THE ROLE OF SOCIAL TIES IN FOSTERING INNOVATION

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The purpose of this study is to examine the importance of social ties in encouraging innovative behaviour. There is limited empirical evidence of the interrelation between these two constructs in current academic literature. This research hypothesizes such relationship in higher academic institutions. To enhance innovativeness of academic staff within universities or R & D institutions, we examined the role of social ties in fostering innovativeness as a main factor in entrepreneurial activities. A survey was sent via a hyperlink to the target sample, facilitated by empirical analysis using correlation and regression analysis. It can be concluded that there is a significant relationship between spending time with social contacts and innovativeness. Limitations and further research are cited to enhance the understanding of the interrelation of the constructs.

Keywords: Social network; social ties; innovativeness; entrepreneurship.

INTRODUCTION

This study represents an empirical examination integrating social ties and innovation in knowledge-based institutions. The purpose is to examine the role of social ties in fostering entrepreneurial activities in academic institutions and thereby improving the performance of individuals and the organization. We do so by examining the interrelation between these two research constructs.

The concept of social networks has been investigated in recent years as a useful resource in the fabric of social structure. Starting in sociology, social networks gained currency in different disciplines, including organizational
studies, entrepreneurship, psychology, economics, marketing and politics. The basic idea that attracted the attention of scholars is that social networks may facilitate the creation of value. Confronted with many questions in their field of study, organizational researchers applied this concept in different areas. The range of organizational issues which have been answered by social capital has been broad and various, including career success (Gabby and Zuckerman, 1998; Burt, 1992), executive compensation (Belliveau et al., 1997), finding jobs (Granovetter, 1995; Lin and Dumin, 1996), producing a pool of recruits for firms (Fernandez et al., 2000), product innovation (Tsai and Ghoshal, 1998), the creation of intellectual capital (Nahapiet and Ghoshal, 1998), improving customer service orientation (Omar and Simon, 2006), intra firms networks and forming alliances (Owler, 2004), entrepreneurship (Chung and Gibbons, 1997), the formation of start up companies (Walker et al., 1997), effectiveness of entrepreneurial teams (2005), and strengthening supplier relations (Uzzi, 1997). In this study, we examined the role of social networks in fostering innovativeness in an academic context; more specifically, how social ties available to academics foster innovativeness as a main dimension of entrepreneurial activities.

Innovation as a main aspect of entrepreneurship in established organizations has been widely touted in the literature as a means of revitalizing and improving organisation performance (Kuratko, 2005; Drucker, 1985). This study investigated the people base of innovation in academic institutions by focusing on social relationships. Thus, this research contributes to the advancement of both social network and entrepreneurship literature by proposing that social networks foster innovativeness. We formulated hypotheses around these research constructs and subjected the hypotheses to empirical testing based on a survey conducted in five Australian universities located in Metropolitan Melbourne. Our findings provide support for the association between time spent with social ties and innovativeness.

**THEORIES**

Our literature review encompasses two hypothesized interrelated constructs of social ties and innovativeness. We appropriately study this in the context of knowledge based institutions, with specific application to universities. We use regression analysis to explore gaps we identified in current literature and previous empirical studies. What follows is a summary of the constructs literature, together with hypotheses developed around the integration of the constructs.
Social Networks

A social network is a social structure made of nodes (which are generally individuals or organizations) that are tied by one or more specific types of interdependency, such as values, visions, idea, financial exchange, friends, kinship. The resulting structures are often very complex. Social network analysis views social relationships in terms of nodes and ties. Nodes are the individual actors within the networks, and ties are the relationships between the actors. There can be many kinds of ties between the nodes. Interpersonal ties are defined as information-carrying connections between people. Interpersonal ties, generally, come in two varieties. Strong and weak ties. Weak social ties, it is argued, are responsible for the majority of the embeddedness and structure of social networks in society as well as the transmission of information through these networks (Granovetter, 1992). Specifically, more novel information flows to individuals through weak ties rather than strong ties. Because our close friends tend to move in the same circle that we do, the information they receive overlaps considerably with what we already know. Acquaintances, by contrast, know people that we do not, and thus receive more novel information (Granovetter, 2004). Social networks operate on many levels, from families up to the level of nations, and play a critical role in determining the way problems are solved, organizations are run, and the degree to which individuals succeed in achieving their goals.

Nahapiet and Ghoshal (1997) comprehensively reviewed the literature and identified three dimensions for social capital which have been identified as structural, relational and cognitive dimensions. The Structural dimension of social capital refers to social interactions and the existence of network ties. Without social ties and interactions, resources will not be available. Granovetter (1992) has used the term “structural embeddedness” to refer to this dimension of social capital, which is concerned to the properties of the social system and the network of relations as a whole. In the context of this research, structural dimension of social capital of academic staff is the time which academics have spent with their contacts, such as colleagues and business or industry alliances.

Interpersonal and inter-organizational relationships are viewed as the media through which actors gain access to a variety of resources held by other actors. With the exception of work on the role of networks to access capital, most research has focused on the entrepreneur’s access to intangible resources (Hoang and Antonic, 2003). Network relations, for example, provide emotional support for entrepreneurial risk-taking and this in turn is
thought to enhance persistence to remain in business. A key benefit of
networks for the innovation process is the access they provide to infor-
mation and advice (Adler and Kown, 2002). Ties to venture capitalists and
professional service organizations, for example, are a means for tapping
into key talent and market information. Entrepreneurs continue to rely on
networks for business information, advice, and problem solving, with some
contacts providing multiple resources.

Granovetter’s (1973) notion of weak ties, in particular, describes the
extent to which actors can gain access to new information and ideas through
ties that lie outside of their immediate cluster of contacts. Structural holes
defined as the absence of ties between actors. By bridging structural holes,
actors can profit from establishing ties that bridge these otherwise uncon-
connected actors (Burt, 2004). Occupying a bridging position provides an
opportunity to wield power, or influence those who are otherwise uncon-
connected to the broader network. Given this opportunity for diverse, non-
redundant contacts, spanning structural holes can also increase the focal
actor’s exposure to novel information (Burt, 2000). This in turn may spur
learning and the development of internal capabilities that ultimately
enhance performance.

Innovation

Innovation is of fundamental importance in both the academic and practical
sphere. Innovation is widely regarded as a critical source of competitive
advantage in an increasingly changing environment. According to man-
gagement scholars, innovation capability is the most important determinant
of firm performance (Crossan and Apaydin, 2010). The search and im-
plementation of innovative means is the essence of any economic activity
and a crucial determinant of competitiveness and performance of firms. The
implications of successful firm-level innovation on the welfare and growth
of an economy overall have been widely documented. A recent, compre-
prehensive overview in Crossan and Apaydin (2010) extensively documents
the standing of research on firm-level innovation and presents the deter-
minants and dimensions identified. Of particular relevance for this study is
the authors’ assessment that innovation is not a single event but a succes-
sion of continuous processes. Innovation does not occur in isolation, and
being a member of an innovation network offers many advantages. Par-
ticipating in innovation networks enables firms to spread the risk associated
with innovative activities.
Owing to the vital role of innovation in entrepreneurial activities, the processes and characteristics of innovative people have been subject of research in different disciplines such as management, organization, psychology, and economics. Organizational scholars have focused on finding the methods to foster and overcoming the inhibitors of creativity and innovations in organizations (Drucker, 1986). Psychologists have been interested in motives and thinking processes of entrepreneurs (McClelland, 1961). As an economist, Schumpeter (1939) saw the entrepreneur as a dynamic, proactive influence and the principal cause of change in the economic system and used the word entrepreneur for those people who radically innovative and destruct the status quo to construct equilibrium in higher level that it was before.

The evidences on entrepreneurial firms show that innovativeness is an outstanding feature of their behaviour. Innovativeness reflects a firm’s tendency and belief to engage in and support new ideas, novelty, experimentation that may result in new products, services, or technological processes. Schumpeter (1934) was among the first to emphasize on the role of innovations in the process of entrepreneurship. Schumpeter (1934; 1942) argued that organizations are continuously engaged in the process of “creative destruction” which means market structures are disrupted by introduction of new goods and services which are produced by innovative new combinations. Therefore, innovativeness is an important element in the process of entrepreneurship, because it reflects new business by providing new products and services to the markets.

Although there are a variety of methods to classify innovations, but maybe the most useful categorizations is the classification in terms of product-market and technological innovations. However, product-market innovativeness suggests an emphasis on product design, market research, and advertising and promotion (Miller and Friesen, 1987; Scherer, 1980). In technological innovativeness the emphasis is on achieving and keeping pace with the latest technologies in production and provision processes and updating technical expertise and industry knowledge (Cooper, 1971; Maidique and Patch, 1982). In spite the of importance of this type of innovations, they have not been considered in the studies based on Miller’s (1983) concept of innovativeness, which focused on the product-market innovations.

Innovative activities in organizations may take various forms. In the broadest sense, innovativeness may occur along a continuum from a simple willingness to try a new product or service or experiment with a new advertising venue, to a great passion to master the latest in new products or technological advances. To measure this range of innovative activities,
numerous methods have been employed. For example, firm’s willingness to
discard old beliefs and explore new alternatives and rewarding experi-
mentation, financial resources dedicated to research and development, the
quality of human resources or technocratization level, and the number of
new product or service introductions and the frequency of changes in ser-
vices or product lines (Covin and Slevin, 1989; Miller and Friesen, 1982;
Karagozoglu and Brown, 1988; Miller and Friesen, 1982; Hage, 1980;
Miller, 1987; 1988). Thus, Universities and academic institutions should
innovative new courses and programs and also they should update their
educational technologies in their research and teaching activities.

Link Between Time Spent with Social Ties and Innovativeness

The richness of social capital concept has persuaded scholars to examine
the relationship between this emerging concept and main concerns in or-
ganizational studies (Adler and Kown, 2002; Reagans and Zuckerman,
2001; Burt, 1992; Chung and Gibbons, 1997; Rosenthal, 1996; Walker
et al., 1997; Granovetter, 1973; Tsai and Ghoshal, 1998; Nahapiet and
Ghoshal, 1998). Institutional environments are conducive to this asset and
therefore it will deliver a powerful resource available for promoting indi-
vidual and organizational objectives (Burt, 2004). This study is an effort to
examine the role of social capital in fostering entrepreneurial activities
in academic institutions. In the following subsections, the associations
between the research constructs are discussed.

Empirical studies have indicated that social ties play an important role in
facilitating innovation and creativity (Ruef, 2002; Tsai and Ghoshal, 1998;
Gabby and Zuckerman, 1998; Hanson, 1998). Network theorists have ex-
amined the association between access to networks and the development of
new ideas and creativity. For example, Burt (2004) has noted that good
ideas or alternative ways of thinking and behaving are disproportionately in
the hands of people whose networks span structural holes. Ruef (2002)
examined the role of network ties in inducing conformity and sustaining
trust, as well as novel ideas. He argues that people that are connected to
groups beyond their own can expect to find themselves delivering valuable
ideas, seeming to be gifted with creativity. Generally speaking, the pro-
pensity among entrepreneurs toward innovation is seen to be a function of
the types of social relationships that those entrepreneurs experience.

Similar evidence has been found in organizational contexts. Several
studies have investigated the role of dimensions of social capital in inno-
vation at individual and organizational levels. Kirkpatrick and Locke (1991)
examined the association between relational dimension of social capital and creating novel ideas in maintaining qualified people in organizations. Tsai and Ghoshal (1998) examined the relationships between three dimensions of social capital and product innovation in a multinational electronics company; they have found that those organizational units that are more trusted and have more social interactions with other units are more innovative. Therefore, within organizational context or not, this asset plays an important role in fostering innovative activities.

Productive resources embedded in social interactions results in proactiveness by helping in the detection and identification of environmental threats and opportunities as well as in taking action to exploit or neutralize the environmental uncertainty (Kohli and Jaworski, 1990; McGrath et al., 1994). Utilizing social ties within organizational contexts not only benefit participants but organizations also gain advantage by economizing on their expenses and in timely response to environmental needs and demands. Moreover, the organization’s ability to create knowledge is critically affected by how it elicits and combines knowledge embodied in employees with changing market requirements (Garud and Neyyar, 1994). Increasingly, firm-level adaptability is being assessed less on how well the organization processes information and more on how it creates knowledge (Noanka, 1994). The creation of knowledge is, in turn, influenced by social practices.

We identify the hypotheses to be tested in the process, followed by the conceptual framework:

\[ H1: \text{There is a relationship between time spent with social ties and innovation.} \]

\[ H2: \text{Time spent with social ties predict innovativeness.} \]

The research design consisted of a quantitative analysis using data collection in the form of an online survey approach. Methodology is hypothesis led, using constructs and variables from an in depth literature review embracing social networks, innovation and entrepreneurship. The conceptual framework (Figure 1) incorporating these two constructs was

![Figure 1. Conceptual framework of the study.](image-url)
exposed to descriptive and inferential statistics, highlighting relationships and prediction of appropriate variables. We provide an overview of the method from a perspective of the sample, dependant and independent variables, control variables and data analysis.

The sample of this study consisted of full time academic staff at universities in metropolitan Melbourne. The statistic population of academic staff embraced various levels of academic positions, ranging from Lecturer to Professor. There were 162 males (60.4 percent) and 106 females (39.6 percent) in the sample, giving a total of 271 respondents. Data was collected via electronic media, whereby academic staff were encouraged to participate in an online questionnaire via an email hyperlink. The online and electronic media survey approach as amplified by Dillman (2000) was adapted for the study.

The construct of innovativeness has been considered as a dependent variable. To measure innovativeness, several items was developed, such as presenting new ideas and new topics in their research, presenting new ideas to industry/business, the extent to which their ideas are welcomed by experts in their field of studies. This 5 items scale operationalized innovativeness in academic environment, risk-taking and proactiveness. All questions have measured the construct on a Likert scale of 5 options.

Time spent with social ties has been considered as an independent variable. This research project considered 8 possible social ties in an academic context. The items related to frequency of communications of academic staff with their contacts. The Likert scale of five options were used, the respondents have specified the time that they have spent in a week with their networks by choosing one of options from 0 to 2 hours a week for 1 score and more than 9 hours for 5 score.

The characteristics of the statistical sample such as gender, age, and experience in the field of study, experience in their institutions, function and position have served as control variables. One way analysis of variance (ANOVA) was used to examine statistically significant differences among groups classified by social capital, entrepreneurial orientation and performance. A significance level of 0.05 was set for the various analyses. When the ANOVA provided an F ratio which was statistically significant beyond the 0.05 level, Post hoc procedure as outlined in Tabachnik and Fidell (2001) was used to compare individual sub-groups within a scale in an attempt to locate differences which contributed to the analysis of variance result. To compare females and males scores for each research constructs t-test were used.
Data analysis consisted of descriptive and inferential statistics. Descriptive measures included mean, median, mode and frequency of distributions of the sample. Inferential statistics included two statistical methods. To examine the relationships between research variables, correlational methodology was applied and to examine the level of predictability of dependent variable by factorial variable, regression was used. Since we used congruent scales to measure the variables, common methods bias was overcome by construct validity evidence from previous scales (Conway and Lance, 2010).

RESULTS

A response rate of 14.8% was deemed appropriate, taking cognizance that two of the universities declined participation in the study. Although we included these in the statistic population, had we excluded them, a response rate in excess of 10% would have materialized. The sample size was of 253 workable responses were deemed sufficient for this study. It was outside the ambit of this study to compare universities, and as such, inappropriate to discuss demographics and descriptives in this report. We wish to rather highlight results regarding construct integration.

To substantiate the results of examining of the research hypotheses, a t-test and one-way analysis was undertaken to investigate the differences between different groups. The analysis has shown that there is no significant difference between male and female in terms of the scores for the research constructs. Also, the findings in the analysis of variance for demographic characteristics of respondents indicated that there was no significant difference in times spent with social ties, innovation between fields of studies. There has been no significant difference between other fields of studies. In other respects, there has been no statistical significant difference between these groups.

The relationship between social interactions and innovativeness was investigated using Pearson product-moment correlation coefficient. As can be seen in Table 1, there was a significant relationship between frequency of interactions with social ties and innovativeness \( \{r = 0.167, \text{Sig} = 0.009, N = 248\}\).

Partial correlation was used to explore the relationship between the frequency of interactions and innovation, while controlling for scores on the age of subjects, experience in the field of studies, and experience in the institution. Preliminary analyses were performed to ensure no violation of
the assumptions of normality, linearity and homoscedasticity. An inspection of the zero order correlation suggested that controlling for age, experience in the field of studies and experience in the institution had very little effects on the strength of the relationship between these two variables.

Social interactions of respondents within and outside of their department have been indicated in Table 2. As the table indicates, 38.4 percent of academic staff communicate with their colleagues between 3 to 5 hours a week and about 23 percent spend more than 9 hours a week, 20 percent between 6 to 8 hours, 17 percent between 1 to 2 hours a week in communication with their colleagues and 1.1 percent have no communication.

Table 1. Relationship between frequency of interaction with social ties and innovativeness.

<table>
<thead>
<tr>
<th>Social ties</th>
<th>Correlation</th>
<th>0.167</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency of Interactions</td>
<td>Correlation</td>
<td>0.167</td>
</tr>
<tr>
<td></td>
<td>Sig.</td>
<td>0.009</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>248</td>
</tr>
</tbody>
</table>

Table 2. Time spent with social ties.

<table>
<thead>
<tr>
<th>How Many Hours a Week do you Spend Communicating with Your Social Ties</th>
<th>None</th>
<th>1-2 Hours</th>
<th>3-5 Hours</th>
<th>6-8 Hours</th>
<th>More Than 9 Hours</th>
<th>Mean</th>
<th>SD</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Colleagues</td>
<td>1.1</td>
<td>17.3</td>
<td>38.4</td>
<td>20.3</td>
<td>22.9</td>
<td>3.46</td>
<td>0.093</td>
<td>-0.992</td>
<td>0.992</td>
</tr>
<tr>
<td>2. Administration</td>
<td>9.2</td>
<td>51.3</td>
<td>29.9</td>
<td>5.5</td>
<td>4.1</td>
<td>2.44</td>
<td>0.906</td>
<td>1.130</td>
<td>0.906</td>
</tr>
<tr>
<td>3. Superior</td>
<td>19.6</td>
<td>66.4</td>
<td>12.2</td>
<td>1.1</td>
<td>0.4</td>
<td>1</td>
<td>0.629</td>
<td>0.662</td>
<td>2.332</td>
</tr>
<tr>
<td>4. Attending social occasions</td>
<td>37.3</td>
<td>54.2</td>
<td>7.4</td>
<td>0.4</td>
<td>0</td>
<td>1.70</td>
<td>0.616</td>
<td>0.377</td>
<td>-0.127</td>
</tr>
<tr>
<td>5. Colleagues in other departments</td>
<td>29.9</td>
<td>56.5</td>
<td>11.8</td>
<td>1.5</td>
<td>0.4</td>
<td>1.859</td>
<td>0.721</td>
<td>1.351</td>
<td>0.981</td>
</tr>
<tr>
<td>6. Colleagues outside institutions</td>
<td>20.7</td>
<td>55.7</td>
<td>18.8</td>
<td>4.1</td>
<td>0.7</td>
<td>2.084</td>
<td>0.723</td>
<td>0.981</td>
<td>2.436</td>
</tr>
<tr>
<td>7. International colleagues</td>
<td>35.8</td>
<td>52.8</td>
<td>8.1</td>
<td>2.2</td>
<td>0.7</td>
<td>1.788</td>
<td>0.744</td>
<td>1.126</td>
<td>2.436</td>
</tr>
<tr>
<td>8. Business/industry contacts</td>
<td>31</td>
<td>51.3</td>
<td>14</td>
<td>1.8</td>
<td>1.1</td>
<td>1.899</td>
<td>0.787</td>
<td>0.964</td>
<td>1.775</td>
</tr>
</tbody>
</table>
with their colleagues, with a mean 3.46 and standard deviation of 1.06. Positive skewness value (0.093) indicates that scores are clustered to the low values and Kurtosis value (−0.992), a distribution that is relatively flat, too many cases in the extremes. An independent sample t-test was conducted to compare the times spent in communication with social ties scores for males and females. There was no significant difference in scores for males (M = 17.45, SD = 3.44) and females (M = 16.83, SD = 3.44); t(260) = 1.414, p = 0.709. Also, as the table indicates mean of times spent with colleagues and colleagues outside of institutions have higher mean than other social ties.

A standard simple regression was performed between frequency of interactions with social ties as an independent variable and innovativeness as dependent variable. As the Tables below indicates the correlation between the variables, the unstandardized regression coefficient (B) and intercept, the standardized regression coefficients (beta), sr square, R square, and adjusted R square. R for regression was significantly different from zero, F(1, 247) = 17.229, p < 0.001.

The independent variable contributed significantly to prediction of innovation as social ties 0.028 (sr Square). 3% of the variability of innovation was predicted by knowing the scores on the times spent with social ties.

The next step was to determine which variable included in the model contributed to the prediction of the dependent variable. Beta coefficients in above Table 3 provide information regarding the level of contribution of independent variable in predicting dependent variable. As the standardized coefficients column shows, the beta coefficient was 0.166 which is for social interactions with ties. This means that this variable makes the unique contribution to explaining the dependent variable.

Therefore, the independent variable that is, social interactions predict the dependent variable, innovativeness (INNVO).

\[(INNVO)' = A + Bi(SOCIN)\]

### Table 3. Coefficients.

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>T</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>15.234</td>
<td>1.347</td>
<td>11.311</td>
</tr>
<tr>
<td></td>
<td>SOCIN</td>
<td>0.203</td>
<td>0.077</td>
<td>0.166</td>
</tr>
</tbody>
</table>

*Dependent Variable: INNVO.
To predict academic staff performance, the available independent variable scores (INNO and INTE) are multiplied by their respective regression coefficients. The coefficient-by-score products are summed and added to the intercept, or base line, value (A). Thus, the multivariate equation to predict performance is as follows:

\[(\text{INNO})' = 15.23 + 0.166 (\text{SOCIN})\]

Predicted innovativeness \(Z' = 15.23 + 0.166 \text{ (SOCIN)}\) Times spent with social ties.

As the statistical results indicate, there was a statistical significant linear relationship between innovativeness and frequency of interactions (at the 1% level), it means that the variable predicts the dependent variable therefore, the related hypothesis is accepted.

**DISCUSSION AND IMPLICATIONS**

The findings indicate a significant relationship between the frequency of communications or interactions with other research construct. The study found a significant relationship between frequency of interactions and innovativeness after controlling for possible effects from other variables. Similarly, the role of structural dimension of social capital in fostering innovation and developing new ideas has been the focus of study in recent times (Burt, 2004; Ruef, 2002). The findings of the study support this notion in the literature that interactions and communications with available network members assist people to be innovative and entrepreneur.

Furthermore, the predictability of one variable by another one has been confirmed in the study. In the context of this study, innovativeness of academics can be predicted by the times that they spending with their social ties. Therefore, if academics want to improve their innovativeness which in turn lead to higher level of performance they should extend their networks. Our finding is consistent with the literature in social capital. For example, Burt (2000) argued that having access to networks, give people advantage to know about the opportunities in the market. It is through the social interactions that information and other facets of assets embedded in relationships are exchanged (Adler and Kown, 2002).

The findings of the study also indicates that social ties like colleagues, central administration and ties with industry and business play an important role in the overall interactions with social ties. Also, social interactions with colleagues outside of department contribute to the richness of the communications. Social networks located outside of institutions can be
accounted as weak ties such as colleagues outside of the institutions, international colleagues, business and industry contacts which are of great importance in instigating innovation process.

The linkage between performance and innovativeness has been widely studied in the literature (Zahra et al., 1999; Lumpkin and Dess, 1996; Kuratko, 2005). Performance in an academic context has been conceptualized as having two indices; productivity which is related to publications such as in journals, writing books or other forms and research activities which is related to activities such as obtaining governmental and non-governmental grants, consultancy services to industry, or other research activities. As innovativeness scale indicates, all items are related to creating new ideas and new topics in research activities. It is expected that dependent variable serve as an independent variable and effects the performance of academics. Therefore, those who have more innovativeness scores have more performance scores. Some studies indicated that there is a relationship between social interactions and productivity, in line with similar research in the literature (Putnum, 1993). The beneficiary of access to networks in utilizing opportunities has been reflected in the literature (Burt, 2000; Adler and Kwon, 2002).

Through fostering innovation in academic institutions, universities would be able to obtain government and nongovernmental grants which are playing an important role in generating revenues for universities. As most universities in Australia are publicly owned and are dependent on decreasing government assistance, they should go to markets and earn money rather than begging for it. Therefore, these research activities can assist to ease the financial problems in universities. Clark (2004) argued that higher education systems around the world are under constant pressures, and the best response is fostering innovation and entrepreneurship.

**CONCLUSION AND LIMITATIONS**

This study examined the role of social ties in fostering innovativeness, which is important factor in entrepreneurial activities. Particularly, the focus of the study was the question whether times spent with social ties including social interactions foster innovation in knowledge-based environment and thereby improve the performance of academic staff.

Within public sector organizations, academic institutions have been selected, while many other public organizations are operating in the public domain. The other limitation is related to the rate of response which was
relatively low. Cognizance must however be taken that it is difficult to
determine the accurate rate in web-based surveys (De Vaus, 2002). In ad-
dition, many email addresses were outdated or the researchers received
some responses for the automatic response from their email which indicated
that the respondents were out of office for lengthy durations.

The study focused on social ties to foster innovation in individual level,
and therefore, improvement of performance in academic context. Indeed,
the reason to undertake the research was to decrease pressures on univer-
sities. The role of academic staff was emphasized here, while many other
factors such as the leaders in universities, non-academic staff, governmental
policies, will provide deeper insight. It is recommended that these factors be
investigated in further research.

In addition, relationship resources have been considered as an antecedent
of innovation. This asset is a significant factor in fostering innovativeness
and performance, but there are other factors such as the characteristics of
academics, their internal impetus, and motivations which may play an
important role in undertaking entrepreneurial activities. This study focused
on the relationships between individuals, and it is proposed that additional
research be done with regard to the personality and motivation of academics
and their relationships with entrepreneurial activities. This research pro-
vided evidence that these constructs should be studied in more depth, and
a foundation set for further empirical research about their relationship
and many other factors that need be investigated to advance theories and
concepts.

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The Role of Social Ties in Fostering Innovation


The Role of Social Ties in Fostering Innovation

M. M. Salaran & A. Maritz


