**	0.02	0.50**	(0.69)

**Sig. at 0.01 (AVE shown on diagonal)

Table 1– Means (M), Standard Deviation (SD), Composite Reliability (CR), Cronbach's Alpha (CA), average variance extracted (AVE) and correlations.

Path	Path coefficient	Significance
DFF → CaspInt	0.50	<0.001
DFF → CaspExt	0.54	<0.001
CellInsp → CaspInt	0.36	<0.001
Cellife → CaspExt	0.28	<0.001
CaspExt → InfOpin	0.20	<0.001
CaspInt → InfOpin	0.42	<0.001
CaspExt → InfProd	0.40	<0.001
CaspInt → InfProd	0.17	<0.001
InfOpin → InfProd	0.45	<0.001
Celebrity-like intrinsic Asp	R2 = 0.36	
Celebrity-like extrinsic Asp	R2 = 0.46	
Influence -Opinions	R2 = 0.30	
Influence - Products	R2 = 0.47	

Table 2 - PLS modelling analysis results.

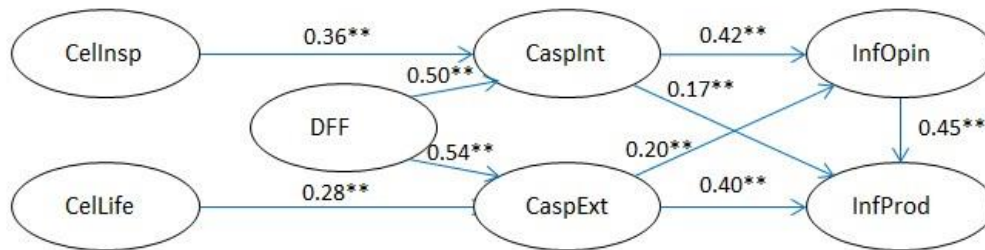


Figure 2- Final PLS model (*Sig at.05, **Sig at 0.01)

5. DISCUSSION AND MANAGERIAL IMPLICATIONS

The empirical research findings support all hypotheses (Figure 2). More specifically, the Australian consumers' Desire for Fame (DFF) is a strong predictor of celebrity-like Intrinsic ($R=0.50^{**}$) and celebrity-like Extrinsic Aspirations ($R=0.54^{**}$). The DFF is also directly weakly related to the consumer's intention to buy similar brands endorsed by celebrities. The model shows how different celebrity attributes are related to different types of aspirations. Celebrities which are perceived as inspirational influence on consumers' desire for a more meaningful lifestyle based on intrinsic attributes ($R=0.36^{**}$), while those who are perceived as having a glamorous lifestyle influence consumers to aspire to similar materialistic lifestyle attributes ($R=0.28^{**}$). It appears that the consumer's perceived celebrity-like intrinsic aspirations mediate the relationships between the perceived celebrity attributes and Consumer Opinions and Intentions to buy. Perceived intrinsic celebrity aspirations have the potential to affect consumer's opinions and therefore attitudes to buy products endorsed by their favourite celebrities ($R=0.42^{**}$). Extrinsic celebrity-like aspirations exert an equally important influence on consumer's intention to buy ($R=0.40^{**}$) and less so on consumer's opinion influence ($R=0.17^{**}$). The model clearly shows that there are complex relationships between consumers and celebrities and highlights the crucial role of celebrities as role models. The empirical finding strongly supports the notion that celebrities have an impact on consumers' aspirations and intentions to emulate the celebrity's opinions and product choices. Nonetheless, it is important to point out the risks associated with high levels of celebrity-like aspirations as these can lead to frustration if they are unrealistic goals to achieve. Rojek (2012) suggests that a very small percentage of the population is likely to achieve material and personal success like celebrities.

Future research is needed to gain a more in-depth understanding of the complex relationships consumers develop with celebrities and how different responses are triggered by distinct types of celebrities across different brands and product categories. For example, public vs privately consumed products are consumed differently and therefore celebrities may have different levels of influence. There is very little research on the possible differences between males, females and other socio-economic and cultural differences. More research using experimental design methods would explore the consumer-celebrity relationships in more depth and map out some of the more specific influences on decision processes involved.

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Working Capital Management, Ownership Structure and Firm Performance: Evidence from French SMEs

Narimène Hennani

*Centre d'Etudes et de Recherches sur les Organisations et la Stratégie (CEROS), University of Paris
Ouest,
Nanterre La Défense, 200 Avenue de la République, 92000 Nanterre, France*

Corresponding Author's Email Address: hennaninarimene@gmail.com

Abstract: *The purpose of this paper is to explore empirically how the ownership structure impact the bidirectional relationship between Working Capital Management and firm performance. Thus, we considered a large sample of 10502 non listed French SMEs and realized two sets of regressions. The first set tried to find out how firm's performance can be affected by WCM and ownership structure variables. The second was run to find out how the WCM can be affected by both ownership structure and firm's performance. The results show significant relationships in both regressions whereas Family Ownership variable is only significant in the second set.*

Keywords: *Working capital management, Performance, Ownership structure, SMEs, Family ownership*

JEL Classification: *G32, L25, L26*

1. INTRODUCTION

Financial management, in particular the management of cash flow and working capital is one of the most important challenges facing small to medium enterprises SMEs (Mazzarol, 2014). In fact, SMEs need to particularly control and monitor their working capital because they are generally associated with a higher proportion of current assets relative to large firms, less liquidity, volatile cash flows and a reliance on short-term debts (Peel et al., 2000). If working capital is managed improperly, allocating more than enough of it will render management non-efficient and reduce the benefits of short-term investments. Thus, many are the empirical studies that have been done to test the impact of WCM on firm's profitability (Singh, S. Kumar, 2014), however, none of these studies have tested the inverse case and considered this relationship as bidirectional.

In addition, financial management of SMEs differs significantly from large firms due not only to size, but also the way in which small business owner-managers make decisions (Abdulsaleh & Worthington, 2013). However, a surprisingly small number of researchers have concentrated on exploring SMEs in this context and investigating the impact of ownership type and structure on the performance of SMEs. In addition, according to Yazdanfar and Ohman (2014), managers of SMEs can enhance their firm's performance by improving their working capital because it is the liquid asset found within the firm, the ability to improve the speed at which cash is generated from invoices will help enhance firm's performance. Thus, due to the importance of the manager in making working capital components daily decisions and its positive impact on the firm's performance, it is more than relevant to look for the impact of ownership structure and performance on WCM, especially because of the numerous behaviour possibilities of the manager according to the Agency Theory of Jensen and Meckling (1976). Indeed, existing research literature focused on various determinants of WCM but had left the behavioural aspect and biases of corporate treasures in managing working capital (Singh and Kumar, 2014). Existing studies that tried to make the link between ownership structure and WCM in SMEs are, often, descriptive and focus in one type of ownership structure. Surveys, sent to owner-managers of a sample of SMEs, are the

most common data used in this field (Abanis et al., 2013, Orobia et al., 2013, Mungal & Garbharran, 2014, Amoako, 2013).

Therefore, the aim of this study is to address the gap on the bidirectional relationship between WCM and SME's performance while testing the ownership structure influence. Previous studies have largely investigated, in one hand, the relationship between WCM and performance and in the other hand, the relationship between the ownership structure and performance. Thus, we want to investigate first how WCM and ownership structure influence simultaneously SMEs profitability? Second, how the WCM could be affected by the firms performance and the ownership structure? Can the family type ownership be significant in these relationships?

Thus, this paper will proceed as follows. Section 2 explains the methodology and exposes the sample as well as the variables used in the empirical analysis. The results are presented in Section 3. Finally, Section 4 concludes and highlights the contributions.

2. DATA AND METHODOLOGY

The chosen empirical study is based on two sets of linear regressions. The first set aims to find out how firm's performance can be affected by WCM and ownership structure variables, while the second set is to find out how the WCM can be affected by ownership structure and firm's performance. Family Ownership type is considered in both regressions to find out its impact in this relationship.

2.1. Sample

A sample of 10502 French non listed SMEs has been selected from Diane Bureau Van Dijk database, where, we collected ownership characteristics and financial statements of the year 2015, because, only actual ownership structure information were available. These firms employ less than 250 employees but more than 10 employees, have a maximal annual turnover of 50 million euro but also a minimum of 2 million euro, and have a maximal annual balance sheet of 43 million euro and also a minimum of 2 million euro. Companies, which are active in the financial, insurance and real estate sector, are removed, due to the sector's limited comparability to other sectors¹⁰. In addition, firms owned at more than 50.01% by large industrial companies, banks and insurance are too excluded in order to avoid their subsidiaries¹¹.

2.2. Variables

A set of quantitative and qualitative variables has been taken into account. The Table 1 summarizes the variables that we chose while presenting descriptive statistics of the sample before normalization.

In the first part, we find the quantitative variables, in addition to the calculation formula while needed. Two first ownership structure measures have been used, which are the number of managers¹² and the number of shareholders. Three managers or shareholders are the mean value of these two variables. Then, we find the ownership concentration which is calculated on the basis of the sum of main known shareholders share (Charreaux, 1991). 82% is the mean of this variable which shows the high ownership concentration in our sample. The age of our SMEs has been taken into account too. Performance is measured by the Return on assets ROA which is an indicator of how profitable a company is relative to

¹⁰ The exclusion of financial sector firms is standard practice in the corporate finance literature as banks, insurance companies, real estate companies, and other financial institutions that usually report income based on interest, commission, and trading and focus on liquidity and risk in their financial reporting.

¹¹ Hedlund (1981) found that subsidiary autonomy was lowest for finance decisions. According to his research, autonomy tended to be reduced for decisions which concern central resources (raising equity capital, dividend policy, expatriate personnel); entail long-term obligations; and involve standardization and the definition of common organizational routines (quality control norms, transfer pricing policies).

¹² To check whether a company is held by a single-manager or many managers.

its total assets. Leverage, Sales Growth and Size has been taken into account as a control variable like Deloof (2003) analysis. Then, we find the cash conversion cycle (CCC), the popular measure of WCM used in many studies like Deloof (2003), Raheman and Nasr (2007), García-Teruel and Solano (2007) and Afrifa and Padachi (2016) for measuring the effect of WCM on profitability of firm. CCC is the time difference between purchase of raw materials and getting finished goods paid. Longer this cycle means more investment in working capital. The cash conversion cycle is used as a comprehensive measure of WCM. The cash conversion cycle is simply (number of days accounts receivable + number of days inventory - number of days accounts payable).

Considering the qualitative variables we first took into account the industry, The managerial ownership dummy has been used to check the separation or not between ownership and decision, 45% of our enterprises are manager owned and thus have no separation between ownership and decision. The duality dummy has been considered to notice the separation (1) of functions of the president of board director from those of the manager; only 45% of our firms have made this separation. Finally, Family Ownership dummy has been taken into consideration; however, only 14% of our firms' sample is family owned.

Table 1: Descriptive statistics

Quantitative variables	Formula	No. of observations	Minimum	Maximum	Mean	Variance (n)	Standard deviation (n)
Number of managers	-	10502	1.000	37.000	3.580	8.287	2.879
Number of shareholders	-	10502	1.000	41.000	2.438	4.671	2.161
Ownership Concentration	-	10502	0.000	1.000	0.821	0.060	0.245
Age of the Firm	-	10502	1.575	116.074	28.736	222.379	14.912
Return on Assets	EBITDA/Total Assets	10502	-0.827	0.969	0.094	0.011	0.104
Leverage	Financial Debts/Total Assets	10502	-0.360	0.944	0.147	0.024	0.154
Sales Growth	$([sales_t - sales_{t-1}]/sales_{t-1})$	10502	-0.955	1.935	0.041	0.038	0.196
Size	Ln Total Assets	10502	14.509	17.565	15.338	0.430	0.655
Cash Conversion Cycle	DIO + DSO - DPO	10502	-628.332	974.590	55.873	7785.468	88.235
Days Inventory Outstanding	$[inventories \times 360]/cost \text{ of sales}$	10502	0.000	955.946	56.406	6560.150	80.995
Days Sales Outstanding	$[accounts \text{ receivable} \times 360]/sales$	10502	0.000	734.578	58.068	2250.919	47.444
Days Payable Outstanding	$[accounts \text{ payable} \times 360]/purchases$	10502	0.000	899.479	57.515	1830.769	42.787
Qualitative variables	No. of observations	Category	Category definition				Frequency per category
INDUSTRY	10502	1	Agriculture, forestry and fishing				159
		2	Manufacturing				2520
		3	Construction				1763
		4	Wholesale and retail trade				3477
		5	Hotels and restaurants				242
		6	Transport and communications				985
		7	Public administration, education, health and social work				613
		8	Other activities and services				743
DUALITY	10502	0	NO				5746
		1	YES				4756
FAMILY FIRMS	10502	0	NO				9044
		1	YES				1458
OWNER MANAGER	10502	0	NO				5795
		1	YES				4707

2.3. Empirical Analysis

After the normalization of our observations, ANCOVA was the model that we chose for our regressions in both sets. This model has been considered because we have to model quantitative dependent variables (ROA and CCC) by using quantitative and qualitative dependent variables. ANCOVA (ANalysis of COVariance) can be seen as a mix of ANOVA and linear regression as the dependent variable is of the same type, the model is linear and the hypotheses are identical. In reality, it is more correct to consider ANOVA and linear regression as special cases of ANCOVA. After confirmation of the absence of multicollinearity, we run our regressions¹³.

3. RESULTS

The results of the first set of regressions are reported below in Table 2. The aim of these regressions is to find out how the firm's performance can be affected by Ownership structure variables and CCC. The first regression reports the impact of the Ownership type and structure on the performance. The control variables are all significant except Construction, Wholesale and retail trade industries. The performance of our SMEs is negatively influenced by their age, Leverage and Size. Old SMEs are less likely to have good performance and if they want to have a better one, they should reduce their leverage, have less managers and shareholders and lower their ownership concentration and as an answer to our research question lower their Days Inventory Outstanding. This negative relation between inventory and performance can be caused by declining sales, leading to lower profits and more inventory. In the second regression, we found that SMEs should lower their Days Sales Outstanding if they want to have better performance too. The third regression shows strong negative relation between accounts payable and performance, with the highest adjusted R², which could be explained by the fact that firms will wait less to pay their bills as long as they are profitable. CCC and its components have all significant negative impact on SMEs performance, which coincide with Deloof (2003) findings, however, and in four regressions, family ownership has not been significant in explaining French SMEs performance.

We also used Control Variables (Age, Sales Growth, Leverage, Size and Industries), that we chose based on previous studies on the impact of ownership structure on performance such as Charreaux (1991) and the impact of WCM on profitability such as Deloof (2003). A last regression, which is not reported here, has been done with the control variables, the results have no great difference and the adjusted R² is less than 6%, which reflects the added value that we brought to this model by our explanatory variables.

The results of the second set of regressions are reported below in Table 3. The first regression was run with the control variables. All variables are significant except leverage which is no longer significant with the CCC as the dependent variable. We notice too that the adjusted R² are more significant in this regression set. This can suggest that it is the performance which affects the CCC and not the inverse case, and these regressions are the most reliable to explain how the WCM can be affected by the performance and the ownership structure. Other differences can be noticed in the control variables regression. First, it is the positive relation between the CCC and the firm's age. Same is noticed with Size; however, Sales Growth shows the inverse case which indicates that firms with low Sales Growth would have a bigger CCC. Moreover, all industries are significant, but this relationship changes from a sector to another. In the second regression, we added ROA and found that the SMEs performance affects negatively the CCC, which confirm our previous suggestion about whether the WCM affect the performance or inversely. After the validation of the performance, in the third regression we moved to check the impact of ownership structure on CCC. The number of shareholders and managers has here no significance on the CCC; however, managerial ownership is positively significant in explaining the CCC in addition to family ownership and duality. Thus, the separation of functions of the president of board director from those of the manager has a positive impact on French SMEs CCC while the ownership concentration has

¹³ Matrix correlations, which is not reported here, showed very low correlation between our variables, the highest correlation value was 0.395 between Industry 2 and 4.

none. In order to better understand our significant variables of this regression set we excluded, in the fourth regression, insignificant ones. The Highest adjusted R² is for this last regression which leads to approximately to the same results but with better representativeness of the explanatory variables. Thus, being a family firm has a positive impact on WCM, plus, the managerial ownership which means that the non-separation of decision and control can lead to better WCM. An explanation to this relation is the adopted WCM (conservative or aggressive) strategy by these SMEs.

Table 2: Return On Assets as dependant variable

Independent variables	First Regression		Second Regression		Third Regression		Fourth Regression	
	A	Sig.	A	Sig.	A	Sig.	A	Sig.
Intercept	.503	0.000	.516	0.000	.517	0.000	.540	0.000
Age	-.018	.000	-.024	.000	-.026	.000	-.018	.000
Sales Growth	.124	.000	.127	.000	.129	.000	.124	.000
Leverage	-.038	.000	-.046	.000	-.044	.000	-.040	.000
Size	-.009	.002	-.009	.001	-.008	.003	-.010	.000
Industry1: Agriculture, forestry and fishing	.018	.000	.004	.377	.008	.119	.014	.006
Industry2: Manufacturing	.012	.000	.005	.031	.006	.019	.010	.000
Industry3: Construction	-.002	.441	-.004	.121	-.005	.059	-.002	.394
Industry4: Wholesale and retail trade	.004	.060	-.008	.000	-.006	.007	.001	.691
Industry5: Hotels and restaurants	.032	.000	.025	.000	.030	.000	.030	.000
Industry6: Transport and communications	.014	.000	.013	.000	.012	.000	.014	.000
Industry7: Public administration, education, health and social work	.016	.000	.013	.000	.015	.000	.015	.000
Number of Managers	-.072	.000	-.072	.000	-.073	.000	-.072	.000
Number of Shareholders	-.028	.006	-.026	.011	-.029	.006	-.027	.009
Managerial Ownership	-.001	.430	-.001	.278	-.002	.120	-.001	.470
Ownership Concentration	-.006	.008	-.006	.011	-.006	.014	-.006	.007
Family/non Family Firms	.000	.901	-.001	.462	-.002	.359	.000	.849
Duality	-.004	.000	-.005	.000	-.005	.000	-.004	.000
Days Inventory Outstanding	-.083	.000	-	-	-	-	-	-
Days Sales Outstanding	-	-	-.097	.000	-	-	-	-
Days Payable Outstanding	-	-	-	-	-.160	.000	-	-
Cash Conversion Cycle	-	-	-	-	-	-	-.091	.000
Adjusted R ²	.082		.080		.087		.077	

Table 3: Cash Conversion Cycle as dependant variable

Independent variables	First Regression		Second Regression		Third Regression		Fourth Regression	
	A	Sig.	A	Sig.	A	Sig.	A	Sig.
Intercept	.410	0.000	.413	0.000	.405	0.000	.444	0.000
Age	.038	.000	.036	.000	.037	.000	.035	.000
Sales Growth	-.037	.000	-.026	.000	-.037	.000	-.027	.000
Leverage	-.001	.740	-.005	.286	-.002	.653	-.005	.255
Size	.027	.000	.025	.000	.028	.000	.027	.000
Industry1: Agriculture, forestry and fishing	.054	.000	.055	.000	.053	.000	.054	.000
Industry2: Manufacturing	.022	.000	.023	.000	.022	.000	.023	.000
Industry3: Construction	.010	.000	.010	.000	.010	.000	.009	.000
Industry4: Wholesale and retail trade	.027	.000	.027	.000	.027	.000	.027	.000
Industry5: Hotels and restaurants	-.038	.000	-.035	.000	-.038	.000	-.035	.000
Industry6: Transport and communications	-.010	.000	-.008	.001	-.009	.000	-.008	.001
Industry7: Public administration, education, health and social work	-.018	.000	-.017	.000	-.018	.000	-.017	.000
Return On Assets	-	-	-.045	0.000	-	-	-.077	0.000
Number of Managers	-	-	-	-	.004	.621	-	-
Number of Shareholders	-	-	-	-	.001	.884	-	-
Managerial Ownership	-	-	-	-	.004	.001	.004	.001
Ownership Concentration	-	-	-	-	.000	.944	-	-
Family/non Family Firms	-	-	-	-	.003	.045	.003	.038
Duality	-	-	-	-	.005	.000	.005	.000
Adjusted R ²	.125		.131		.127		.134	

4. CONCLUSIONS AND RECOMANDATIONS

The aim of this paper is to address the gap on the bidirectional relationship between WCM and firm's performance, while testing the influence of ownership structure on this relationship, in the French SMEs context. Two regressions sets have been realized on a sample of 10502 firms. Results of regressions with control variables are consistent with previous researchers related to this field such as Garcia- Teruel and MartinezSolano (2007); Mustafa (2011); Baños- Caballero et al. (2012); Deloof (2003) ; Amarjit S. Gill, Nahum Biger, (2013). This study offers new evidence on the relationship between working capital management and performance by introducing the ownership structure in the explanation process. Ignoring the importance of this third dimension is neglecting the importance of the manager in SMEs. In the first set of regressions, proof of the important relationship between profitability and CCC has been brought. In addition, significant negative impact of ownership concentration was noticed on firm's performance which is consistent with the Agency theory (Jensen and Meckling, 1976). The second set of regressions brought another proof of the importance of the impact of ownership structure on the CCC. Significant positive managerial ownership impact along with duality has been noticed too. In addition to highlighting the importance of managerial ownership to WCM, Family ownership has been brought to discussion, another dimension that has to be more exploited and studied. Furthermore, these results could be territory sensitive, thus our recommendation is to extend the study sample to the international field.

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The Major Currency Options Pricing: A Survey of the Theoretical Literature

Q. Le, A. Hoque, D. Gasbarro and K. Hassan

School of Business and Governance, Murdoch University, 90 South Street, Murdoch, Western Australia, 6150

Corresponding Author's Email Address: T.Le@murdoch.edu.au

Abstract: *This study examines the possibility of using widely known implied volatility (IV), realized volatility (RV) and GARCH volatility (GV) as input for Merton (1973) version Black-Scholes (1973) (M-BS) options pricing model. Since the construction method, information obtaining procedure, information containing characteristic and prediction capability of IV, RV, GV are distinct, the purpose of this study is to analyse which volatility information content is appropriate for pricing currency options correctly and which one incorporate relevant market information for the accurate currency options price forecast. The accuracy of options price is crucial for managing financial risk, speculative purposes and preventing the abnormal arbitrage profit.*

Keywords: *Implied volatility, GARCH volatility, Realized volatility, Option pricing, Option forecasting.*

JEL Classification: *G17*

1. INTRODUCTION

Currency options are one of the greatest innovations in the financial derivative markets. These options were designed not as a substitute for forward or futures contracts, but as an additionally and potentially more versatile financial derivative that can offer significant opportunities and advantages to those seeking protection from financial distress or from investments resulting from changes in the foreign exchange (FX) rate. Over the past three decades, the use of foreign currency options as a hedging tool and for speculative purposes has blossomed into a major foreign exchange activity. Currency options can be traded on a regulated exchange where they are sold in a standardized form by fixing the underlying currency contract size, strike price and expiration date. However, over-the-counter (OTC) options are allowed for customization of the terms of the options contract (contract size, strike price and date of maturity).

Holding either exchange-traded or OTC currency options for the purpose of hedging or speculation is not costless. The options price (premium) is derived from underlying currency spot price. The premium is high for the in-the-money (ITM) options (for call, spot price higher than strike price; for put, spot price lower than strike price). The premium is low for the out-of-the-money (OTM) options (for call, spot price lower than strike price; for put, spot price higher than strike price). Therefore, options premium plays a significant role to determine the state of FX market.

Using the Merton (1973) version of Black-Scholes (1973) model (M-BS), the currency options price is based on six elements: current spot price, strike price, domestic currency interest rate, foreign currency interest rate, time to maturity and volatility of the underlying currency. The first five components of options price are obtainable from the financial market, whereas the volatility is unobservable. The volatility captures the up or down movement of the underlying FX rate which has a significant effect on the options price. The appreciation of FX rate leads to an increase in the call options price and a decrease in the put options price. If the FX rate decreases, the price of the calls decreases and puts increases.

Therefore, a precise measure of volatility is crucial for accurately estimating and forecasting currency options price.

The objective of this research is to examine the possibility of using widely known implied volatility (IV), realized volatility (RV) and GARCH volatility (GV) as input for M-BS options pricing model. Accordingly, the paper has been structured as follows. A brief consideration of the literature involving IV is discussed first, followed by the analysis of RV in Section 3. Section 4 provides the literature on GV for pricing options, following the conclusions in Section 5.

2. IMPLIED VOLATILITY

The implied volatility (IV) makes the options theoretical price equal to the options market price. Since IV is driven from currency options market price, it possesses the forward-looking characteristic which leads wide use of IV widely as a good estimate and forecast of FX volatility. The IV is estimated using appropriate option pricing model. The U.S. dollar is the settlement currency for all foreign currency options in this IV literature review.

In the early research, using currency options, Scott and Tucker (1989) show that the IV captures nearly 50 per cent of the actual currency volatility. When historical volatility is included in the information set, the authors find no improvement in the predictive accuracy. Jorion (1995) examines the forecasting ability of IV based on the Swiss franc (CHF), German mark (DEM) and Japanese yen (JPY) options price and finds that IV outperforms statistical time-series models in terms of information content and predictive power. Xu and Taylor (1995) analyse the informational efficiency of IV for the price of options on CHF, DEM, JPY and GBP and conclude that the sample currency options price contain incremental information about future FX volatility. Ederington and Lee (1996) find that the observed tendency for the implied standard deviation (ISD) of DEM option to fall on Fridays and rise on Mondays is due to the weekday pattern of scheduled news releases.

Kazantzis and Tessaromatis (2001) study the predictive power of IV with the Australian dollar (AUD), Canadian dollar (CAD), CHF, DEM, GBP and JPY. They suggest that the IV has more information content than measures based only on information embedded in past history and is generally better than either historic or GARCH based volatility forecasts for horizons ranging from 1 day to 3 months. Covrig and Low (2003) also confirm that the IV of AUD, GBP and JPY options has more predictive power than the historical standard deviation, RiskMetrics, and GARCH-based volatility for 1, 2, 3 and 6-month horizons. Kim and Kim (2003) research show that the IV of CAD, CHF, DEM, GBP and JPY options tend to be low in the early part of the week while they remain high in the later part of the week from Wednesdays. The Pong et al. (2004) find that the IV of DEM, GBP and YEN incorporate most of the relevant information for the forecast horizon is either 1 month or 3 months. Christoffersen and Mazzotta (2005) show that IV of ATM options on Euro (EUR), GBP and JPY provide largely unbiased and fairly accurate forecasts of 1 and 3 months ahead of actual volatility. Chang and Tabak (2007) produce evidence that the IV of Brazilian real (BRL) options contains significant information which is missing in the econometric models and provides superior FX forecasts.

In the present research, Bush et al. (2011) find that the IV of ATM options on DEM contains incremental information and performs as an unbiased forecast in the FX market. Marshall et al. (2012) show that the IV of ATM options on CHF, EUR, GBP and JPY tends to drop on the announcement day and its' impact on positive news is generally not different from the negative news. Pilbeam and Langeland, (2015) confirm that the IV of CHF, EUR, GBP and JPY forecasts significantly outperform the GARCH model in both low and high and volatility period of FX market.

3. REALIZED VOLATILITY

Since the 1990s, the explosion of information technology provides the access to time-stamped observations on all quotes and transactions. Using these tick-by-tick ultra-high frequency data the intraday returns are estimated and constructed the realized volatility (RV) as the sum of squared intraday returns. Taylor and Xu (1997) estimate the RV at hourly and daily level for five-minute returns of DEM/USD quotations in order to construct the conditional variances of hourly and daily returns, respectively. They find that there is a significant amount of information in five-minute returns in the hourly conditional variances rather than in the daily conditional variances and forecasts of hourly RV are more accurate.

A number of studies use five-minute returns to estimate the RV and examine its properties from different perspectives. Andersen, Bollerslev, Diebold and Labys (2000, henceforth, ABDL) examine FX rates, and consider the unconditional and conditional distribution of the exchange rate volatilities and correlations, and find that exchange rate returns standardized by RV are nearly Gaussian and realized variance tend to be log-normally distributed. ABDL (2001) derive the theoretical and empirical properties of RV for DEM/USD and YEN/USD exchange rates, based on earlier work of Taylor and Xu (1997). They find that the volatility movements are highly correlated across the two exchange rates and the correlation between the exchange rates increases with volatility.

Maheu and McCurdy (2002) investigate the nonlinear features of RV which are constructed using every five-minute DEM/USD exchange rate. They find the nonlinearity in RV may result in better volatility forecasts with a number of implications including the precision of forecasts, hedging, and pricing of derivatives. Li (2002) show that the RV of DEM/USD, GBP/USD and JPY/USD exchange rates incorporates incremental information regarding future volatility at horizons ranging from one month to six months. Using continuously recorded observation for the DEM/USD and YEN/USD, ABDL (2003) find that forecasts from a simple long-memory Gaussian vector autoregression (VAR) for the logarithmic daily RV tends to outperform traditional historical price models which use low-frequency returns for exchange rate volatility forecasting. Pong et al. (2004) find that the RV of DEM/USD, GBP/USD and YEN/USD exchange rates provide the most accurate forecasts for the one-day and one-week forecast horizons.

Lanne (2006) introduce a multiplicative error model (MEM) and fitting with the daily RV series of DEM/USD and YEN/USD exchange rate returns and show that the forecasting performance of the MEM is superior to that of Andersen et al. (2003) set of volatility models for the same data. Lanne (2007) shows that the out-of-sample forecast of RV based on the exchange rate returns of EUR/USD and EUR/JPY can be improved through decomposing into its continuous sample path and jump components. Hooper et al. (2009) find that the weekly RV of 30 min returns of AUD/USD, GBP/USD, USD/CAD, USD/CHF), GBP/JPY and USD/JPY exchange rates produce the lowest or close to the lowest forecast error for forecast horizons ranging from 1 week up to 1 month.

In the recent research, Choi et al. (2010) find that structural breaks in the mean can partly explain the persistence of RV of the DEM/USD, YEN/USD and YEN/DEM exchange rates. Their proposed VAR-RV-Break model provides superior predictive ability when the timing of future breaks is known. However, VAR-RV- $I(d)$ long memory model provides a robust forecasting method when the break dates and sizes are unknown. Chortareas (2011) find that the intraday FIGARCH model and the ARFIMA model outperform other traditional models for 5 min interval exchange rates of EUR/CHF, EUR/GBP, EUR/JPY and EUR/USD. Barunik et al. (2016) propose an enhanced approach to modelling and forecasting volatility based on Realized GARCH with multiple time-frequency decomposed RV of GBP, CHF and EUR futures. They find that most of the information for future volatility derives from RV of the spectra representing very short investment horizons.

4. GARCH VOLATILITY

Over 50 years ago Mandelbrot (1963) observe one of the most significant characteristics of financial data, the volatility clustering, which is distinct from the fact that today's and yesterday's volatility is positively correlated. Therefore, yesterday's high (low) volatility leading to today's volatility high (low). Fama (1965) shows that the financial returns display pronounced volatility clustering. Evidence on volatility clustering and persistence reveals that most recent observations contain most information regarding volatility in the immediate future than do older observations. The GARCH is one of the widely known models to estimate the volatility with managing the volatility clustering issue. This model employs weighting schemes in which the most recent squared return deviations receive the most weight, and the weights gradually decline as the observations recede in time.

The volatility clustering has been empirically documented numerous times for a variety of assets including commodities, equities and currencies. The occurrence of volatility clustering in the exchange rate return implies that the dynamics of volatility for exchange rate is inherently predictable. This observation has led to the construction of empirical models of exchange rate returns which allow for conditional heteroscedasticity. Following the success of Engle's (1982) ARCH model, the capturing the dynamic of conditional volatility, Bollerslev (1986) proposed an extension of Generalised ARCH (GARCH) model; Nelson (1991) the exponential GARCH model; and Engle and Ng (1993) the non-linear asymmetric GARCH, among many others. A considerable GARCH literature is reviewed in Bollerslev, Chou, and Kroner (1992).

Klaassen (2002) shows that GARCH model forecasts significantly better out-of-sample volatility of DEM/USD, GBP/USD and JPY/USD exchange rate. Galbraith and Kisinbay (2005) investigate the maximum horizon at which conditioning information has exploitable value for variance forecasting of GARCH model using the DEM/USD and YEN/USD exchange rate returns. They find evidence of forecasting power at horizons of up to 30 trading days.

Ederington and Guan (2005) find that GARCH (1,1) provides better forecasts than the historical standard deviation and exponentially weighted moving average models. Rapach and Strauss (2008) find significant structural breaks in the unconditional variance of seven out of eight exchange rate return series over the 1980-2005 period suggesting unstable GARCH processes for the sample exchange rates which leads the substantial variation in GARCH(1,1) parameter estimation across the subsamples defined by the structural breaks.

In the current research, McMillan and Speight (2012) finds that the intraday unadjusted-data GARCH (1,1) model provides superior forecasts compared to daily GARCH (1,1) for EUR/USD, EUR/GBP and EUR/YEN exchange rate volatility. Chkili et al. (2012) employ univariate and multivariate GARCH-type models to investigate the properties of conditional volatilities of stock returns and exchange rates. Their results show strong evidence of asymmetry and long memory in the conditional variances of all the series considered. Engle and Sokalska (2012) propose a new intraday volatility forecasting model which is applied to a comprehensive sample consisting of 10-minute returns on more than 2500 US equities. They find that the addition of a new stochastic intraday component gives better volatility forecasts than the benchmark models. Similarly, Hansen et al. (2012) introduce a new framework, Realized GARCH, for the joint modelling of returns and realized measures of volatility. Their empirical application with Dow Jones Industrial Average stocks and an exchange traded index fund shows that a simple Realized GARCH structure leads to substantial improvements in the empirical fit over standard GARCH models that only use daily returns. Boudt et al. (2013) propose a multivariate volatility forecasting model an extension of the dynamic conditional correlation (DCC) model for higher forecasting accuracy in the presence of large one-off events. Their method produces more precise out-of-sample covariance forecasts than the DCC model for EUR/USD and Yen/USD exchange rates return. Singh et al. (2013) use the Multiplicative Component GARCH (MCGARCH) model of Engle & Sokalska (2012) to model and evaluate intraday VaR for three high-frequency intraday intervals of 1 minute, 5

minutes and 10 minutes of ASX-50 stock market. The results suggest that the MCGARCH model fits well to the high frequency intraday returns and it fits well to the changing dynamics of the intraday stock prices.

5. CONCLUSIONS AND RECOMMENDATIONS

This paper aims to explore the possibility of using widely known implied volatility (IV), realized volatility (RV) and GARCH volatility (GV) as input for M-BS options pricing model. The IV is estimated using appropriate options pricing model with the forward-looking characteristic. It contains incremental information of FX market. It incorporates most of the relevant information and holds superior predictive power for FX volatility. The IV of ATM options provides largely unbiased and fairly accurate forecast in the FX market. Most common forecast horizon of IV is 1 and 3 months in the previous studies. The IV tends to be low and high in the early and later part of the week, respectively. However, due to the weekday pattern of schedule news releases the IV falls on Fridays and rises on Mondays.

The nonparametric RV is constructed as the sum of squared intraday returns where the intraday returns are estimated using historical tick-by-tick ultra-high frequency data with the standard five-minute exchange rate returns. There is a significant amount of information in five-minute returns in the hourly conditional variances rather than in the daily conditional variances. The future FX volatility forecast horizons mostly ranging from one month to six months. However, the weekly RV of 30-minute returns provides the lowest forecast error for short forecast horizons which are one day and one week.

The statistical GARCH model is employed to estimate the GV with managing the volatility clustering by allocating the most weight for the most recent squared return deviations, and the weights gradually reduce as the observations recede in time. The GV forecasts significantly better out-of-sample exchange rate volatility. Further, the intraday unadjusted-data GV provides superior exchange rate forecasts compare to daily GV. The better forecast horizons of GV are up to 30 trading days.

In conclusion, the construction method, information obtaining procedure, information containing characteristic and prediction capability of IV, RV and GV are distinct and these are only used for estimating and forecasting FX market volatility. It creates a research gap with two research questions: (1) Is IV, RV and GV information content appropriate for pricing currency options correctly? (2) Do IV, RV and GV incorporate relevant market information for the forecast currency options price accurately? In the near future, more research needs to be conducted to fill this research gap.

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Sustainability Reporting in Australia's Resources Industry: The Undisclosed Items

T. Ong and H. Djajadikerta

School of Business and Law, Edith Cowan University, 270 Joondalup Drive, Joondalup, Western Australia, 6027

Corresponding Author's Email Address: s.ong@ecu.edu.au

Abstract: *Most studies in sustainability reporting have focused on items disclosed in companies' reports. This paper adopts a reverse perspective to investigate what information is generally undisclosed in companies' disclosures. Using a new scoring index that differentiates hard verifiable disclosures from soft non-verifiable ones, this study evaluates reporting practices of companies in Australia's resources industry. It is found that companies generally did not disclose on report credibility, sustainability spending and initiatives and human rights and product responsibility categories in the social aspect of sustainability. This industry-specific study suggests that substantial improvements are required in the current sustainability reporting practices and performance.*

Keywords: *Sustainability reporting, Resources industry, Australia, Hard and soft disclosures*

JEL Classification: *M4, N5*

1. INTRODUCTION

Recent developments in sustainability reporting have identified a strong demand from both academics and stakeholders of business organisations to see an alignment of sustainability disclosure to sustainability performance (Burritt & Schaltegger, 2010; Gray, 2010; Gray, Javad, Power & Sinclair, 2001; Gray & Milne, 2002; Milne & Gray, 2013; Weidinger, Fischler & Schmidpeter, 2014).

Researchers with a critical perspective on companies' sustainability reporting have found companies' sustainability disclosures to have no or little relevance with sustainability (Gray, 2010; Gray et al., 2001; Gray & Milne, 2002; Milne & Gray, 2013). Gray (2010, p. 48) explained that the "relationships and interrelationships [of sustainability] are simply too complex" and any simple assessment that is used to evaluate the relationship between "a single organisation and planetary sustainability is virtually impossible". He believed that it is not possible to put any tangible meaning to sustainability at an organisational level as this means ignoring the correct understanding of sustainability altogether because sustainability is a systems-based concept that would be difficult to conceptualise at the level of ecosystem. He questioned the ability of companies to understand this complex concept of sustainability to produce appropriate and measurable accounts of sustainability that are related to effective sustainable developments for society. His views were supported by many prior researches (Aras & Crowther, 2009; Cho, Lee & Pfeiffer, 2012; Gray et al., 2001; Milne & Gray, 2013).

Gray (2010, p. 50) further alleged that companies nowadays tend to use their sustainability reports as a "linguistic devices" to proclaim their social responsibility while diverting attention away from actual sustainability performance. He asserted that these reports "do not constitute genuine accounts of sustainability, but are "powerful fictions" because it is common to assume a successful business will have to be socially and environmentally responsible and thus there would be generally no verification to ensure that the business is actually socially responsible. According to Gray, this consequently leads to a decline in real sustainability performance and cause un-sustainability that ironically contradicts the fundamental notion of sustainability.

Despite the availability of a comprehensive sustainability reporting guidelines - the Global Reporting Initiatives (GRI) framework, Gray (2010) claimed that the problem remain unresolved as the GRI framework merely includes all three aspects (social, economic and environment) of sustainability but it still fails to establish relationships between the demand for sustainability performance to the reported disclosures. Milne and Gray (2013, p. 21) described the GRI framework as “both partial and incoherent”. They argued that the GRI framework is partial as the full range of performance indicators represent on one part the difficulty to produce acceptable indicators and the other part which companies are reluctant to produce as they are too demanding. They also claimed that the GRI framework is not coherent as there is a lack of over-arching theory to guide the selection of reporting indicators and to ensure that the selected indicators are related to one another and capable to address the issues of concern.

This study addresses the problem of identifying companies’ sustainability disclosures that fails to align to their sustainability performance with the use of a new scoring index that integrates the fundamental principles of hard and soft disclosure items in Clarkson, Li, Richardson & Vasvari (2008) to the GRI framework. Clarkson et al. (2008) classified the GRI environmental performance indicators into hard and soft disclosure items. Hard disclosure items refer to disclosures that are “relatively difficult for poor environmental performers to mimic” and thus these disclosures are awarded higher scores as they represent companies’ real commitments to sustainability (Clarkson et al., 2008, p. 313) . On the other hand, soft disclosure items relate to information which is relatively difficult to verify with companies’ actual efforts to protect the environment, such as companies’ vision and environmental strategy claims, and hence they are allocated with lower scores. Clarkson et al.’s (2008) index provides an improved measurement to evaluate environmental disclosure because companies with genuine contributions to environmental sustainability can be identified through the higher scores awarded by the index. Ong, Trireksani and Djajadikerta (2016) builds on the fundamental principles of Clarkson et al.’s (2008) environmental index and develops a new index that includes the social and economic aspects of sustainability which were not covered by Clarkson et al. This study adopts Ong et al.’s scoring index to evaluate companies’ sustainability disclosures in all three aspects – economic, environmental and social – of sustainability.

To date, most of the research studies in sustainability have focused on what were disclosed in companies’ sustainability reports. This paper adopts a reverse perspective to investigate what information is generally undisclosed in companies’ sustainability disclosures. The main contribution of this study is to identify and review the areas where sustainability disclosures are minimal in companies’ reports. By exploring potential reasons for these omissions, this study aims to enhance understanding for the non-disclosure items in companies’ reports and thereby identify practical avenues to improve companies’ disclosures.

This research has chosen to focus on Australia’s resources industry to explore the impact of regulatory compliance on companies’ sustainability reporting practices. Australian resources companies have been required to provide mandatory environmental reporting in their annual reports since July 1 1998 (Adams & Frost, 2007; Deegan & Gordon, 1996; Frost, 2007; Jones, Frost, Loftus & Laan, 2007; Wood & Ross, 2008). The resources industry is also governed by the extractive industry accounting standard AASB 1022 which stipulates that environmental information such as provision for site restoration and land rehabilitation and associated costs for treatment of waste materials is disclosed in company annual reports (Deegan, 2013). Furthermore, these companies are governed by regulatory measures which include pollution taxes and penalties for breaches of environmental regulations monitored by the Environment Protection Authority in Australia. While some studies have been conducted on sustainability reporting in the resources industry, most of these studies have focused on the environmental disclosures with little discussion on the social and economic aspects of sustainability. Hence, this research investigates whether companies in the resources industry provide relatively more environmental disclosures over the social and the economic aspects of sustainability due to the legal obligation for mandatory environmental reporting.

2. DATA AND METHODOLOGY

This study selects the sample from top 100 companies based on market capitalisation that are listed on the resources industry of the Australian Securities Exchange (ASX). Data was collected from both the annual financial reports and standalone sustainability reports of these companies for the period ending 30 June 2012. The sample consists of 133 companies and the total market capitalisation of the sample companies represents approximately 22% of the total market capitalisation of listed companies as at October 2012 (Australian Securities Exchange, 2012).

Content analysis method was applied to score the companies' reports using a new scoring index developed in Ong et al. (2016). Ong et al.'s index has a total of seven categories, A1 to A7, where A1 to A4 relates to hard verifiable disclosure items and A5 to A7 relates to soft non-verifiable disclosure items. Data were coded and scored according to the scoring criteria applicable to the hard and soft disclosure items. While soft disclosure items are scored one or zero based on the presence or absence of a disclosure item, hard disclosure items are awarded a score of zero to six, depending on whether the information disclosed is presented relative to a range of indicators. A point is awarded when performance data is presented and more points are awarded if the data is presented with information relative to peers or industry; relative to previous period; relative to targets; in both aggregate and normalised form; or at disaggregate level. A detailed scoring index extracted from Ong et al. (2016, Table II) is contained in section 1.6- Appendix. It indicates the different categories, disclosure items and maximum scores under the broad classification of hard and soft disclosure items.

3. RESULTS

Table 1 below summarises the descriptive statistics of scores awarded to the sample companies under the different categories of the new scoring index. The last column shows the mean of percentage disclosed based on the respective maximum possible scores in each categories.

Table 1 Descriptive statistics for dependent variables

Categories in scoring index	Maximum Possible Scores	Mean	Median	Standard Deviation	Minimum-Maximum	Range	Mean of Percentage disclosed
A1: Governance	9	5.69	5.00	2.04	2 -9	7	63.24%
A2: Credibility	5	1.33	0.00	1.66	0 - 5	5	26.62%
A3: Performance Indicators							
A3: Economic	18	6.95	6.00	3.82	0 – 18	18	38.6%
A3: Environmental	66	11.59	7.00	11.57	0 -59	59	17.56%
A3: Social–Labour	36	11.35	11.00	7.25	0 – 31	31	31.52%
A3: Social-Human Rights (HR)	54	2.83	0.00	6.21	0 -32	32	5.25%
A3: Social-Society	30	2.68	1.00	4.13	0 – 26	26	8.92%
A3: Social-Product Responsibility (PR)	30	3.54	0.00	5.72	0 – 29	29	11.80%
A4: Spending	2	0.59	0.00	0.72	0 – 2	2	29.70%
A5: Vision	7	5.33	7.00	2.44	0 -7	7	76.15%
A6: Initiatives	3	0.36	0.00	0.77	0 – 3	3	12.03%
A7: Disclosure of Management Approach (DMA)							
A7: Economic	3	1.56	1.00	0.79	0 – 3	3	52.13%
A7: Environmental	9	2.92	2.00	2.12	0 – 9	9	32.50%
A7: Social–Labour	6	2.90	3.00	1.47	0 – 6	6	48.37%
A7: Social-HR	9	0.97	0.00	1.94	0 – 9	9	10.78%
A7: Social-Society	5	0.79	1.00	1.02	0 – 5	5	15.79%
A7: Social-PR	5	0.81	0.00	1.24	0 – 5	5	16.24%
Total Hard (A1 to A4)	250	46.55 (18.62%)	36.00 (14.40%)	35.17	10 - 203	193	
Total Soft (A5 to A7)	47	15.65 (33.30%)	14.00 (29.79%)	8.99	2 - 47	45	
Total Disclosure (A1 to A7)	297	62.20 (20.94%)	50.00 (16.84%)	43.74	12 - 248	236	

On average, the companies were disclosing only 20.94% of the total disclosures. They disclosed 14.68% more soft disclosures (33.30%) than hard disclosures (18.62%). The large range of scores among the various categories of disclosure items also indicates the vast differences in the companies' disclosures on sustainability information that hinder comparability.

Consistent with most empirical research in sustainability disclosures, this study found companies in Australian resources industry providing very minimal disclosures (Dong & Burritt, 2010; Frost, 2007). The mean of the total disclosure (category A1 to A7) was merely 20.94%, which is way below the passing mark of 50%. To exacerbate the problem, all 133 sample companies reported more soft than hard disclosure items. These results indicated the two-fold problems of sustainability reporting practices among companies in the Australian resources industry. Firstly, the level of sustainability disclosures was low. Secondly, the low level of disclosure consisted mainly of soft disclosure items that relate to generic non-verifiable information that suggests a low quality of sustainability disclosure and performance.

In view of the extreme scores, the median is considered to be a better measure of the average than the mean as the median is relatively not affected by extreme scores (Field, 2013). As shown in Table 1 above, there are 7 out of 17 categories (41.18%) that have zero in median. This suggests that, on average, the sample companies had no disclosure in these seven categories. Among these categories, four categories relate to the hard disclosure items (credibility - A2, performance indicators of human rights and product responsibility - A3-HRP and A3-PRP, spending on sustainability expenditures - A4), and three categories relate to the soft disclosure items (sustainability initiatives - A6, disclosure on management approach to human rights and product responsibility - A7-HRP and A7-PRP). Focusing on these seven categories that had zero median, this paper reviews the results to examine the implications and to suggest probable reasons for the non-disclosure of these items by considering results and evidence in past literature.

Hard disclosure items are generally more complex in reporting and consequently are more demanding on companies. In the absence of legislation demanding specifically for disclosures of the hard items, companies tend to disclose more soft items. This is evident from the results of this study where all the 133 sample companies disclosed more soft disclosure items. Therefore, indicating that this could be one of the major contributory factors for the low disclosures in hard disclosure item A2 and A4. In addition, both category A2 and A4 have another challenging aspect as they involve a third party's verification, which makes it difficult for poor sustainability performers to mimic. While disclosure that can be verified by an independent third party greatly increases its reliability and validity, companies that do not practise these are likely to omit disclosures in these categories.

A2 assesses the credibility of companies' sustainability disclosures and activities. It verifies this information by examining the reporting framework adopted by companies and determining whether companies engage a qualified independent assurer to audit the sustainability information presented. Companies that have participated in initiatives that improve sustainability practices recommended by industry specific and other organisations are also awarded scores under category A2. Assuming companies that engage in these credible initiatives would have included them in their reports, the low disclosure in category A2 indicates that the majority of the companies in the Australian resources industry have not adopted these practices. Romero, Lin, Jeffers, and DeGaetano (2014) highlighted several concerns and problems raised in prior research on sustainability assurance: absence of a systematic procedure to assess the competence of assurance providers (Oelschlaegel, 2004); independence of assurance providers and the quality of assurance practice (O'Dwyer & Owen, 2005); lack of appropriate assurance criteria (Hasan, Maijoor, Mock, Roebuck, Simnett & Vanstraelen, 2005) and limited guidance from assurance standards for practitioners (O'Dwyer, 2011). Hence, the low disclosure in category A2 could be attributed to the existence of these problems.

Likewise, category A4, which measures the monetary spending in sustainability, requires companies' genuine monetary contribution as verification can be easily performed with an independent third party.

The minimal disclosure in this category reflects that most of the sample companies have not contributed their capital resources in sustainability issues. This phenomenon is likely due to the inconsistent outcomes from expenditure incurred to improve sustainability. While some studies found a positive correlation between company value and company's sustainability efforts (Ameer & Othman, 2012; Burnett, Skousen, & Wright, 2011), others did not find any association (Guidry & Patten, 2010) while other studies found a negative correlation (Lee, Faff, & Langfield-Smith, 2009). These inconsistent results identified in prior research also explain the minimal disclosure in category A6 on sustainability initiatives.

A6, which relates to sustainability initiatives, measures disclosures of companies' internal sustainability efforts that may include their provision of awards for staff who have demonstrated sustainability efforts and for companies with internal audit or certification in place for their sustainability activities. Companies with these initiatives are deemed to have genuine sustainability commitments as it requires the contribution of valuable human and technical resources to develop these initiatives. Thus, the low disclosure in category A6 indicates a lack in such commitments. Romero et al. (2014) explained that companies are often reluctant to invest in sustainability initiatives that require huge initial capital investment and compel companies to amend their processes and rebrand their products, given the uncertainty of measurable increased value to companies. It is also possible that companies are lacking adequate knowledge and skills to develop and implement suitable sustainability initiatives in their business operations.

Performance indicators (A3) and disclosure of management approach (A7) in the social aspects of human rights (HR) and product responsibility (PR) were also identified as categories with minimal disclosure among the sample companies. This outcome is most likely due to the context of the resources industry. Issues covered in the HR aspect such as non-discrimination, child labour and violation of human rights are less likely to occur in the resources industry because these companies are normally bound by very stringent labour laws that are enforced at their project sites with limited access to unauthorised staff. The resources companies, which operate mainly in the extraction of raw materials, have their clientele consisting large processing and manufacturing companies with good product knowledge. Hence, issues in the PR aspect such as customer health and safety, product information and customer privacy are less relevant to these companies, and this may have contributed to the low disclosure.

A3-HRP that relates to the hard specific performance indicators of human rights (HR) has the lowest percentage of disclosure. Items in category A3 are scored based on the presence of six indicators: data presented, peer/industry, previous period, targets, absolute and normalised form, and disaggregated level. The difficulty of presenting information in the HR aspect, which tends to be more qualitative by nature, in the format of these six indicators is acknowledged. It is evident that companies generally do not set quantitative targets or refer to previous periods for human rights issues. It is also difficult for companies to obtain an industry average or benchmark that can be relevant and available as this is still a relatively new area in the sustainability arena where disclosure is limited (McPhail & Ferguson, 2016).

A3-SOP that relates to hard specific performance indicators of society also has low disclosures. This result is anticipated as it is normally more difficult for companies to adhere to the requirements in the A3 category that require detailed information in various quantifiable data. In the A3-SOP categories, companies are expected to provide disclosures on companies' engagement with issues relating to local communities, corruption and public policy such as lobbying and anti-competitive behaviour. These issues that tend to be more sensitive and controversial could have resulted in companies' reticence to provide disclosures in this category. In line with the results in the study of Barkemeyer, Preuss and Lee (2015) on corruption across companies operating in different geographical regions, Australian companies in the mining industries were found to be among those with minimal disclosures compared to companies in the Asian region and those in the banking industry.

4. CONCLUSIONS AND RECOMMENDATIONS

Traditionally, prior studies in sustainability have focused on what were disclosed in companies' sustainability reports. This paper adopts a reverse perspective to identify and investigate the areas where sustainability disclosures are minimal in companies' reports. Using a new scoring index developed in Ong et al.'s (2016) that differentiates hard verifiable disclosure items from soft non-verifiable ones, the study found that companies in the Australian resources industry generally do not disclose information in seven categories. These seven categories include four categories that relate to the hard disclosure items (credibility - A2, performance indicators of human rights and product responsibility - A3-HRP and A3-PRP, spending on sustainability expenditures - A4), and three categories that relate to the soft disclosure items (sustainability initiatives - A6, disclosure on management approach to human rights and product responsibility - A7-HRP and A7-PRP). By exploring potential reasons for these omissions, this study enhances understanding for the non-disclosure items in companies' reports and thereby identify practical avenues to help improve companies' disclosures.

This study found companies in the Australian resources industry generally disclose very minimal sustainability disclosures. To exacerbate the problem, the reported items were mostly soft generic disclosures that are difficult to verify, suggesting that companies tend to make tokenistic gestures towards mandatory requirements for sustainability reporting. Companies were also producing vastly different disclosure items that hinder comparability.

Despite the mandatory environmental disclosures from these companies, there is a general low quality of sustainability reporting in this environmentally sensitive industry. This is concerning as it appears that little improvement has been made in this industry as similar results were obtained in Dong and Burritt's (2010) on companies in the Australian oil and gas industry in 2006. Dong and Burritt found that companies were reporting very broad social and environmental disclosures that lacked quantity and quality.

This industry-specific study suggests that substantial improvements are required in the current sustainability reporting practices and performance. The new Ong et al.'s (2016) scoring index presents a benchmark for quality sustainability reporting by identifying specific disclosure items that may be missing in companies' sustainability reports. The new index provides a standardised reporting framework for future research studies with more specific guidelines, especially on hard verifiable disclosure items that promote the alignment of companies' sustainability disclosures to good sustainability performance.

This research study has collected its data from annual and stand-alone sustainability reports of companies in the Australian resources industry in the year of 2012. With more companies providing sustainability disclosures through their corporate websites, future research may include companies' corporate websites as an additional data source and expanding studies to evaluate companies in other industry types and across different countries.

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Appendix

The new GRI-based scoring index (Source: Ong et al., 2016, p.206)

Category	Items	Maximum scores
<i>Hard disclosure items: A1-A4</i>		
A1	Governance structure and management systems	9
A2	Creditability	5
A3	Economic performance indicators (ECP)	3
	Environmental performance indicators (ENP)	11
	Social performance indicators – labour (LAP)	6
	Social performance indicators – human rights (HRP)	9
	Social performance indicators – society (SOP)	5
	Social performance indicators – product responsibility (PRP)	5
A4	Spending related to sustainability	2
	Total hard disclosure items	55
<i>Soft disclosure items: A5-A7</i>		
A5	Vision and strategy claims	7
A6	Sustainability initiatives	3
A7	Disclosures on management approach – economic	3
	Disclosures on management approach – environmental	9
	Disclosures on management approach – labour	6
	Disclosures on management approach – human Rights	9
	Disclosures on management approach – society	5
	Disclosures on management approach – product	5
	Total soft disclosure items	47
Total disclosures		102
		297

Extended Abstracts

The Era of Brexit and Its Influence on European Union Member States, Europe and the Rest of the World

A. Golab^a, K. Knight^a and A. Zamojska^b

^aSchool of Business and Law, Edith Cowan University, 270 Joondalup Drive, Joondalup, Western Australia, 6027

^bUniversity of Gdansk, Faculty of management, Departemnt of Econometrics, ul. Armii Krajowej 101, 81-824 Sopot

Corresponding Author's Email Address: a.golab@ecu.edu.au

ABSTRACT

The Brexit referendum outcome is nothing short of an earthquake affecting stock markets across the world, wiping US\$2 trillion off their value. Turmoil in offshore markets can have a large impact on Australia's economy, markets and trade. To measure these impacts, this and the proposed future research will apply econometric techniques to model dependence between Global, Australian and European Union stock markets. This study will formulate improved understandings of the interdependency of markets, and lead to recommendations for managing these impacts to help policy makers develop a stronger economic framework for Australia, and political leaders to develop constructive relationships with the UK and EU.

PURPOSE & AIM OF THE STUDY

The purpose of this study is to review the literature to explore published contributions on stock market behaviour after extreme crisis events including the European sovereign debt crisis, the Greek debt crisis, the China "Black Monday disaster and the Brexit referendum outcome meltdown. The authors aim to identify factors which influence the financial markets and initiate crises to occur. To achieve this, we investigate equity market behaviour over more than a decade from 2005 to 2016, during which the above crises occurred. The study confines the analysis to an examination of impacts on the equity markets of US, EU, United Kingdom, Germany, France and Australia.

BACKGROUND

The European Union, often known as the EU, is an economic and political partnership involving 28 European countries (EU28). The EU was formed in 1949 from West Europeans nations and was originally called Council of Europe. This was the first step towards cooperation between European countries determined to stop all destruction and killing brought by the Second World War (Ruszkowski, Gornicz, & Zurek, 2004). On 18th April 1951 the six countries (Germany, France, Italy, Belgium, Netherlands and Luxemburg) signed the Schuman plan – a treaty to run their heavy industry of coal and steel under a common management (ECSC: European Coal and Steel Community), to prevent weapon

making and turning against each other. Since then the EU has been through seven enlargements. UK joined EU in its second enlargement in 1973. Over the years the EU has since grown to become a “single market” allowing goods and people to move around, as if the member states were one country. Thanks to the abolition of border controls between EU countries, people can travel freely throughout most of the continent. It has become much easier to live, work and travel abroad in Europe. The single or 'internal' market is the EU's main economic engine, enabling most goods, services, money and people to move without restrictions. The EU has its own currency, the euro, which is used by 19 of the member countries, its own parliament and it now sets rules in a wide range of areas, such as the environment, transport, consumer rights and even things like mobile phone charges. With GDP of more than US\$18,000 billion and a population of more than 500 million, it is the biggest economy in the world.

What does Brexit mean for the economy? The victory of the Brexit referendum vote sent economic shockwaves through global markets, causing UK stocks to have their worst drop since the Financial Crisis. Supporters of Brexit argue that EU countries have every incentive to keep trading with the UK, which is a large importer of goods and services. But Europhiles worry that foreign companies will be less likely to invest here and could relocate their headquarters if Britain loses access to the EU's single market (Casson, 2016). One of the Eurosceptics stated that the EU needs Britain more than Britain needs the EU (Zielonka, 2014). From his point of view, it seems like the concern is more that the EU and its members will need to protect themselves from the damage a close friend could inflict on itself.

The UK is one of the world's leading financial centres and the rest of the EU is its biggest customer; British finance is clearly highly sensitive to this risk, regardless of the advantages that Brexit might bring in terms of lighter-touch regulation. (Gordon, 2015). The most likely outcome of Brexit would be some kind of association agreement with the EU, similar to Norway, Switzerland and Turkey (Jensen & Snaith, 2016). The kind of deal the UK would be able to negotiate is uncertain, making it difficult to estimate the externalities that the UK may experience should it leave (Oliver, 2016). Concerns about maintaining and protecting European integration would, therefore, be the backdrop for which the EU agreed to adopt a new relationship with a departing UK (Boulanger & Philippidis, 2015).

METHODOLOGY AND FINDINGS

This study summarises a vast amount of literature using a framework that allows the reader to quickly absorb a large amount of information as well as identify specific works that they may wish to examine more closely.

The overall outcome shows similarity in reaction process and recovery during the above events to the global financial crisis. Non-Brexit crises have impacted global markets, leaving countries in temporary distress. In contrast, the analysis indicates that the Brexit referendum outcome only had a significant impact on the UK market, and some European Union countries, but less impact on US and Australian markets. The future of global economic and financial markets is uncertain, however, a preliminary case is made that learned behaviour from past crisis experience appears to be evident in global financial systems and that global markets were more secure and prepared for severe macroeconomic shocks at the end of the decade compared to the beginning of the decade investigated.

By providing a picture of what has been done, it may also assist the reader in identifying areas that should be the subject of future research such as applications of volatility and cointegration econometric analysis to model multivariate dependence between realised volatility estimates of EU and Australian stock markets. Both techniques can be used to measure market changes resulting from the UK exiting the European Union, in relation to risk and uncertainty.

Keywords: *GFC, European sovereign debt crisis, Greek debt crisis, China “Black Monday” meltdown, Brexit.*

JEL Classification: *G15*

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Research Gatekeepers: The Travelogue of Two Cities

D. Ng and A. Ogle

School of Business and Law, Edith Cowan University, 270 Joondalup Drive, Joondalup, Western Australia, 6027

Corresponding Author's Email Address: d.ng@ecu.edu.au

Doctoral studies are likened to a journey, oftentimes perilous and sometimes futile. Stanley (2015, p. 145) asserts that “most academics have travelled the PhD “journey” and many academic jobs include the role of tour guide, showing others the way”.

AIMS

1. To clarify data collection methodologies within an Asian context; and
2. To devise a practical methodology for mono-method data collection within an Asian context.

BACKGROUND

This paper describes the data collection phase of a PhD candidate's journey involving in-depth interviews with Human Resources (HR) practitioners in two major Asian tourism destinations (i.e. Singapore and Macau) featuring integrated casino/gambling resorts (IR). The comparative research methodology of a small but purposeful sample (Lewis-Beck et al., 2004) was adopted. During the study period (2014-2016) Singapore had two IR and Macau had five IRs in operation.

Having encountered numerous ‘roadblocks’, ‘detours’ and ‘dead ends’ attributable to the peculiarities of data collection methods and respondents’ world views, the difficulties appeared insurmountable. Consequently, the candidate embarked on writing a ‘travelogue’ of this research journey to complete a gap in the body of data collection methodologies thereby availing qualitative researchers embarking on a similar mono-method research journey a ‘route map’ which hitherto had not been charted.

Academic research in Asia is confounded by the complexity of national cultures (Steenkamp, 2001). Vallaster (2000) observed major differences vis-à-vis access to the research field and respondent recruitment attributed to East-West cultural barriers, thereby affirming previous observations that the realities of data collection within the Asian context are incongruent with mainstream research methodologies (Adair, 1995). Gatekeepers play a crucial role in qualitative research in Asia (Gummerson, 2000) underscored by strong relationship networks (Berwick, Ogle & Wright, 2003).

The recruitment of qualitative research participants in complex societies with ill-defined bounded groups requires special consideration (Arcury & Quandt, 1999). Whilst some Asian countries may be relatively homogeneous culturally, others are multi-cultural and some arguably influenced by their colonial heritage. Notwithstanding that Eurocentrism remains influential in Asia despite cultural heterogeneity (Miike, 2006), mainstream qualitative inquiry traditions that conform to mono-cultural research are ill-suited to a cross-cultural Asian context. A hybrid inquiry methodology is appropriate because of localised

phenomena of upward influence behaviours underscored by cultural dimensions of power distance and individualism versus collectivism (Terpstra-Tong & Ralston, 2002).

METHODOLOGY

This paper presents a process mapping representation of the data collection journey and illustrates a hybridised inquiry method developed to study the role of gatekeepers within the Asian context. Initially, senior HR practitioners ($n=10$) in Singapore and Macau were invited to participate in in-depth interviews via e-mail cold calls. However, because none of the invitations was acknowledged within the first month of data collection (July 2014), a different approach was required. Consequently, the candidate sought referrals to the HR practitioners via personal contacts.

FINDINGS/RESULTS

A total of ten respondents were interviewed. Prima facie securing respondents in Macau ($n=6$) appeared to be easier than in Singapore ($n=4$). The Macau interviews were finalised over a 19 month period (Aug. 2014 - March 2016). One interview (a major IR) was declined on corporate confidentiality grounds. One Red Herring, a prospect that eventuated in a dead end, was recorded. In contrast, the recruitment over a 27 month period (Sept. 2014 - Nov. 2016) in Singapore yielded four interviews and five Red Herrings. Interestingly, one Singapore interview was instigated by a Macau IR participant (Respondent #5). The findings confirm Berwick et al's (2003) observation that potential gatekeepers might not be bona fide gatekeepers due to circumstantiality and/or networking relationship quality as well as the key role of gatekeepers. Figure 1 below shows the outcome of the scope of networking activities and the extent of the network reach.

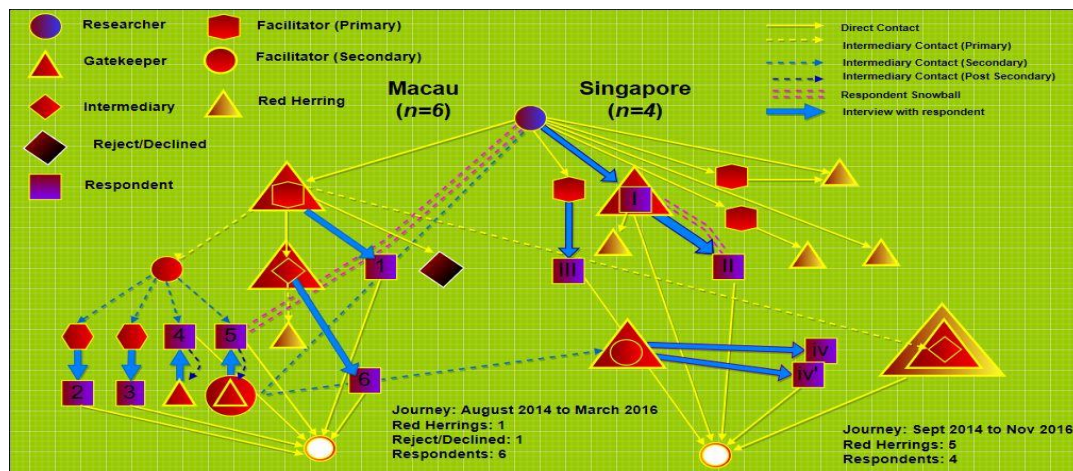


Figure 1. Data collection journey of interview solicitation (Macau & Singapore). Primary and secondary gatekeepers are highlighted. Actors with multiple roles have their initial role depicted in the foreground.

CONCLUSION

The material study suggests that a cold calling approach to obtaining primary data was inappropriate. This preliminary report on the findings of the data highlights the variability evident in data collection practices in two seemingly similar locations in Asia: major tourism destinations for outbound PRC visitation offering legalised gaming, and predominantly populated by ethnic Chinese residents.

The study will act as a springboard for a more detailed analysis of the individual network journeys with analysis of the actors involved and the timelines of each solicitation, and consideration of the impact of innovative cross-cultural research design and operationalisation within the Asian context.

Keywords: Gatekeeper, Qualitative Research, Cross Cultural Research, Networking, Ethnography

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Stakeholders' Engagement with Destination Brand to Deliver on Brand Promise: A West Australian Case Study

I. Zahra

School of Business and Law, Edith Cowan University, 270 Joondalup Drive, Joondalup, Western Australia, 6027

Corresponding Author's Email Address: i.zahra@our.ecu.edu.au

PURPOSE/ AIM & BACKGROUND

To be successful, branding strategies require stakeholder engagement to improve brand commitment to delivery on brand promise. While there has been a significant amount of scholarly attention focused on tourists' engagement with destination brands, there is a paucity of research that considers the relationship supply-side stakeholders have with destination brands. The purpose of this research is to provide a deeper understanding of supply-side stakeholders' engagement with tourism brands to deliver on brand promise. A West Australian case study was used to explore the complex relationships between multiple supply-side stakeholders and a plethora of destination brands, ranging from national to local focus.

Destination branding is a collective venture and effective implementation of branding strategies relies on inclusion of a wide range of destination stakeholders (Ritchie and Crouch, 2003; Jamal, Stein and Harper, 2002; Dinnie, 2011). The tourism sector is driven by various stakeholders in a destination, who are either private or public sector grounded by different agendas attached to organisational, political and marketing benefits, it is indeed a challenge to get everyone in a common platform to agree on (Freeman, 2007; Jensen, 2005). The consideration of supply-side stakeholders to understand destination brand is on the rise (Cai, 2002; Caldwell & Freire, 2004). A lack of brand understanding may cause disconnected external and internal branding outcomes leading to a mismatch between promised and projected brand values (Boone, 2000). Employees in the tourism industry play a crucial role in destination brand management as employees connect the brand with the market, thus has the ability to make a significant contribution in the success of the brand. Therefore, a brand message needs to be rolled to stakeholders in the market consistently to reflect what is actually being delivered (King and Grace, 2005). Communication, education and training have gained attention from branding practitioners and are considered the most influential component to impact employee's brand engagement (Burmam, Zeplin & Riley; 2008; Chong, 2007; King & Grace; 2008; Punjaisri & Wilson, 2007; Vallaster & de Chernatony, 2006).

METHODOLOGY

A mixed method approach was adopted for this study. The rationale behind this choice is its applicability for this particular line of inquiry, where the collection of just one type of data was deemed insufficient to comprehend the phenomenon (Creswell & Plano Clark, 2011). The research was conducted in two phases: phase one involved web content analysis of DMOs and stakeholders' websites operating in Western Australia. Phase two consisted of 19 semi-structured interviews with DMOs and stakeholders directly participating in tourism in Western Australia.

FINDINGS

This research proposes to build on the established Internal Brand Equity for Tourism Destination (IBETD) model by incorporating brand understanding with brand awareness, image, commitment and

loyalty to enhance stakeholders' ability to deliver on brand promise. The application of the proposed model for the analysis of Western Australia's branding strategy highlights the importance of understanding destination brand and its advertised promise to generate stakeholders' commitment to the brand. The results suggest that engagement with destination brands in Western Australia varies amongst the stakeholders. Such variations could be a result of various business objectives and difference of target markets. Findings confirm the importance of understanding stakeholders' 'buy-in' of the brand before rolling it to the market. Moreover, this research implies significant difference in the level of commitment to brand 'Experience Extraordinary Western Australia', particularly around the use of the phrase 'Experience Extraordinary', among different categories of stakeholders indicating requirement of greater internal communication efforts from the brand authorities.

CONCLUSIONS

The associated challenges of the process to achieve greater branding success with stakeholders is discussed with managerial implications and future research directions. This research will provide outcomes and further knowledge for both industry and the research community to help manage the complexities involved with delivering brand promise.

Keywords: *Stakeholders, Destination, Brand, Promise, Delivery*

JEL Classifications: M31

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