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How do institutional pressures effect knowledge transfer activities within university-industry partnership?

Lina Anatan

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Abstract: Knowledge transfer within university and industry partnership is important to increase organisation competitiveness in domestic and international market. Fifty-one dyadic university and industry data collected through survey are used to investigate how institutional pressures (regulative, normative, cognitive) effect knowledge transfer activities. The findings show normative and cognitive pressures effect knowledge transfer activities. This study contributes to extend the use of institutional theory in explaining homogenisation between university and industry that significantly different in characteristics. The use of dyadic data might enrich related studies as most of the study used one perspective due to the complicated procedure of dyadic data collection.

Keywords: institutional pressures; knowledge transfer; university and industry partnership; dyadic data.

Reference to this paper should be made as follows: Anatan, L. (2022) 'How do institutional pressures effect knowledge transfer activities within university-industry partnership?', *Int. J. Trade and Global Markets*, Vol. 15, No. 1, pp.114–123.

Biographical notes: Lina Anatan is a Lecturer and Researcher in Maranatha Christian University, Bandung, Indonesia. She completed her Doctoral degree in Master of Science and Doctoral Program, Faculty of Economics and Business, Gadjah Mada University in 2017. Her main area of research focused on the strategic issues of supply chain management and knowledge transfer.

This paper is a revised and expanded version of a paper entitled 'Impact of institutional pressures on knowledge transfer between university and industry' presented at *SIBR 2020 (Seoul) Conference on Interdisciplinary Business and Economics Research*, Seoul, Korea, 5–6 June, 2020.

1 Introduction

Knowledge transfer within university and industry partnership has become important aspect to improve organisational competitiveness. It represents the organisation ability to access external knowledge as strategic resources to support not only the partnership success (Anatan, 2013), but also to support organisational innovation (Patluang, 2018). Institutional theory is used to examine the impact of institutional pressures on knowledge transfer within university and industry partnership in Indonesia.

According to institutional theory, organisation is copying or mimicking other organisations which perceived to be succeed in their field (DiMaggio and Powell, 1991 as cited in Anatan, 2018). They tend to imitate other organisations which have similarity, such as located in the same industry, adopt the same practice and embrace the same values or norms. This homogenisation process is known as the isomorphism (DiMaggio and Powell, 1983). On the other hand, there are many critiques on institutional theory regarding its weakness in explaining the institutional changes within homogenisation process through isomorphism (Hasselbladh and Kallinikos, 2000; Munir, 2002). Kraatz (1996) raised other critique on the institutional theory related to its low predictive power due to the inconsistencies of research results with the predictions.

The use of institutional theory is expected to provide significant contributions to the relevant literature:

- 1 to broaden the use of institutional theory in explaining homogenisation process between university and industry that significantly different
- 2 to provide empirical evidence as well as answer critiques on institutional theory regarding its weaknesses in explaining the institutional changes within homogenisation process through isomorphism and its low predictive power.

In general, this study aimed to examine the impact of institutional pressures (regulative, normative, and cognitive pressure) on knowledge transfer activities. The research questions include:

- 1 Does regulative pressure positively effects knowledge transfer?
- 2 Does normative pressure positively effects?
- 3 Does cognitive pressure positively effects?

2 Hypotheses development

2.1 The effect of regulative pressure on knowledge transfer

Regulative pressure is implemented through the exchange between both organisations, such as in case of investments in knowledge and equipment (Poglajen, 2012). Poglajen (2012) examine centrality of autonomy, exclusivity, and funding as the dimension of knowledge transfer. Autonomy refers to the power possessed by the organisation to make decisions regarding knowledge and technology transfer. Exclusivity determine whether the transfer of knowledge within the organisation providing services exclusively to cooperation partners or to other organisations. Funding refers to source of funding for organisational operations. Sources of funding might come from donations, founder, or

non-refundable grant. In conditions of low autonomy, high levels of exclusivity, and funding contributions from the non-dominant markets. Organisation will have high level of dependency and become more similar to the organisations partner. These conditions will have positive impact on the process of knowledge transfer between the alliance partners. This study developed the following hypothesis:

Hypothesis 1: Regulative pressure positively effects knowledge transfer

2.2 The effect of normative pressure on knowledge transfer

Normative pressure manifested through dyadic relationship between organisations involved in a professional relationship. Although the normative pressure usually absorbed through the affiliate professionals channel, top management of networks throughout the chain of cooperation in the alliance is much more important (Liang et al., 2007). Poglajen (2012) explain aspects of normative pressure, by obtaining a university degree, both organisations staff are expected to internalise the norms and regulations in their profession. Qualified staff in the unit of knowledge transfer organisation includes experience and development. The higher the confidence and qualification of professionals in selecting managerial and staff, the higher the levels of organisation with similar partner organisations, which positively effect on the process of knowledge transfer between organisations (Poglajen, 2012). This study developed hypothesis as follow:

Hypothesis 2: Normative pressure positively effects knowledge transfer

2.3 The effect of cognitive pressure on knowledge transfer

Cognitive pressure is associated with conformity through imitations of actors with effective behaviour. Cognitive pressure is the elusive change characteristic within the organisation (DiMaggio and Powell, 1991), prompting organisations to emulate the rules and practices of an organisation that they perceive to be succeed in their field. According to Teo et al. (2003), cognitive pressure might cause cognitive organisation changed from time to time to be identical to one another within an organisation institutional. Therefore, organisations imitate the rules and practices of other organisation that perceived to be success in their fields. This study developed the following hypotheses:

Hypothesis 3: Cognitive pressure positively effect knowledge transfer

3 Research method

3.1 Population and sample

The population of this study included all university and manufacturing and service companies operating in Indonesia. This study uses dyadic data as unit of analysis include university and industry involved in a partnership (Maguire, 1999). Respondents from the university consists of chief areas of cooperation/head of research institutes and

community service/head of business and industrial studies/head of department/ researchers. From the industry, the respondents consisted of the CEO or senior/middle management or research staff that responsible in partnership. Data collection process use survey method. Sample selected by purposive sampling method based on the consideration that the research model was tested on respondents who represented certain characteristics. The university and industry selected are universities and industry which have cooperation between universities and industry in the last five years. The selection is based on the consideration that the target respondents from both parties representing each party are individuals who are responsible or involved in the implementation of cooperation and have an understanding of the cooperation (Plewa and Quester, 2008). Selection of companies and target respondents from the company were obtained from information on cooperation data held by the university.

3.2 Variable measurement

Items of regulative pressure adopted from Teo et al. (2003) consists of three questions related to the pressure from government, industry associations, and the conditions of competition. Items of normative pressure adopted from Teo et al. (2003) consists of three questions regarding company's staff involvement, student involvement, and the government appeals or promotion. Items of cognitive pressure adopted Teo et al. (2003) which consists of three questions perception of benefits or advantages of knowledge transfer that can be felt. The instrument of knowledge transfer adopted Simonin (1999), consists of three items of questions. This study used organisational size (university and industry size) and organisational age (university and industry age) as control variables in accordance with studies conducted by Masri and Martani (2014). Organisational size and age can be specified as firm specific characteristics that might influence knowledge transfer activities (Ambarriani and Purwanugraha, 2012; Gunardi et al., 2016). The instrument measured using Likert Scale 1–7, Scale 1 = strongly disagree and Scale 7 = strongly agree, white normative pressure measured using Likert Scale 1–7. Scale 1 represents a very low scale and 7 representing very high.

4 Results and discussion

4.1 Respond rate

A total of 583 questionnaires are sent to university and industry respondents in the first and second stages. There are 16 questionnaires could not be used. 2 questionnaires are not completely filled and 14 questionnaires are not filled with recommendations from partners. The total number of questionnaires returned and can be processed in the next stage of 112 or 56 dyadic data. This study tested outlier data to clear extreme values on observations in research that could occur due to the values of the observations were very different from other observations (Hair et al., 2010). Based on the outlier data test, there are 5 pairs of respondents that must be eliminated from the data analysis stage, so that in the subsequent analysis 51 dyadic data or 102 respondents were used.

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4.2 Respondents profile

Data analysis result on university respondents profile based on their position in the organisation shows that there are 2 respondents (3.9%) are the head of research institutes and community service, 3 respondents (5.9%) are vice dean of academic affairs, 2 respondents (3.9%) are vice dean of cooperation, 11 respondents (21.6%) are head of department, 2 respondents (3.9%) are secretary of the department and 31 respondents (60.8%) as lecturers or researchers. The majority of respondents fill in the data of position in the organisation as lecturer or researcher (60.8%). While respondent profile from industry based on their position in the organisation showed that 17.6% represented by the CEO and 58.8% by the senior and middle management.

4.3 Validity and reliability testing

Validity testing used factor analysis with varimax rotation. The loading factor values for each construct are valid and acceptable if the loadings factor value is ≥ 0.5 , therefore the rule of thumb acceptance of loading factor ≥ 0.5 and not being part or member of other factors. Instruments are confirmed to be valid, if able to measure what is desired and reveal the data being researched appropriately. Table 1 shows the results of validity testing for each variable.

	Factor components						
Contruct	Item	1	2	3	4		
Regulative pressure (REG)	reg1	0.698	0.159	0.027	-0.073		
	reg2	0.886	0.033	0.082	-0.029		
	reg3	0.848	0.113	0.085	0.056		
Normative pressure (NOR)	nor1	0.415	0.210	0.674	0.006		
	nor2	0.254	-0.046	0.650	-0.064		
	nor3	-0.109	-0.028	0.785	0.238		
Cognitive pressure (COG)	cog1	0.153	0.872	-0.046	0.153		
	cog2	0.056	0.876	0.068	0.122		
	cog3	0.104	0.703	0.039	-0.097		
Knowledge transfer (KT)	kt1	0.438	0.454	-0.008	0.580		
	kt2	-0.184	0.051	0.276	0.748		
	kt3	0.114	0.292	0.085	0.516		

Table 1 Factor loadings and constructs with factor analysis

Reliability measured by Cronbach's Alpha which reflects the internal consistency of measuring instrument (Hair et al., 2010). The rule of thumb used to determine reliability of the research instrument is 0.6. The results of reliability testing by Cronbach's alpha are shown as follow: regulative pressure (0.826), normative pressure (0.699), cognitive pressure (0.826), and knowledge transfer (0.651).

4.4 Descriptive statistics

The descriptive statistics test includes the mean, and standard deviation. Respondents' answers to each question in research variables had an average of almost as good for regulative pressure variables (5.895), normative pressure (5.069), cognitive pressure (5.394), and knowledge transfer (5.131).

4.5 Interrater agreement between university and industry

The interrater agreement test to evaluate the agreement respond between the two parties showed a high enough value, i.e., 0.813. This value indicates that the level of agreement is high between the respondents from university and industry in answering questions related to cooperation between the two parties.

4.6 Hypothesis testing

Table 2 summarised the hypothesis testing result. Based on multiple regression, the value of adjusted coefficient of determination (R2 adjusted) is 0.183. It shows the model's ability to explain the variation in the dependent variable by 18.3% and the rest explained by other factors outside the model. The F value of 4.732 with a significance level of 0.006 indicates that, the independent variables are simultaneously significantly explained the dependent variable. Based on partial significance value, there is one unsupported hypothesis, Hypothesis 1 with significance value 0.979. There are two hypotheses supported by 5% confidence level Hypothesis 2 with a 0.050 significance level, Hypothesis 3 significance of 0.012.

	Standardised Coeff			R^2		
Model	Beta	t	sig	adjusted	F	sig
(Constant)		2.693	0.010	0.183	4.733	0.006
Regulative pressure	0.004	0.026	0.979			
Normative pressure	0.276	2.013	0.050			
Cognitive pressure	0.349	2.622	0.012			
University size	0.106	0.562	0.577			
Industry size	0.156	0.677	0.502			
University age	-0.076	-0.459	0.648			
Industry age	-0.087	-0.398	0.692			

Table 2Hypotheses testing

5 Discussion

The result of hypothesis testing found that institutional pressures (regulative pressure, normative pressure, and cognitive pressure) are simultaneously positive effect knowledge transfer. Partially, normative pressure and cognitive pressure positively effect knowledge transfer, while regulative pressures did not have significant effect on knowledge transfer. All control variables used in this study, namely organisation size (university and

industry) and organisation age (university and industry), had no significant effect. According to these results, it can be concluded that the effect of institutional pressure on knowledge transfer activities is not determined by either the organisational size or age.

This study contributes to answer the main institutional theory critics that there had been shortcomings in the institutional theory to explain changes in the institutional process of homogenisation between organisations through isomorphism (DiMaggio and Powell, 1991; Hasselbladh and Kallinikos, 2000; Munir, 2005).These results extend the use of institutional theory in the field of strategic management, in particular to analyse and to explain the phenomenon of knowledge transfer between university and industry that involve two organisations with different vision, mission, characteristics, and cultures. These differences become the most challenge for both organisations to engage within an alliance. Based on the institutional perspective, the process of imitation tends to be adopted by homogeneous organisations in the same industry that adopt the same values or norms. It becomes the real contribution of institutional theory in explaining the process of homogenisation between organisation with different characteristics vision, and work culture.

This study also provides empirical evidence related to criticism about the low predictive power of the theory of institutional which provide inconsistent results as predicted. Kraatz (1996) suggests that efforts to respond technical needs of local and global environment inconsistent with the institutional pressure to be homogeneous, the study shows that the theoretical predictions for institutional homogenisation is not supported. Differ with Kraatz (1996) critics, the results of this study support the institutional theory in explaining the phenomenon of knowledge transfer. In the context of knowledge transfer between university and industry in Indonesia, the homogenisation between the two organisations continue to occur. This is demonstrated by the results of hypotheses testing regarding the effect of institutional pressure on knowledge transfer which are supported. It indicates that, the theoretical predictions regarding institutional homogenisation alliance process is supported by the findings of this study.

The results of hypotheses testing regarding the positive effect of regulative pressure on knowledge transfer is not supported. It can be explained by the lack of government's role in supporting knowledge transfer activities. Researchers have argued that the role of government and industry associations in developing regulations to encourage knowledge transfer activities between university and industry is still very low (Moeliodihardjo et al., 2013; Asmara et al., 2016).

Organisation plays an important role and be proactive in promoting the policy of knowledge transfer. It was supported by the fact that many large organisations, both from industry and academic institutions, have an important role in disseminating and promoting the transfer of knowledge (Moeliodihardjo et al., 2013). According to institutional theory, normative pressures inherent in the culture and reflect assumptions, values, norms, and beliefs about individuals behaviour who are socially shared and accepted by the people (DiMaggio and Powel, 1991). In the context of dyadic partnership between university and industry, sharing system and norms through partnership can be explained from the perspective of university and industry.

Cognitive pressure positively effect knowledge transfer supported the previous empirical studies (Teo et al., 2003; Liang et al., 2007). The results also support the proposition developed by Poglajen (2012). Based on the findings, it can be concluded that the results of the study are consistent with institutional theory which states that in response to uncertainty, the organisation will tend to imitate the rules and practices of

other organisation's perceived success in its fields (Poglajen, 2012; Haveman, 1993). The findings as well answer the main criticisms of the institutional theory which stated the difficulty in explaining how institutional change within the homogenisation process between organisations (Hasselbladh and Kallinikos, 2000; Munir, 2002).

6 Conclusion, limitations, and future research

6.1 Conclusion

In general, the results are consistent with the institutional theory which shown by the significant results of hypothesis testing. This result show that the theory significantly contribute in explaining the knowledge transfer which involve two organisations with different characteristics. While the institutional theory explain the process of isomorphism in the organisation that are homogeneous. The findings of this study as well as to answer critics on institutional theory which state the weakness in explaining institutional changes in the process of homogenisation between organisations through isomorphism and the predictive power of institutional theory. These results extend the role of institutional theory in explaining the process of isomorphism amongst organisations, not only in the organisation that is homogeneous, but also organisations that have different characteristics, such as university and industry.

6.2 Limitation of the study

The study have some limitations including:

- 1 The use of purposive sampling method has drawbacks in terms of the ability to generalise the results of the study, therefore generalisations should be made with caution.
- 2 The composition of the respondents from the university in this study who have background in social science is greater. This resulted greater cooperation in the transfer of soft knowledge, such as skills, expertise, and experience. Future studies may consider the type of knowledge transfer within the collaboration
- 3 Strategic alliances related to longitudinal data, data collection through survey can only provide cross-sectional snapshot.

This is because respondents only evaluate the cooperation, the results do not reflect all the facts because each party involved in the alliance have more than one alliance or cooperation.

Future research

Suggestions for future research include:

1 The sample includes in the study could be multiple industry. The composition of the industry may indicate the presence of variability in performance among the industry so that the effect of the industry needs to be controlled. In this study the effect of control over the industry has not been done.

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2 The comparative study that distinguishes all conditions and environmental factors based institutional perspective can be done to improve the accuracy of the results in understanding the behaviour of the organisation. In addition, further research can assess the efforts of university and industry in gaining legitimacy and how the process of mimicking to adopt practices and embrace the same values or norms.

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