

INTERNAL AND EXTERNAL TOP MANAGEMENT TEAM (TMT) NETWORKING FOR ADVANCING FIRM INNOVATIVENESS

Salleh S.S.M.M., Fareed M., Yusoff R.Z., Saad R. *

Abstract: This research is an attempt to examine the influence of TMT networking on firm innovativeness. Firm innovativeness has been the central concern in the upsurge competitive environment. While strategic decisions, such as, innovation has been posited to be potentially derived by the top management team (TMT), network is in fact a vital medium in providing access to different resources which has been found to be a crucial factor contributing to enhanced judgment and decisions. Despite a surge of studies emphasizing the beneficial of networking as well as examining the role of TMT in explaining the firm strategic decision, there is however little empirical research investigating the influence of TMT networking “internal and external” on firm innovativeness. Therefore, the current study has attempted to fill this gap by surveying 45 TMT leaders representing 45 companies. Findings reveal that TMT internal and external networking has significant impact of firm innovativeness. The study significantly contributes to the Upper Echelon Theory. Further, the study will also benefit the TMT leaders and practitioners as it highlighted the vital contribution of TMT internal and external networking in realizing firm innovativeness.

Key words: top management team (TMT), networking, firm innovativeness

DOI: 10.17512/pjms.2018.18.1.23

Article history:

Received July 10, 2018; *Revised* September 29, 2018; *Accepted* October 04, 2018

Introduction

The significance of organizations to be innovative in today’s highly competitive era is undeniable. It is vibrant for companies to be innovative in order to persist in rivalry (Pallas et al., 2013). Furthermore, the extent of firms’ innovativeness has been regarded as one of the critical factors to influence the success of firms (Yuan et al., 2014). Firm’s capability to innovate is also seen to be derived by diverse top leaders, a reflection of the variety of knowledge, skills, and abilities among top leaders offered (Qian et al., 2013). According to Collins and Clark (2003), top management team (TMT) members with strong networks, will possibly benefits and enhance firm’s outcome especially in contributing to better knowledge and real-time information. In this regards, the structure of diverse ties of TMT members

* **Sri Sarah Maznah Mohd Salleh**, PhD, Senior Lecturer, School of Business Innovation and Technopreneurship, Universiti Malaysia Perlis; **Muhammad Fareed**, PhD, visiting Senior Lecturer at School of Business Management, Universiti Utara Malaysia; **Rushami Zien Yusoff**, Professor PhD, Dean School of Business Management, Universiti Utara Malaysia; **Rohaizah Saad**, PhD, Senior Lecturer at School of Technology Management and Logistics, Universiti Utara Malaysia

✉Corresponding author: rohaizah@uum.edu.my

✉m.fareed@uum.edu.my; rzy278@uum.edu.my; rohaizah@uum.edu.my

provide informational benefits that lead to enhanced competitive advantages and firm innovativeness. This realisation of the importance of TMT members and their diverse network is align with Hambrick and Mason (1984) accentuation that top managers' and decision makers' characteristics have a substantial effect on firm outcome under the concept of upper echelon theory which frequently has been adopted to attach top managers' characteristics with the organizational outcomes. Therefore, having TMT with more intense and diverse networks is expected to contributes to better knowledge and resources gained, which then leads to better firm innovativeness.

Networking is one of the constructive sources of innovativeness (Turan and Ascigil, 2014). TMT networks enable opportunities attentiveness (Bhagavatula et al., 2010), mobilize resources (Batjargal, 2003), and legitimacy formation (Elfring and Hulsink, 2003). It has been argued that networking is important in creative idea construction where a more varied networking may be likely exposed to diversified ideas and complementary resources which enhance firm's innovativeness (Ofem, 2014; Nze et al., 2016; Hang et al., 2016; Owusu-Antwi et al., 2017; Ahmed et al., 2018). More so, firms with inter-firm networking also improve new competencies and knowledge that additionally develop their innovativeness (Sampson, 2007). Thus, it is challenging and important for firms to advance and uphold different capabilities in this fast moving environment, though it is recognized that innovation frequently stresses on the utilization of different types of knowledge (Jenssen and Nybakk, 2013). Therefore, information which obtained through various networks may be more conclusive as a critical factor for firm's creative idea generation and firm innovativeness.

Recognizing innovation as the focal driver for advanced economic growth, Malaysia has been aiming to boost the nation's innovation as part of the nation's transformation strategy. The need of the nation to improve their innovation level is emphasized in the Malaysia Eleventh Plan 2016–2020 (Economic Planning Unit, 2015). Furthermore, Malaysian government has stressed its concern for having highly resourceful leaders in organizations to improve the outcome. This concern was conveyed through the government initiatives in regulating MINDA, a government agency working with the top management personnel, intimating the need to be more innovation conscious and receptive (Office of the Prime Minister, 2014). This concern has also been highlighted as "*the innovation mind set is present not just at the management and execution levels, but also at the highest levels of governance and decision making of any organization*" (Office of the Prime Minister, 2014). Thus, emphasizing the importance of innovation for the nation which lies in the responsibility of organizations' top management team who are accountable for innovativeness of corporations as well as the nation.

Literature Review

Top Management Team Networking and Firm Innovativeness

The significance of innovation for organizations survival and nations' development has been repeatedly highlighted. While organizations and nations are being urged to innovate, Bougrain and Haudeville (2002) suggested that innovation is the result of various contributions of several actors working in network. Network is needed in order to gain advantage to achieve fresh opportunities, learn from experiences, gain knowledge, and also gain benefit from the harmonious result of joint resources (Gathungu et al., 2014). Knowledge or resources gained through networking allows firms to quickly locate needed resources (Birley, 1986) recognize opportunities (Bhagavatula et al., 2010) and build legitimacy for their firms (Elfring and Hulsink, 2003; Abiodun, 2014; Sabri and Sweis, 2015; Elkhayat and El Bannan, 2018). Therefore, it could be realized that the richer the TMT networking, the higher the firm innovativeness. Thus, although innovation opens opportunity, it is a great challenge to be innovative as it requires network with various parties in order to attain different resources needed in innovation creation.

Todtling and Kaufmann (2001) claims networks with suppliers lead to innovation since it opens opportunities for the network affiliates to acquire resources which are important for business survival and growth. Pittaway et al. (2004) further reinforced the position of network by emphasizing the importance of network for innovation processes and development. According to Ahuja (2000), investigating the impact of networking towards innovation will offer added knowledge relating to the efficiency of knowledge portfolios attained through networks and the role of dissimilar network constructions in the innovation formation. This is due to the amount of explicit connections a firm sustains will constructively influence its innovative results by offering essential assistances as networking permits knowledge sharing (Berg et al., 1982). Besides, review of innovation and inter-organizational knowledge by Powell et al. (1996) has revealed that connections and partnership networks are organization's main vehicle to gain access to exterior knowledge. This is in response to new knowledge and applicable assistance obtained through network for opportunity recognition (Elfring and Hulsink, 2003; Wincent and Westerberg, 2005; Maurice, 2013; Chidoko and Mashavira, 2014; Yuliansyah, 2015; Kadasala et al., 2016).

It is often anticipated that innovation informs rigorous activities in relations to information assortment and processing. Every organization can have limited number of resources in terms of technologies, information and lines of research, however the networking with other firms can grow a firm's availability of information and deliver benefits to assist as an information-gathering method (Freeman, 1991). In addition, networking serves as an information-processing device which facilitates firm's partnership (Leonard-Barton, 1984). This influences innovation result constructively by the use of external networking, besides, a firm's

network assist by means of a device for knowledge flow and contributes constructively and expressively to its innovation result (Ahuja, 2000).

Learning capabilities refers to firm's ability to generate new knowledge internally as well as exploiting resources that lie outside the firm (Poorkavoos, 2013; Agbabiaka-Mustapha and Adebola, 2018) and the main benefit of networking with other organizations is that networking opens the door for firms in sharing different resources (Barringer and Harrison, 2000; Gulati et al., 2002). Different scholars in their studies reported that such resources might consist of institutional (Baum and Oliver, 1991), financial (Ingram and Inman, 1996), knowledge plus information resources, together with a host of other network resources (Ingram and Inman, 1996) since firm innovativeness depends on access to different types of resources (Poorkavoos, 2013). Establishing relations with other companies and exchanging resources with partners is one of the ways that can help firms in addressing this issue (Poorkavoos, 2013). Furthermore, many studies have investigated and confirmed the positive impact of external networking on innovation (Ahuja and Katila, 2001; Boschma and TerWal, 2007; De Propriis, 2002). As networking is important for a firm to gain wide range of resources, it has also proven to be genuine source of being innovative. With networking, broader knowledge and information resources can be gained, leading to higher opportunity to innovate and improved firms' outcome.

Despite the fact being innovative is challenging, having TMT with internal as well as external network is an advantage to the organization. TMT prodigious network provides significant value to the organization in the form of information benefits which is difficult to be merely attained within the organization. Thus, internal and external networking particularly by the top leaders is essential to obtained resources and overcome organization's constraints. Having TMT with diverse network will eventually assist organizations in their innovation development which requires various imperative resources. To investigate the influence of TMT internal and external networking towards firm innovativeness, this study proposes the following hypotheses:

Hypothesis1: *Firm innovativeness significantly influenced by the TMT internal networking.*

Hypothesis2: *Firm innovativeness significantly influenced by the TMT external networking.*

Methodology

Hypotheses were tested using a descriptive study with cross-sectional research design on non-financial firms in Malaysia. The data was collected within a period of 9 months through survey questionnaire using a simple random sampling technique. A total of 45 TMT leaders representing 45 companies responded to the field survey with a response rate of 47 percent. Survey questionnaire was adapted from previous studies, where firm innovativeness is operationalized using

the organization's capability and readiness to innovate. Firm innovativeness was measured through 9 items which are adapted from (Ruvio et al., 2014) while TMT internal and external networking was measured by 4 items and 7 items respectively which are adapted from (Eggers et al., 2014; Gronum et al., 2012; Subramaniam and Youndt, 2005). Accordingly, the adapted survey questionnaire has adequate reliability as the achieved alpha values were above 0.60 in accordance with the criteria indicated by Hair et al. (2010). Survey questionnaire with six point Likert scale with 1 represents strongly disagree and 6 represents strongly agree was used to measure the adapted items. TMT networking was assessed through the knowledge embedded within and across the organization, along with other parties outside the organization which are available through interactions and network of the TMT members.

Result and Discussion

Hypotheses testing were performed by applying PLS-SEM technique as a comprehensive literature review has shown PLS-SEM is an extensively acknowledged modelling practise since it is a nonparametric technique for testing research model (Fareed et al., 2016). Denoting to Henseler et al. (2009) supported by Hair et al. (2012), the PLS-SEM assessment of model was achieved through two stages; 1) the assessment of measurement model; 2) assessment of structural model. The assessment of measurement model is a structural relationship between the latent constructs and their indicators (Tabachnick and Fidell, 2007), which is the vivacious phase before the hypothesis testing through SEM (Al-Dhaafri et al., 2016). To attain the measurement model, convergent and discriminant validities by the values of average variance extracted (AVE) and composite reliability are calculated (Henseler et al., 2009) using measurement loadings and the significance of loadings. These values are assessed grounded by specific threshold established by previous scholars including (Fornell and Larcker, 1981; Hair et al., 2014). Furthermore, PLS-SEM has the ability to assess path models with a highly skewed data and small sample group (Al-Dhaafri et al., 2016). Thus, PLS-SEM is an appropriate technique in accordance to the study's relatively small sample size of 45 respondents.

The Assessment of the Measurement Model

In assessment of the measurement model, as specified overhead, the validity and the reliability of the construct were examined using the content validity, convergent validity and discriminant validity.

Content Validity

Content validity is the instance when indicators representing a construct indicate higher factor loadings on their respective construct as compare to other constructs in the model (Chin, 1998; Hair et al., 2010). If factor loadings are carried higher in other constructs than their represented construct, these constructs should be omitted

from the model. Grounded by this proposition, factor loadings and cross-loadings are used to test the content validity. Table 1 demonstrates that all indicators carried are highly in their respective construct as compared to the other constructs.

Table 1. Factor loadings and cross loadings

Indicators	Firm	TMT	
	Innovativeness	Internal Networking	External Networking
FI1	0.754	0.664	0.573
FI2	0.836	0.726	0.644
FI3	0.804	0.613	0.622
FI4	0.767	0.656	0.692
FI5	0.883	0.826	0.842
FI6	0.870	0.734	0.704
FI7	0.893	0.720	0.766
FI8	0.856	0.634	0.661
FI9	0.853	0.649	0.635
FI10	0.898	0.734	0.687
FI11	0.864	0.732	0.672
FI12	0.835	0.612	0.629
FI13	0.801	0.612	0.627
NI1	0.621	0.797	0.523
NI2	0.733	0.860	0.735
NI3	0.552	0.715	0.519
NI4	0.718	0.842	0.746
NE1	0.709	0.695	0.881
NE2	0.781	0.801	0.932
NE3	0.678	0.681	0.858
NE4	0.689	0.654	0.866
NE5	0.491	0.451	0.624

Besides, the significance of the factor loadings is shown in Table 2. Thus, establishing the content validity of the measurement model.

Table 2. Significance of factor loadings

Constructs	Indicator	Loadings	SE	T Values	P Values
Firm	FI1	0.754	0.097	7.791	0.000
Innovativeness	FI2	0.836	0.067	12.448	0.000
	FI3	0.804	0.078	10.269	0.000
	FI4	0.767	0.074	10.403	0.000
	FI5	0.883	0.034	25.991	0.000
	FI6	0.870	0.050	17.458	0.000
	FI7	0.893	0.028	31.685	0.000
	FI8	0.856	0.056	15.312	0.000
	FI9	0.853	0.060	14.330	0.000
	FI10	0.898	0.037	24.405	0.000
	FI11	0.864	0.063	13.624	0.000
	FI12	0.835	0.054	15.454	0.000

	FI13	0.801	0.061	13.075	0.000
TMT Internal	NI1	0.797	0.086	9.325	0.000
Networking	NI2	0.860	0.043	19.851	0.000
	NI3	0.715	0.147	4.872	0.000
	NI4	0.842	0.039	21.571	0.000
TMT External	NE1	0.881	0.042	21.115	0.000
Networking	NE2	0.932	0.020	45.758	0.000
	NE3	0.858	0.051	16.893	0.000
	NE4	0.866	0.041	21.025	0.000
	NE5	0.624	0.131	4.773	0.000

Convergent Validity

Convergent validity refers to the degree of a cluster of indicators converge to measure a construct (Hair et al., 2012). It can be examined through factor loadings, composite reliability, AVE and Cronbach's alpha. The contended standard values in assessment of measurement model are; between 0.40 and 0.70 for factor loadings, 0.50 or more for AVE, 0.70 or more for composite reliability and Cronbach's alpha respectively (Hair et al., 2014). Consequently, these standards have been achieved as shown in Table 3. Thus, the measurement model has proper convergent validity (Bagozzi and Yi, 1988).

Table 3. Convergent validity

Constructs	Indicator	Loadings	Cronbach's Alpha	CR	AVE
Firm	FI1	0.754	0.965	0.969	0.707
Innovativeness	FI2	0.836			
	FI3	0.804			
	FI4	0.767			
	FI5	0.883			
	FI6	0.870			
	FI7	0.893			
	FI8	0.856			
	FI9	0.853			
	FI10	0.898			
	FI11	0.864			
	FI12	0.835			
	FI13	0.801			
TMT	NI1	0.797	0.818	0.880	0.649
Internal Network	NI2	0.860			
	NI3	0.715			
	NI4	0.842			
TMT	NE1	0.881	0.890	0.921	0.704
External Network	NE2	0.932			
	NE3	0.858			
	NE4	0.866			
	NE5	0.624			

Discriminant Validity

Discriminant validity is the degree of a set of indicators signifying the construct they represent, and how different they are from other constructs in the model (Hair et al., 2010). Thus, variance shared between indicators of a construct must be greater compared to the variance shared with other constructs. The criteria for testing discriminant validity specified by Fornell and Larcker (1981) which is supported by Venkatesh and Morris (2000) is square root of AVE for a particular construct must be better than the correlation of the construct with other constructs. Table 4 depict the standard is achieved, signifying the measurement model has the required discriminant validity.

Table 4. Discriminant Validity

Construct	Firm Innovativeness	TMT Internal Networking	TMT External Networking	AVE
Firm Innovativeness	0.841			0.707
TMT Internal Networking	0.752	0.805		0.649
TMT External Networking	0.806	0.793	0.839	0.704

Assessment of Structural Model

The proposed hypotheses were tested through assessment of structural model once the assessment of measurement model is verified. The stability of the PLS-SEM estimates was measured through bootstrapping, assessing the t-value of path coefficients (Efron and Tibshirani, 1994). Results depicted in Table 5 specifies TMT internal networking significantly contributes to greater firm innovativeness at the 0.000 level of significance ($\beta = 0.487$, $t = 3.888$, $p < 0.001$). In addition, TMT external networking has correspondingly showed significant influence towards firm innovativeness at the 0.001 level of significance ($\beta = 0.420$, $t = 3.457$, $p < 0.001$). The significant effect of TMT internal as well as external networking on firm innovativeness may be explicated as TMT's contribution towards firm innovativeness through various resources attained from their diverse network which includes network within the organization, along with their network outside the organization. In detail, results demonstrated that firms achieve greater innovativeness when they embolden the internal as well as external networking of their TMT.

Table 5. Hypothesis testing

Hypothesis	Path Coefficient	SE	T Value	P Value	Decision
TMT Internal Networking -> Firm Innovativeness	0.487	0.125	3.888	0.000***	Supported
TMT External Networking -> Firm Innovativeness	0.420	0.121	3.457	0.001***	Supported

Note: *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$

Data analysis was performed through PLS-SEM technique to achieve the main objective of this research in investigating the effect of TMT networking on firm innovativeness. This includes the influence of TMT internal networking and TMT external networking towards firm innovativeness. Referring to Table 5 and as previously discussed, the hypothesized direct effect in this study proposed that greater firm innovativeness is realised with TMT internal networking, along with their external networking. Top Management Team (TMT) internal and external networking is expected to improve firm innovativeness as networking has been recognized to contribute to multiple resources needed, especially to innovation. This relationship elucidates the need of various resources in order to be innovative, which can be acquired through networking. This is attributable to the judgment of Zaheer and Bell (2005) in highlighting the importance of various resources for firm to innovate while Jenssen and Nybakk (2013) emphasized the attainable advantage through networking contributed to various resources gathered which were tough to be managed independently.

Thus, TMT networking was perceived as networking with different groups and organizations within and outside the organization, while firm innovativeness is described as organization's willingness and ability to innovate. Thus, grounded by previous studies, hypotheses were constructed proposing that TMT internal networking, in addition to external networking have significant influence on firm innovativeness. Findings indicate significantly positive relationship between TMT internal and external networking with firm innovativeness. The result can be interpreted that firms with various TMT internal and external networks will benefit an enhanced firm innovativeness.

Accordingly, these findings have further designated the importance of networking for innovation related activities which has been emphasized in earlier studies (Ahuja and Katila, 2001; Obstfeld, 2005; Pittaway et al., 2004). Although the contexts of these studies are different, the findings further highlight the importance of networking in enhancing firm innovativeness. Hence, the networking activities of their TMT members influence their capability and readiness to be innovative. This can be explained by the advantages earned by these companies through their TMT networking by having multiple accessibility to various resources provided through their networks.

Therefore, the significant positive relationship between TMT internal networking and TMT external networking with firm innovativeness depicted by the current study's findings is explicable. This is due to the need of various types of knowledge in being innovative, as described by Jenssen and Nybakk (2013). It further claimed that it is impossible to merely rely on the firms' internal resources for innovation (Gathungu et al., 2014). While innovativeness requires various resources, this can be realized through networking. Hence, the importance of internal and external networking especially by the firm's TMT is recognized.

Conclusion

Studying the effect of TMT networking contributing to firm innovativeness in particular within the context of companies in Malaysia, this study has provided enhanced insight into firm's innovativeness. While Malaysia has shown to be facing challenges in attaining its vision in being innovative, this research deliberate a better understanding on the importance of having networking internally in consort with external networking by the TMT as it improves their strategic decision especially in their ability and readiness to innovate. It is noted that although the influence of TMT on firm innovativeness depended on various factors, this study has discovered positive relationship between TMT internal networking and TMT external networking with firm innovativeness. Consequently, the role of TMT especially their networking as predictor of firm innovativeness is established. Thus, organizations especially firms in Malaysia should focus on enhancing their TMT internal together with external networking in enabling richer firm innovativeness to be achieved.

Although firm innovativeness is found to be explained by the TMT networking, future studies may examine other factors which may have influence on and contribute towards firm innovativeness. In addition, future studies may also expand this study in the context of Upper Echelon Theory by looking at other TMT characteristic which may benefit firms' outcome. Future studies can also see the impact of TMT networking on innovation outcome.

With regard to limitations, this study offers only one perspectives of innovation, future studies might test different measures of innovation. Besides, this study focused on the view of TMT internal networking together with TMT external networking. Thus, future studies would be needed with different aspect of TMT. As this study added new perspectives in the notion of top leaders, networking and innovation, it also raised several interesting research areas that should be tackled in the future.

The findings of this study signify that companies in Malaysia realize enriched firm innovativeness by having TMT with internal and external networking. TMT networking can be concluded as a substantial factor in deriving firm innovativeness. In addition, having TMT internal network in addition to their external network will result in enriched firm innovativeness. While being innovative requires several resources which are difficult to independently maintain, TMT internal along with external networking are established to be an advantage for resources attainment. This can be centered under the Upper Echelon Theory depiction which explains TMT characteristics has an influence the organization outcome such as their innovativeness through their strategic judgment and decision.

Nonetheless, the existing literature is still limited concerning the influence of TMT internal and external networking towards firm innovativeness. Results obtained have supported the hypothesized relationships between TMT internal networking, TMT external networking, and firm innovativeness. This has further contributed to

improve the understanding of deriving firm innovativeness through TMT networking, relating to their networking within as well as with other parties outside the organization.

References

- Abiodun B.Y., 2014, *The Prospects of Accounting and Economic Systems in the Era of Global Knowledge Economy*, "The Economics and Finance Letters", 1(2).
- Agbabiaka-Mustapha M., Adebola K.S., 2018, *Exploring Curriculum Innovation as a Tool Towards Attainment of Self Reliance of NCE Graduates of Islamic Studies*, "International Journal of Emerging Trends in Social Sciences", 2(1).
- Ahmed A., Rehan R., Chhapra I.U., Supro S., 2018, *Interest Rate and Financial Performance of Banks in Pakistan*, "International Journal of Applied Economics, Finance and Accounting", 2(1).
- Ahuja G., 2000, *Collaboration Networks, Structural Holes and Innovation: A Longitudinal Study*, "Administrative Science Quarterly", 45.
- Ahuja G., Katila R., 2001, *Technological Acquisitions and the Innovation Performance of Acquiring Firms: A Longitudinal Study*, "Strategic Management Journal", 22(3).
- Al-Dhaafri H.S., Al-Swidi A. K., Yusoff R.Z.B., 2016, *The mediating role of total quality management between the entrepreneurial orientation and the organizational performance*, "The TQM Journal", 28(1).
- Bagozzi R.P., Yi Y., 1988, *On the evaluation of structural equation models*, "Journal of The Academy of Marketing Science", 16(1).
- Barringer B.R., Harrison J.S., 2000, *Walking a Tightrope: Creating Value through Interorganizational Relationships*, "Journal of Management", 26(3).
- Batjargal B., 2003, *Social Capital and Entrepreneurial Performance in Russia: A Longitudinal Study*, "Organization Studies", 24(4).
- Baum J.A., Oliver C., 1991, *Institutional Linkages and Organizational Mortality*, "Administrative Science Quarterly".
- Berg S., Duncan J., Friedman P., 1982, *Joint Venture Strategies and Corporate Innovation*, Cambridge, MA: Oelgeschlager, Gunn and Hain.
- Bhagavatula S., Elfring T., van Tilburg A., van de Bunt G.G., 2010, *How social and human capital influence opportunity recognition and resource mobilization in India's handloom industry*, "Journal of Business Venturing", 25(3).
- Birley S., 1986, *The role of networks in the entrepreneurial process*, "Journal of Business Venturing", 1(1).
- Boschma R.A., TerWal A.L., 2007, *Knowledge Networks and Innovative Performance in an Industrial District: The Case of a Footwear District in the South of Italy*, "Industry and Innovation", 14(2).
- Bougrain F., Haudeville B., 2002, *Innovation, Collaboration and SMEs Internal Research Capacities*, "Research Policy", 31(5).
- Chidoko C., Mashavira N., 2014, *An analysis of corporate governance in the banking sector of Zimbabwe*, "Humanities and Social Sciences Letters", 2(3).
- Chin W.W., 1998, *Issues and opinion on structural equation modelling*, "MIS Quarterly", 22(1).
- Collins C.J., Clark K.D., 2003, *Strategic human resource practices, top management team social networks, and firm performance: The role of human resource practices in*

- creating organizational competitive advantage*, "Academy of Management Journal", 46(6).
- De Propriis L., 2002, *Types of Innovation and Inter-firm Cooperation*, "Entrepreneurship and Regional Development", 14.
- Economic Planning Unit, EPU, 2015, *Eleventh Malaysia Plan 2016-2020 Anchoring Growth on People*, Malaysia: Prime Minister's Department.
- Efron B., Tibshirani R.J., 1994, *An introduction to the bootstrap*, CRC press.
- Eggers F., Kraus S., Covin J.G., 2014, *Traveling into unexplored territory: radical innovativeness and the role of networking, customers, and technologically turbulent environments*, "Industrial Marketing Management", 43(8).
- Elfring T., Hulsink W., 2003, *Networks in entrepreneurship: The case of high-technology firms*, "Small Business Economics", 21(4).
- Elkhayat N., El Bannan M.A., 2018, *State Divestitures and Bank Performance: Empirical Evidence from the Middle East and North Africa Region*, "Asian Economic and Financial Review", 8(2).
- Fareed M., Isa M.F.M., Noor W.S.W.M., 2016, *Human Resource Professionals' Effectiveness, Organizational Culture and High Performance Work System Link: Evidence from Pakistan*, "International Review of Management and Marketing", 6(7S).
- Fornell C., Larcker D.F., 1981, *Structural equation models with unobservable variables and measurement error: Algebra and statistics*, "Journal of Marketing Research".
- Freeman C., 1991, *Networks of Innovators: A Synthesis of Research Issues*, "Research Policy", 20.
- Gathungu J.M., Aiko D.M., Machuki V.N., 2014, *Entrepreneurial orientation, networking, external environment, and firm performance: A critical literature review*, "European Scientific Journal", 10(7).
- Gronum S., Verreynne M.L., Kastle T., 2012, *The Role of Networks in Small and Medium-Sized Enterprise Innovation and Firm Performance*, "Journal of Small Business Management", 50(2).
- Gulati R., Dialdin D.A., Wang L., 2002, *Organizational networks*, The Blackwell Companion to Organizations.
- Hair J.F., Hult G.T.M., Ringle C.M., Sarstedt M., 2014, *A primer on partial least squares structural equation modeling (PLS-SEM)*, (1st ed.), Los Angeles: Sage.
- Hair J.F., Sarstedt M., Ringle C.M., Mena J.A., 2012, *An assessment of the use of partial least squares structural equation modeling in marketing research*, "Journal of the Academy of Marketing Science", 40(3).
- Hair J.J.F., Black W.C., Babin B.J., Anderson R.E., 2010, *Multivariate Data Analysis*, (7th ed.), Upper Saddle River, New Jersey: Prentice Hall.
- Hambrick D.C., Mason P.A., 1984, *Upper echelons: The organization as a reflection of its top managers*, "Academy of Management Review", 9(2).
- Hang H.T.T., Vy P.D., Bandaralage J., 2016, *Mergers, Acquisitions and Market Concentration in the Banking Sector: The Case of Vietnam*, "Asian Journal of Economics and Empirical Research", 3(1).
- Henseler J., Ringle C.M., Sinkovics R.R., 2009, *The use of partial least squares path modeling in international marketing*, "Advances in International Marketing", 20(1).
- Ingram P., Inman C., 1996, *Institutions, Intergroup Competition, and the Evolution of Hotel Populations around Niagara Falls*, "Administrative Science Quarterly".

- Jenssen J.I., Nybakk E., 2013, *Inter-organizational Networks and Innovation in Small, Knowledge-intensive Firms: A Literature Review*, "International Journal of Innovation Management", 17(2).
- Kadasala N.R., Narayanan B., Liu Y., 2016, *International Trade Regulations on BPA: Global Health and Economic Implications*, "Asian Development Policy Review", 4(4).
- Leonard-Barton D., 1984, *Inter-personal Communication Patterns among Swedish and Boston-Area Entrepreneurs*, "Research Policy", 13.
- Maurice I.U., 2013, *Impact of product development and innovation on organisational performance*, "International Journal of Management and Sustainability", 2(12).
- Nze I.C., Ogwude I.C., Nnadi K.U., Ibe C.C., 2016, *Modelling the Relationship between Demand for River Port Services and Vessel Supply Costs: Empirical Evidence from Nigeria*, "Global Journal of Social Sciences Studies", 2(3).
- Obstfeld D., 2005, *Social Networks, the Tertiuslungens Orientation, and Involvement in Innovation*, "Administrative Science Quarterly", 50(1).
- Ofem B., 2014, *Entrepreneurial Orientation, Collaborative Networks, and Nonprofit Performance*, Thesis and Dissertation-Business Administration, University of Kentucky.
- Office of the Prime Minister, 2014, *The Launch of the Innovating Malaysia Conference 2014*, Office of the Prime Minister Putrajaya, Malaysia. Retrieved from http://www.pmo.gov.my/home.php?menu=speech&page=1908&news_id=731&speech_cat=2
- Owusu-Antwi G., Banerjee R., Antwi J., 2017, *Interest Rate Spread on Bank Profitability: The Case of Ghanaian Banks*, "Journal of Accounting, Business and Finance Research", 1(1).
- Pallas F., Böckermann F., Goetz O., Tecklenburg K., 2013, *Investigating Organisational Innovativeness: Developing a Multidimensional Formative Measure*, "International Journal of Innovation Management", 17(04).
- Pittaway L., Robertson M., Munir K., Denyer D., Neely A., 2004, *Networking and innovation: A systematic review of the evidence*, "International Journal of Management Reviews", (5).
- Poorkavoos M., 2013, *Impacts of Inter-organisational Knowledge Transfer Networks on Different Types of Innovations in SMEs*, Doctoral Dissertation, University of Bedfordshire.
- Powell W.W., Koput K.W., Smith-Doerr L., 1996, *Interorganizational Collaboration and the Locus of Innovation: Networks of Learning in Biotechnology*, "Administrative Science Quarterly", 41.
- Qian C., Cao Q., Takeuchi R., 2013, *Top management team functional diversity and organizational innovation in China: The moderating effects of environment*, "Strategic Management Journal", 34(1).
- Ruvio A.A., Shoham A., Vigoda-Gadot E., Schwabsky N., 2014, *Organizational Innovativeness: Construct Development and Cross-Cultural Validation*, "Journal of Product Innovation Management", 31(5).
- Sabri T.B.H., Sweis K.M., 2015, *The Impact of the Global Financial Crisis on the Debt, Liquidity, Growth, and Volume of Companies in Palestine Stock Exchange*, "Journal of Social Economics Research", 2(2).

- Sampson R.C., 2007, R&D Alliances and Firm Performance: *The Impact of Technological Diversity and Alliance Organization on Innovation*, "Academy of Management Journal", 50(2).
- Subramaniam M., Youndt M.A., 2005, *The Influence of Intellectual Capital on the Types of Innovative Capabilities*, "Academy of Management Journal", 48(3).
- Tabachnick B.G., Fidel L.S., 2007, *Using multivariate statistics*, (5th ed.), Boston: Pearson Education Inc.
- Todtling F., Kaufmann A., 2001, *The Role of the Region for Innovation Activities of SMEs*, "European Urban and Regional Studies", 8(3).
- Turan D., Ascigil S., 2014, *Antecedents of Innovativeness: Entrepreneurial Team Characteristics and Networking*, "Journal of Innovation Management", 2(1).
- Venkatesh V., Morris M.G., 2000, *Why don't men ever stop to ask for directions? Gender, social influence, and their role in technology acceptance and usage behavior*, "MIS Quarterly".
- Wincent J., Westerberg M., 2005, *Personal Traits of CEOs, Inter-firm Networking and Entrepreneurship in Their Firms: Investigating Strategic SME Network Participants*, "Journal of Developmental Entrepreneurship", 10(03).
- Yuan X.N., Guo Z., Fang E., 2014, *An examination of how and when the top management team matters for firm innovativeness: The effects of TMT functional backgrounds*, "Innovation", 16(3).
- Yuliansyah Y., 2015, *Attributes Influencing Strategic Alignment in the Service Sector: An Indonesian Banking Sector Case Study*, "International Journal of Business, Economics and Management", 2(2).
- Zaheer A., Bell G.G., 2005, *Benefiting from network position: Firm capabilities, structural holes, and performance*, "Strategic Management Journal", 26(9).

WEWNĘTRZNY I ZEWNĘTRZNY NETWORKING ZESPOŁU NAJWYŻSZEGO SZCZEBŁA (TMT) NA RZECZ ROZWIJANIA INNOWACYJNOŚCI FIRMY

Streszczenie: Niniejsze opracowanie jest próbą zbadania wpływu networkingu TMT na innowacyjność firmy. Innowacyjność firmy była głównym problemem w dynamicznym otoczeniu. Podczas gdy decyzje strategiczne, takie jak innowacje, zostały potencjalnie uzyskane przez zespół najwyższego kierownictwa (TMT), networking jest w rzeczywistości kluczowym medium w zapewnieniu dostępu do różnych zasobów, które okazały się kluczowym czynnikiem przyczyniającym się do lepszego osądu i decyzji. Pomimo wielu badań podkreślających korzyści wynikające z networkingu, a także badania roli TMT w wyjaśnianiu decyzji strategicznej firmy, niewiele jest jednak badań empirycznych badających wpływ networkingu TMT "wewnętrznego i zewnętrznego" na innowacyjność firmy. Dlatego też w niniejszym opracowaniu podjęto próbę wypełnienia tej luki poprzez przebadanie 45 liderów TMT reprezentujących 45 firm. Wyniki pokazują, że wewnętrzny i zewnętrzny networking TMT ma znaczący wpływ na innowacyjność firmy. Badanie znacząco przyczynia się do teorii Upper Echelon. Co więcej, badanie przyniesie również korzyści liderom i praktykom TMT, ponieważ podkreśliło istotny wkład networkingu wewnętrznego i zewnętrznego TMT w realizację innowacyjności firmy.

Słowa kluczowe: zespół najwyższego kierownictwa (TMT), networking, innowacyjność firmy

内部和外部高层管理团队(TMT)网络促进企业创新

摘要:本研究旨在探讨TMT网络对企业创新的影响。在竞争激烈的环境中,企业创新一直是人们关注的焦点。虽然创新等战略决策可能是由高层管理团队(TMT)提出的,但网络实际上是提供不同资源访问的重要媒介,而这些资源被认为是有助于加强判断的关键因素。和决定。尽管大量研究强调网络的有益性以及研究TMT在解释企业战略决策中的作用,但是很少有实证研究调查TMT网络“内部和外部”对企业创新的影响。因此,目前的研究试图通过调查代表45家公司的45位TMT领导人来填补这一空白。调查结果显示,TMT内部和外部网络对公司创新有重大影响。该研究显着促进了上层梯队理论。此外,该研究还将使TMT领导者和从业者受益,因为它突出了TMT内部和外部网络在实现公司创新方面的重要贡献。

关键词: 高层管理团队(TMT), 网络, 企业创新