**MAJELIS DIKTI DAN LITBANG PIMPINAN PUSAT MUHAMMADIYAH**





**UNIVERSITAS MUHAMMADIYAH ENRE**

*Volume 2 Nomor 1 (2020) ISSN Online* : 2716-4446

# A MEDIATION ROLE OF ORGANIZATIONAL LEARNING ON RELATIONSHIP OF HARD SKILLS, SOFT SKILLS, INNOVATION AND PERFORMANCE: EVIDENCE AT ISLAMIC SCHOOL

MuhamadAgung Ali Fikri1, Masduki Asbari2\*, Agus Purwanto3, YuniantoAgung Nugroho4, Hatoli Waruwu5, Ahmad Fauji6, Abdul WahidImam Shobihi7, Eman Singgih8, RachmaNadhila Sudiyono9,Eva Agistiawati10, WulanRahma Dewi11

1,4,5,7,8,9,11,Sekolah Tinggi Ilmu Ekonomi Insan Pembangunan

2,6,10STMIK Insan Pembangunan

2,3Universitas Pelita Harapan

3Universitas BinaBangsa

\*Corresponding author:kangmasduki.ssi@gmail.com

**ABSTRACT**

The purpose of this research was to measure the effect of hard skills and soft skills towards teachers’ innovation capability in Jakarta, Bogor, Depok, TangerangandBekasi (Jabodetabek) which was mediated by an organizational learningandto measure the effect of teachers’ innovation capability towardstheir performance. Data collection was done by simple random sampling via electronic to the teacher population in Jabodetabek. The returned and valid questionnaire results were 676 samples. Data processing was used SEM method with SmartPLS 3.0 software. The results of this researchconcluded that hard skills and soft skills have a positive and significant effect on the capability of teachers’ innovation, both directly and indirectly through mediation of the organizational learning. As well as the capability of teachers’ innovation has a positive and significant effect on their performance. This new research proposed a model for building innovation capability and teachers’ performance among teachers in Jabodetabek through enhancing hard skills and soft skills with the organizational learning as a mediator. This research can pave the way to improve teachers’ readiness in facing the education era 4.0.

**Keywords**: *Hard skills, organizational learning, performance, soft skills, teachers’ innovation capability*

**INTRODUCTION**

Dramatic changes that come from industrial revolution 4.0 become a new challenge for education. This industrial revolution requiresqualified, agile, adaptive and responsive human resources against a rapid change. The world of education is facing rapid economic, social, political and technological change. Therefore, schools must be flexible to be able to adapt of the changing situations and contexts. Schools and other educational institutions need an environment that continues to grow positive and conducive in global human resource competition. Therefore, it cannot be denied that schools need synergy between teachers and the work environment that are able to make continuous improvements in innovation and performance. The point is that, in this era of knowledge economy emerges the knowledge societies that need innovation and flexibility as energy to survive of a competition. Therefore, the strategic development of educational institutions in the future is to increase knowledge resources, especially teachers, which provide space for innovation and growth.

To ensure that educational institutions, especially schools can be competitive and adaptive, teachers need to be directed and involved in pumping school performance. Teachers must be powered and empowered. As a result, schools must manifest into real organizational learning. Organizational learning that empowers teachers as one of the main elements of school transformation, as well as teachers as instruments of civilization. The form of schools as the organizational learning is very important for educational institutions that operate in the environments with rapid and unexpected changes. So that, the speed of response to change, becomes an absolute requirement to create human resources, students who are competitive and win global human resources competition.

 The knowledge of individual teachers and schools becomes intellectual capital which quickly becomes a new icon that illustrates the economic value of a school. This is the new paradigm adapted from industrial revolution 4.0. A dependence on traditional productive assets such as buildings, constructions, land and other tangible assets are no longer a major investment contribution in the future. Productive and sustainable assets in the future are intangible assets in the form of knowledge that inherent on the teacher. This research seeks to understand and explain the effect of teachers' hard skills and soft skills on their‘teachers’ innovation capability’, then,to measure the effect of theorganizational learning mediation on the relationship between hard skills, soft skills and teachers’ innovation in Indonesia.

**LITERATURE REVIEW AND HYPHOTESES**

***Hard Skills***

Hard skills are one type of knowledge that is easily documented and formed (Choi & Lee, 2003; Sousa & Rocha, 2019; Borrego et al, 2019; Wokcik et al, 2019; Cifariello, Ferragina&Ponza, 2019; Che et al, 2018; Tang et al, 2016; Bashir & Farooq, 2019; Attia&Salama, 2018), easily articulated (Haamann&Basten, 2018) and usually constitute knowledge that inherent in schools (Afsar, Masood &Umrani, 2019). In addition, hard skills can be created, written and transferred between school activity units (Lombardi, 2019). The transfer of hard skills among teachers is easier to be encouraged by a conducive school mechanisms and culture.

Hard skills can be described in general and are also based on the specific context in which these skills are used. Rainsbury et al. (2002) defines hard skills as skills that related to technical aspects for carrying out several tasks at work. Therefore, hard skills are basically cognitive and are affected by intellectual quotient (IQ) (Muhammad et al., 2019; Kenayathulla, Ahmad &Idris, 2019; Tsotsotso et al., 2017; Fan, Wei & Zhang, 2017). Contextually, some researchers use the concept of hard skills in particular the state of management. Azim et al. (2010) generally refers to hard skills in the context of project management as processes, procedures, tools, and techniques (Gale et al, 2017; Laker & Powell, 2011)

Hard skills describe behaviors and skills that can be seen in the eye (explicit). Hard skills are skills that can produce something that is visible and direct. Hard skills can be assessed from technical tests or practical tests. We can see elements of hard skills from intelligence quotient thinking that has indicators for calculating, analyzing, designing, broad insights and knowledge, modeling and critical. Hard skills are related to mastery of science, technology and technical skills related to the part of knowledge. A teacher must have skills in opening lessons, managing classes, designing group discussions, arranging rooms, and writing well (Muqowim, 2012). Hard skills are relatively easy skills to measure. Widoyoko distinguishes between two hard skills, namely their academic and vocational skills. Academic skills are the ability to master various concepts in the field of research, such as skills to define, count, explain, describe, classify, identify, describe, predict, analyze, compare, differentiate, and draw conclusions from various concepts, data and facts related to the subject (Widoyoko, 2009).

***Soft Skills***

Knowledge is classified into two types including: soft skills and hard skills (Polanyi, 1966). The definition of soft skills is knowledge that is still in the human mind and is very personal (Chen et al, 2018; Holford, 2018; Khoshorour&Gilaninia, 2018; Zebal, Ferdous& Chambers, 2019; Agyemang&Boateng, 2019; Perez-Fuillerat et al, 2018), it is difficult to be formulated and divided naturally (Deranek, McLeod & Schmidt, 2017; Wang & Liu, 2019; Asher & Popper, 2019) so that the transformation requires personal interaction (Lee, 2019). These soft skills are rooted in one's actions and experiences, including idealism, values, and emotionality (Boske&Osanloo, 2015; Kawamura, 2016; Hartley, 2018).

Based on its understanding, soft skills are categorized as personal knowledge or in other words knowledge obtained from individuals or personal (Nonaka& Toyama, 2015; Munoz et al, 2015; Stewart et al, 2017; Razmerita et al, 2016; Jaleel &Verghis, 2015; Wang et al., 2016; Serna et al., 2017; Jou et al., 2016; Rothberg & Erickson, 2017). The experience gained by each teacher is certainly different based on situations and conditions that cannot be predicted. Soft skills are not easily articulated and converted into hard skills (Mohajan, 2016; Prasarnphanich et al, 2016; Addis, 2016; Cairo Battistutti, 2017; Zang et al, 2015; Spraggon&Bodolica, 2017). However, soft skills can be empowered by the process of knowledge spiral or SECI Model (Li, Liu & Zhou, 2018; Nonaka& Hirose, 2018; Chatterjee et al, 2018; Sasaki, 2017; Lievre & Tang, 2015; Stanica&Peydro, 2016 ; Norwich et al., 2016; Hodgins&Dadich, 2017; Balde et al., 2018; Okuyama, 2017; Huang et al., 2016).

Every school educational institution must utilize the teacher's soft skills by encouraging them to share knowledge and keep learning. School educational institutions like this will become more creative, innovative and lead in the era of education 4.0. Schools can facilitate the management and use of tacit knowledge that is outside the awareness stored in the subconscious mind of each teacher with an embedding and sharing approach (Ma et al, 2018; Ferreira et al, 2018; Borges et al, 2019; Ferraris et al, 2018; Guo et al, 2018; Tsai & Hsu, 2019; Swierczek, 2019; Cantwell &Zaman, 2018).

***Organizational Learning***

Good organizational learning will be more resilient to crises (Starbuck, 2017). Dimensions such as desire, discipline, decision making, and alignment are presented as important elements of the organizational learning (Wetzel & Tint, 2019; Urban &Gaffurini, 2018). The organizational learning is also an important performance indicator to evaluate overall organizational performance (Qi &Chau, 2018) which is able to help build the necessary knowledge resources and maintain school growth and continuity. The ability to access knowledge is a distinguishing factor between one school and another. The success of the strategy of school education institutions is very significant related to the solid knowledge base that is owned by every individual of the school education institution.

***Teachers’Innovation Capability***

Industrial era 4.0 currently requires teachers’ innovation capability as a competitive advantage in schools (Malik, 2019; Muscio&Ciffolili, 2019; Durana et al, 2019; Lund &Karlsen, 2019; Haseeb et al, 2019; Jakhar et al, 2018; Hamada, 2019; 2019), competitive strategy (Culot, Orzes&Sartor, 2019), the key to face industry era 4.0 (Stachova et al, 2019) part of the quality of 21st century management (Gunasekaran, Sabramanian& Ngai, 2019), has many advantages business (Zambon et al., 2019; Parida, Sjodin&Reim, 2019). Innovation capability is recognized as one of the most important internal resources that can produce superior school educational institution performance (Zouaghi et al, 2018; Santoro et al, 2017; Castela et al, 2018; Ruiz-Torres et al, 2018; Huesig&Endres , 2019). Innovation is an important aspect of quality education (Klaeijsen, Vermeulen, & Martens, 2017).

***Performance***

According to Campbell (1990), individual performance refers to a set of individual actions and behaviors that are relevant to their organizational goals. One of the simplest definitions of individual performance is "the extent to which work is done well" (Campbell et al., 1993). Employee performance appraisal is important, not only to ensure better school management, but also to facilitate services to the development of science. Thus, good individual performance means the teacher has completed work related responsibilities to the satisfactory extent or to the extent expected by school management.

**The effect of *Hard skills*and*Soft Skills* towards*Teachers’Innovation Capability***

In the current industry 4.0 eras, which is marked by increasingly fierce competition, sustainability remains an important concern and issue. Teachers’ innovation capability is driving business sustainability. This performance depends on the culture of knowledge contained in the organization. Knowledgeconsists of tacit and hard skills. Many researchers discuss teachers’ innovation capability which concludes that innovation is effected by leadership (Samsir, 2018; Schuckert et al, 2018; Villaluz&Hechanova, 2019), employee involvement climate (Naqshbandi, Tabche&Choudhary, 2019) knowledge sharing (Kim & Shim, 2018) knowledge search (Wang, Chen & Chang, 2019) collaborative culture (Yang, Nguyen & Le, 2018) and knowledge process (Imran et al, 2018). This research, would like to examine the effect of hard skills and soft skills on teachers’ innovation capability of teachers in school educational institutions in the context of welcoming industrial revolution 4.0. Previous researchers have proven the positive and significant effect of hard skills and soft skills on teachers’ innovation capability (Ganguly et al, 2019; Aulawi, 2018; Rumanti et al, 2018 & 2019; Torres & Liang, 2016; Li et al, 2019). More specifically, many researchers conclude that soft skills have a positive and significant effect on teachers’ innovation capability (Perez-Luno et al, 2018). All of them are within the scope of business organizations. However, there are researchers who state that formal & informal learning affect teachers’ innovation capability of teachers in schools (Lecat, Beausaert, &Raemdonck, 2018). Based on the above literature, the following hypotheses are arranged:

H1: *Hard skills* directly effect towards *teachers’ innovation capability*

H2: *Soft skills* directly effect towards *teachers’ innovation capability*

**The effect of*Hard skills*and *Soft Skills* towards*Organizational Learning***

Learning organization becomes one of the strategies for organizations to study the dynamics of their business environment (Senge, 1990; Zhu et al., 2018; Kasim et al., 2018; Darwish et al., 2018). Schools with managed learning routines will produce a collection of knowledgeable individuals, both hard skills and soft skills (Hussain et al, 2018). Some researchers conclude that the organizational learning is affected by collaborative culture and knowledge sharing (Nugroho, 2018). Soft skills are found to be very significant predictors for the development of the organizational learning (Muthuveloo, Shanmugam&Teoh, 2017). Based on the above literature, the hypotheses to be examined are as follows:

H3: *Hard skills* directly effect towards *organizational learning*

H4: *Soft skills* directly effect towards *organizational learning*

**The effect ofthe *Organizational Learning*towards*Teachers’Innovation Capability***

 Knowledge creation conditioned by the organizational learning will trigger and spur teachers’ innovation capability and the organizational performance (Asbari, Purwanto&Santoso, 2019; Vijande& Sanchez, 2017; Lin & Lee, 2017). School innovation will be sustainable when it is based on a culture of learning that adds value. This learning culture that makes all teachers interact with each other so that their current knowledge and new knowledge acquired can be effectively transferred, exchanged and combined into school intelligence and knowledge (Lin & Lee, 2017; Lee et al, 2016; Chang &Lin , 2015). An organizational environment that provides excitement at work is an important factor in creating teachers’ innovation capability of the organizational members (Bani-Melhem, Zeffane&Albaity, 2018). Furthermore, based on the above literature, the hypotheses to be examined are as follows:

H5: *Organizational learning* directly effect towards *teachers’ innovation capability*

**The effect of *Teachers’ Innovation Capability* towards *Teachers’Performance***

 Organizations need to increase their flexibility, responsiveness, and efficiency, and innovation to respond challenges that faced in local and global competition (Asbari et al, 2019; Asbari et al., 2020; Purwanto et al., 2020). This is due to the rapidly increasing need for innovative product and service capabilities as well as internal processes and behavior of all members on the organization. In addressing this issue, previous researches emerged that have explored shifting from an efficiency view to innovation. The need for more knowledge about how individuals can be coordinated is to improve innovation and performance at the organizational level (Sopa et al, 2020). In addition, Asbari et al (2020) argues that internal processes should create innovations which contribute to improve performance. While Prameswari et al (2020) show that employee innovation indirectly affects the value of the organization through its effect on market and financial position. Nevertheless, according to Sopa et al. (2020)mention that innovation is very important for improving teachers’ performance and they show that schools which focus on teachers’ innovation will be more productive and competitive in the global education market. Therefore, we hypothesize:

H6: *Teachers’ innovation capability* directly effect toward s*teachers’ performance*

**The Mediation Effect ofthe *Organizational Learning*towards the relationship of Hard Skills, Soft Skills and *Teachers’ Innovation Capability***

Honeycutt (2000) explains that knowledge management is a discipline that treats intellectual capital from managed assets. Because, the concept of knowledge management basically develops from the fact that in the present and future, the main assets of an organization to be able to compete are intellectual or knowledge assets, not physical assets. In general, knowledge management carried out by the organizational learning is a technique or way to manage knowledge in organizations to create value and increase competitive advantage. The organizational learning as a mediationvariable plays a role between hard skills, soft skills and the organizational innovation. In addition, this process has been considered as a system where knowledge and skills are input, the organizational learning is the main process, and the organizational innovation is an important output (Nouri&Ghorbani, 2017; Chang, Liao & Wu, 2017).

Furthermore, based on the above literature, the hypotheses to be examined are as follows:

H7: *Hard skills*indirectly effect towards *teachers’ innovation capability* through the organizational *learning* mediation

H8: *Soft skills*indirectly effect towards *teachers’ innovation capability* through the *organizational learning* mediation



**Gambar1.** Research Model

**METHODS**

**Definition of Operational Variables dan Indicators**

The method used in this research is quantitative method. Data was collected by distributing questionnaires to all teachers of school education institutions. The instrument used to measure hard skills was adapted from Hendarman&Cantner (2017) using six items. Soft skills were also adapted from Hendarman&Cantner (2017) using four items. The organizational learning is measured from instruments adapted from Jiménez-Jiménez and Sanz-Valle (2011) using five items. Teachers’ innovation capability was adapted from Lee & Choi (2003) using five items. Teachers’ performance was adapted from Grace et al (2016) using four items. The questionnaire was designed closed except for questions / statements about the identity of respondents in the form of a semi-open questionnaire. Each closed question / statement item is given five answer options, namely: strongly agree (SS) score 5, agree (S) score 4, less agree (KS) score 3, disagree (TS) score 2, and strongly disagree (STS ) score 1. The method for processing data was by PLS and using SmartPLS software version 3.0 as a tool.

### **Populationand Sample**

The population in this research are school teachers in Jakarta, Bogor, Depok, Tangerang and Bekasi (Greater Jakarta) whose numbers have not been identified with certainty. The questionnaire was distributed electronically with a simple random sampling technique. The results of the questionnaire returned were 684 and valid were 676 samples. So 98.83% is valid from the number of questionnaires collected.

**RESULTSAND DISCUSSION**

### **Description of Sample**

**Tabel 1.** Information descriptive ofthe sample

|  |  |  |
| --- | --- | --- |
| **Criteria** | **Total** | **%** |
| Age (per October 2019) | < 30 years | 138 | 20.41% |
| 30 - 40 years | 315 | 46.60% |
| > 40 years | 223 | 32.99% |
| Teachers’ Status | Public (ASN) | 210 | 31.07% |
| Private (Swasta) | 466 | 68.93% |
| Service period as teacher | < 5 years | 214 | 31.66% |
| 5-10 years | 328 | 48.52% |
| > 10 years | 134 | 19.82% |
| Highest education | <S1(bachelor degree) | 54 | 7.99% |
|  | ≥ S1 (bachelor degree) | 622 | 92.01% |

**Validity and Reability Test Result of Research Indicator**

The testing phase of the measurement model includes convergent validity, discriminant validity and composite reliability testing. The results of the PLS analysis can be used to test the research hypothesis if all the indicators in the PLS model have met the requirements of convergent validity, discriminant validity and reliability testing.

1. **Convergent Validity Test**

Convergent validity test is done by looking at the loading factor value of each indicator to the construct. For most references, a factor weight of 0.5 or more is considered to have validation that is strong enough to explain latent constructs (Chin, 1998; Hair et al, 2010; Ghozali, 2014). In this research the minimum limit on the size of the loading factor received was 0.5, with the requirement that the AVE value of each construct> 0.5 (Ghozali, 2014).

Based on the estimation results of the PLS model in the picture above, all indicators have a loading factor value above 0.5 so that the model meets the convergent validity requirements. Apart from looking at the loading factor value of each indicator, convergent validity is also assessed from the AVE value of each construct. AVE value for each construct of this research is above 0.5. So the convergent validity of this research model meets the requirements. The value of loadings, cronbach's alpha, composite reliability and AVE of each construct can be seen in Figure 2 and Table 2 below:



**Figure 2.** Estimation valid model

**Tabel2. Items, Loadings, Cronbach’s Alpha, Composite Reliability, and Average Variance Extracted (AVE)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Variables** | **Items** | **Loadings** | **Cronbach’s Alpha** | **Composite Reliability** | **AVE** |
| Hard Skills | HS1 | 0.647 | 0.853 | 0.890 | 0.575 |
| (HS) | HS2 | 0.716 |  |  |  |
|  | HS3 | 0.811 |  |  |  |
|  | HS4 | 0.840 |  |  |  |
|  | HS5 | 0.785 |  |  |  |
|  | HS6 | 0.737 |  |  |  |
| *Soft Skills* | SS1 | 0.819 | 0.878 | 0.916 | 0.733 |
| (*SS*) | SS2 | 0.871 |  |  |  |
|  | SS3 | 0.836 |  |  |  |
|  | SS4 | 0.896 |  |  |  |
| *Organizational Learning* | OL1 | 0.888 | 0.930 | 0.947 | 0.782 |
| (OL) | OL2 | 0.915 |  |  |  |
|  | OL3 | 0.916 |  |  |  |
|  | OL4 | 0.852\\\\\\\\\\\\ |  |  |  |
|  | OL5 | 0.850 |  |  |  |
| *Teachers’ Innovation*  | TIC1 | 0.848 | 0.919 | 0.939 | 0.756 |
| *Capability* | TIC 2 | 0.876 |  |  |  |
| (TIC) | TIC 3 | 0.894 |  |  |  |
|  | TIC 4 | 0.865 |  |  |  |
|  | TIC 5 | 0.864 |  |  |  |
| Teachers’Performance | TP1 | 0.791 | 0.869 | 0.910 | 0.718 |
| (TP) | TP2 | 0.879 |  |  |  |
|  | TP3 | 0.890 |  |  |  |
|  | TP4 | 0.825 |  |  |  |

1. **Discriminant Validity Test**

Discriminant validity is carried out to ensure that each concept of each latent variable is different from the other latent variables. The model has good discriminant validity if the AVE squared value of each exogenous construct (the value on the diagonal) exceeds the correlation between the construct and the other construct (values below the diagonal) (Ghozali, 2014). The results of discriminant validity test using the AVE squared value, namely by looking at the Fornell-Larcker Criterion Value obtained as Tabel 3.

The results of the discriminant validity test in table 3 above show that all constructs have AVE square root values above the correlation value with other latent constructs (through the Fornell-Larcker criteria) so that it can be concluded that the model meets the discriminant validity.

1. **Construct Reliability Test**

Construct reliability can be assessed from the value of Cronbach's alpha and composite reliability of each construct. The recommended composite reliability and Cronbach's alpha values are more than 0.7. (Ghozali, 2014). The reliability test results in table 2 above show that all constructs have composite reliability and Cronbach's alpha values greater than 0.7 (> 0.7). In conclusion, all constructs have met the required reliability.

**Hypothesis Test**

Hypothesis test in PLS is also called the inner model test. This test includes a test of the significance of direct and indirect effects and measurement of the magnitude of the effect of exogenous variables on endogenous variables. To determine the effect of tacit and hard skills sharing on the organizational learning and teachers’ innovation capability, it takes a direct effect test. The direct effect test is performed using the t-statistic test in the partial least squared (PLS) analysis model using the help of SmartPLS 3.0 software. With the boothstrapping technique, R Square values and significance test values are obtained as the table below:

**Tabel 3. Discriminant Validity**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Variables** | ***HS*** | **OL** | **SS** | ***TIC*** | ***TP*** |
| **HS** | **0.758** |  |  |  |  |
| **OL** | 0.685 | **0.885** |  |  |  |
| **SS** | 0.631 | 0.653 | **0.856** |  |  |
| **TIC** | 0.642 | 0.749 | 0.571 | **0.869** |  |
| **TP** | 0.540 | 0.576 | 0.627 | 0.569 | **0.847** |

**Tabel4.** *R Square* Value

|  |  |  |
| --- | --- | --- |
|  | **R Square** | **R Square Adjusted** |
| **OL** | 0.695 | 0.694 |
| **TIC** | 0.741 | 0.739 |
| **TP** | 0.324 | 0.322 |

**Tabel5.** Hypothesis Test

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Hypothesis** | **Relationship** | **Beta** | **SE** | **T Statistics** | **P-Values** | **Decision** |
| H1 | HS ->TIC | 0.214 | 0.043 | 3.943 | 0.000 | Supported |
| H2 | SS ->TIC | 0.272 | 0.040 | 4.502 | 0.001 | Supported |
| H3 | HS -> OL | 0.278 | 0.037 | 5.517 | 0.000 | Supported |
| H4 | SS -> OL | 0.602 | 0.035 | 14.081 | 0.000 | Supported |
| H5 | OL ->TIC | 0.443 | 0.047 | 6.805 | 0.000 | Supported |
| H6 | TIC->TP | 0.569 | 0.029 | 16.305 | 0.000 | Supported |
| H7 | HS -> OL -> TIC | 0.123 | 0.026 | 3.637 | 0.000 | Supported |
| H8 | SS -> OL ->TIC | 0.266 | 0.026 | 7.162 | 0.000 | Supported |

Based on Table 4 above, R Square OL value of 0.695 means that the organizational learning (OL) variables can be explained by hard skills (HS) and soft skills (SS) variables by 69.5%, while the remaining 30.5% is explained by other variables (not discussed in this research). Meanwhile, the value of R Square teachers’ innovation capability (TIC) is 0.741 which means that the teachers’ innovation capability variable is able to explain the variables of hard skills, soft skills and the organizational learning by 74.1%, while the remaining 25.9% is explained by other variables (not discussed in the research). The R Square TP value of 0.324 which means that the teachers’ performance variable (TP) can be explained by the teachers’ innovation capability (TIC) variable by 32.4%, while the remaining 67.6% is explained by other variables (not discussed in this research). While Table 5 displays the T Statistics and P-Values ​​which show the effect between the research variables that have been mentioned.

**Discussion**

Based on the results of the research, it can be concluded that hard skills sharing has a positive and significant impact on teachers’ innovation capability, both directly and through the organizational learning mediation. This means that the more positive hard skills possessed by teachers, the teachers’ innovation capability of individual teachers in school education institutions will also increase. This finding is in line with previous research on business the organizations, namely Perez-Luno et al (2018), Terhorst et al (2018), Boadu et al (2018), Che et al (2019). Likewise, soft skills have a positive and significant effect on teachers’ innovation capability, both directly and through the organizational learning mediation. This means that the more positive soft skills possessed by the teacher, the teachers’ innovation capability of the individual teacher will also increase. That is, the organizational learning becomes between teachers’ soft skills and teachers’ innovation capability.

The results of this research also concluded that hard skills and soft skills had a positive and significant effect on the organizational learning. This means that the better hard skills and soft skills controlled by a teacher, the more positive formation and development of the organizational learning in school education institutions. This is in line with the conclusions of Qi &Chau (2018) research on business the organizations. This implies that the rarest and most valuable resources in the digital age are not ordinary teachers and mediocre, but teachers who can create new ideas and innovations (Xu, David & Kim, 2018). Teachers play a key role in producing and reusing their knowledge and intellectual property through education and teaching (Al-Kurdi, El-Haddadeh&Eldabi, 2018). For this reason, the scarcity of teachers who have adequate hard skills and soft skills can paralyze the power of innovation, competitiveness, growth and flexibility of school education institutions. No doubt, in the future, the talent and response of school teachers in improving hard skills and soft skills will be an important factor in the future of nation's education. School teachers with skills and innovations will become capital luxury items and instruments of civilization.

Several researches have concluded that soft skills have more effect on innovation than hard skills (Ibrahim, Boerhannoeddin&Bakare, 2017; Albandea&Giret, 2018; Viviers, Fouche&Reitsma, 2016; Escrig-Tena et al, 2018). However, this research shows that hard skills have a greater effect on teachers’ innovation capability. The rational possibility is because the research respondents were in big cities, namely in Jakarta, Bogor, Depok, Tangerang and Bekasi (Greater Jakarta).

Based on the findings of this research, the facts conclude that the organizational learning has a positive and significant effect on teachers’ innovation capability. The organizational learning also mediates the effect of hard skills and soft skills on teachers’ innovation capability. Likewise teachers’ innovation capability has a positive and significant effect on teachers’ performance. This is consistent with the conclusion of Martinez-Costa (2018). The research also concluded that school education institutions could manage past experiences to be combined with the current hard skills and soft skills that teachers have. In essence, the organizational learning is able to provide positive conditions in the process of knowledge creation in the current education 4.0 eras.

**CONCLUSIONS AND SUGGESTIONS**

***Conclusions***

To add the role of soft skills as a predictor of teachers’ innovation capability, schools need to provide autonomy andbreadth to share knowledge to the teachers. Therefore, schools need to create an organizational learning as positive environment that drives the competence and engagement of individual teachers in school education institutions. Indeed knowledge management will run effectively in school education institutions if the individual performance of each teacher is in good condition (Manaf et al, 2017).

Researchers continue to learn about knowledge as an important school resource. It can be said that skills, both hard skills and soft skills, can significantly improve school performance. The organizational learning transforms individual knowledge into school knowledge. This research concludes that the organizational learning acts as a catalyst of the process of knowledge creation among teachers in schools. Because, in fact, the teacher who carries the obligation to prepare their students to learn and work in this knowledge society.

***Managerial Implications***

 Based on the conclusions of this research, the management of school education institutions needs to build maximum involvement of all teachers to continuously improve their hard skills and soft skills. Teacher training in each section of the school is a necessity with the level of intensity, content and context tailored to the key performance indicators of each teacher. In essence, team learning behavior created in the school environment will be a driving force for teachers’ innovation (Widmann& Mulder, 2018).

The process of improving skills to build teachers’ innovation capability of school education institutions should not only be limited to the internal processes of the school. However, school management needs to expand the process of building this innovation through efforts to absorb, articulate, utilize and manage knowledge sourced from external school partners such as parents, government, communities, and other educational institutions. School management can activate learning from others when assigning their teachers to attend training, seminars, workshops, visits to other schools, meet with school committees and other strategic partners. Because external knowledge, such as those from trainers, coaches, students' parents, the government, the community, and other educational institutions support the teachers’ innovation capability of school education institutions.

In addition, commitment to learn and seriousness to be involved in managing the learning environment are things that need attention. Because school education institutions can become the organizational learning when all members of the school educational institutions feel that they enjoy the learning process. Learning process becomes a school culture that encourages innovation (Asbari, Santoso&Purwanto, 2019). The key factors of the organizational learning are trust, open communication, high involvement, the presence of industry challenges, and a creative work atmosphere. The task of school management is to facilitate the fulfillment of these key factors.

***Limitation***

This research has several limitations. First, this research analyzes the effect of hard skills and soft skills on teachers’ innovation capability of teachers, both directly and indirectly through the organizational learning variables. Because there may be several other variables that affect teachers’ innovation capability, the authors strongly recommend finding, exploring and analyzing them. Second, this research is conducted in a school educational institution environment and may not be generalized to other industries. Therefore it is highly recommended that further research can be carried out on this topic in other industries.

**REFERENCES**

Albandea, I. and Giret, J. (2018), "The effect of soft skills on French post-secondary graduates’ earnings", *International Journal of Manpower*, Vol. 39 No. 6, pp. 782-799. <https://doi.org/10.1108/IJM-01-2017-0014>

Al-Kurdi, O., El-Haddadeh, R., &Eldabi, T. (2018). *Knowledge* sharing in higher education institutions: a systematic review. *Journal of Enterprise Information Management, 31(2), 226–246.*doi:10.1108/jeim-09-2017-0129

Asbari, M., Santoso, P., &Purwanto, A. (2019).  Influence of Leadership, Motivation, Competence, Commitment and Culture on ISO 9001:2015 Performance in Packaging Industry,  Scholars Journal of Economics, Business and Management, 6(12): 577-582.

Asbari, M., Santoso, P., and Purwanto, A. (2019). Influence of Leadership, Motivation, Competence, Commitment and Culture on ISO 9001:2015 *Performance* in Packaging Industry, Scholars Journal of Economics, Business and Management, 6(12): 577-582. DOI: 10.36347/sjebm.2019.v06i12.005

Asbari, M., Santoso, P., and Purwanto, A. (2019). Pengaruhkepemimpinandanbudayasekolahterhadapperilakukerjainovatifpadaindustri 4.0. JIM UPB (JurnalIlmiahManajemenUniversitasPuteraBatam), 8(1), 7-15. doi:10.33884/jimupb.v8i1.1562

Asbari, M., Wijayanti, L.M.,Hyun, C.C., Purwanto, A., Santoso, P.B., Bernarto, I., Pramono, R., Fayzhall, M. (2020). The Role of Knowledge Transfer and Organizational Learning toBuild Innovation Capability: Evidence from Indonesian Automotive Industry. International Journal of Control and Automation.13(1).19-322

Asbari,M. Wijayanti,L.Hyun,C.C, Purwanto,A, Santoso,P.B.(2020). How to Build Innovation Capability in the RAC Industry to Face Industrial Revolution 4.0?, International Journal of Psychosocial Rehabilitation. 24(6). 2008-2027. DOI: 10.37200/IJPR/V24I6/PR260192

Asher, D., & Popper, M. (2019). *Soft skills* as a multilayer phenomenon: the “onion” model*. The Learning Organization.*doi:10.1108/tlo-06-2018-0105

Assyne N. (2019) Hard Competencies Satisfaction Levels for Software Engineers: A Unified Framework. In: Hyrynsalmi S., Suoranta M., Nguyen-Duc A., Tyrväinen P., Abrahamsson P. (eds) Software Business. ICSOB 2019. Lecture Notes in Business Information Processing, vol 370. Springer, Cham. https://doi.org/10.1007/978-3-030-33742-1\_27

Attia, A. and Salama, I. (2018), "*Knowledge* management capability and supply chain management practices in the Saudi food industry", *Business Process Management Journal*, Vol. 24 No. 2, pp. 459-477. <https://doi.org/10.1108/BPMJ-01-2017-0001>

Aulawi, H. (2018). *Improving Teacher innovation capability Trough Creativity and Knowledge Sharing Behavior. IOP Conference Series: Materials Science and Engineering, 434, 012242.* doi:10.1088/1757-899x/434/1/012242

Azim, S., Gale, A., Lawlor‐Wright, T., Kirkham, R., Khan, A., &Alam, M. (2010). *The importance of soft skills in complex projects. International Journal of Managing Projects in Business, 3(3), 387–401.*doi:10.1108/17538371011056048

Baldé, M., Ferreira, A. and Maynard, T. (2018), "SECI driven creativity: the role of team trust and intrinsic motivation", *Journal of Knowledge Management*, Vol. 22 No. 8, pp. 1688-1711. <https://doi.org/10.1108/JKM-06-2017-0241>

Bani-Melhem, S., Zeffane, R. and Albaity, M. (2018), "Determinants of employees’ innovative behavior", *International Journal of Contemporary Hospitality Management*, Vol. 30 No. 3, pp. 1601-1620. <https://doi.org/10.1108/IJCHM-02-2017-0079>

Bashir, M. and Farooq, R. (2019), "The synergetic effect of *knowledge* management and business model innovation on firm competence: A systematic review", *International Journal of Innovation Science*, Vol. 11 No. 3, pp. 362-387. <https://doi.org/10.1108/IJIS-10-2018-0103>

Boadu, F., Xie, Y., Du, Y.-F., &Dwomo-Fokuo, E. (2018). *MNEs Subsidiary Training and Development and Firm Innovative Performance: The Moderating Effects of Tacit and Hard skills Received from Headquarters. Sustainability, 10(11), 4208.*doi:10.3390/su10114208

Borges, R., Bernardi, M. and Petrin, R. (2019), "Cross-country findings on *soft skills* sharing: evidence from the Brazilian and Indonesian IT workers", *Journal of Knowledge Management*, Vol. 23 No. 4, pp. 742-762. <https://doi.org/10.1108/JKM-04-2018-0234>

Borrego, G., Morán, A. L., Palacio, R. R., Vizcaíno, A., &García, F. O. (2019). Towards a reduction in architectural *knowledge* vaporization during agile global software development*. Information and Software Technology.* doi:10.1016/j.infsof.2019.04.008

Boske, C. and Osanloo, A. (2015), "Conclusion – Preparing all School Community Leaders to Live their Work", *Living the Work: Promoting Social Justice and Equity Work in Schools around the World* (*Advances in Educational Administration, Vol. 23*), Emerald Group Publishing Limited, pp. 405-426. <https://doi.org/10.1108/S1479-366020140000023032>

CairóBattistutti, O. & Bork, D. Cogn Process (2017) 18: 461. <https://doi.org/10.1007/s10339-017-0825-6>

Campbell, J. (1990), “Modeling the performance prediction problem in industrial andorganizational psychology”, in Dunnette, M. and Hough, L. (Eds.), *Handbook ofOrganizational and Industrial Psychology*, Consulting Psychologists Press, Palo Alto, CA, pp. 687-732.

Campbell, J.P., McCloy, R.A., Oppler, S.H. and Sager, C.E. (1993), “A theory of performance”, in Schmitt, N. and Borman, W. (Eds.), *Personnel Selection in Organizations*, Jossey-Bass, San Francisco, CA, pp. 35-70.

Cantwell, J. and Zaman, S. (2018), "Connecting local and global technological *knowledge* sourcing", *Competitiveness Review*, Vol. 28 No. 3, pp. 277-294. <https://doi.org/10.1108/CR-08-2017-0044>

Castela, B., Ferreira, F., Ferreira, J. and Marques, C. (2018), "Assessing the *teacher innovation capability* of small- and medium-sized enterprises using a non-parametric and integrative approach", *Management Decision*, Vol. 56 No. 6, pp. 1365-1383. <https://doi.org/10.1108/MD-02-2017-0156>

Chang, C. and Lin, T. (2015), "The role of organizational culture in the *knowledge* management process", *Journal of Knowledge Management*, Vol. 19 No. 3, pp. 433-455. <https://doi.org/10.1108/JKM-08-2014-0353>

Chang, W.-J., Liao, S.-H., & Wu, T.-T. (2017). *Relationships among organizational culture, knowledge sharing, and innovation capability: a case of the automobile industry in Taiwan. Knowledge Management Research & Practice, 15(3), 471–490.*doi:10.1057/s41275-016-0042-6

Chatterjee, A., Pereira, A. and Sarkar, B. (2018), "Learning transfer system inventory (LTSI) and *knowledge* creation in organizations", *The Learning Organization*, Vol. 25 No. 5, pp. 305-319. <https://doi.org/10.1108/TLO-06-2016-0039>

Che, T., Wu, Z., Wang, Y. and Yang, R. (2019), "Impacts of *knowledge* sourcing on employee innovation: the moderating effect of information transparency", *Journal of Knowledge Management*, Vol. 23 No. 2, pp. 221-239. <https://doi.org/10.1108/JKM-11-2017-0554>

Che, T., Wu, Z., Wang, Y., & Yang, R. (2018). Impacts of *knowledge* sourcing on employee innovation: the moderating effect of information transparency*. Journal of Knowledge Management.*doi:10.1108/jkm-11-2017-0554

Chen, H., BaptistaNunes, M., Ragsdell, G., &An, X. (2018). Extrinsic and intrinsic motivation for experience grounded *soft skills* sharing in Chinese software organisations*. Journal of Knowledge Management, 22(2), 478–498.*doi:10.1108/jkm-03-2017-0101

Chin, WW. (1998). *The Partial Least Squares Approach to Structural Equation Modeling*. Modern Methods for Business Research, In: G. A. Marcoulides, Ed., Lawrence Erlbaum Associates Publisher, New Jersey, pp. 295-336.

Cifariello, P., Ferragina, P., &Ponza, M. (2019). Wiser: A semantic approach for expert finding in academia based on entity linking*. Information Systems, 82, 1–16.* doi:10.1016/j.is.2018.12.003

Culot, G., Orzes, G., & Sartor, M. (2019). Integration and scale in the context of Industry 4.0: the evolving shapes of manufacturing value chains*. IEEE Engineering Management Review, 1–1.* doi:10.1109/emr.2019.2900652

Darwish, T. K., Zeng, J., RezaeiZadeh, M., &Haak-Saheem, W. (2018). *Organizational learning of Absorptive Capacity and Innovation: Does Leadership Matter? European Management Review.* doi:10.1111/emre.12320

Deranek, K., McLeod, A., & Schmidt, E. (2017). ERP Simulation Effects on *Knowledge* and Attitudes of Experienced Users*. Journal of Computer Information Systems, 1–11.* doi:10.1080/08874417.2017.1373610

DOI: <http://doi.org/10.36347/sjebm.2019.v06i12.005>

Durana, Kral, Stehel, Lazaroiu, &Sroka. (2019). Quality Culture of Manufacturing Enterprises: A Possible Way to Adaptation to Industry 4.0. *Social Sciences, 8(4), 124.*doi:10.3390/socsci8040124

Escrig-Tena, A. B., Segarra-Ciprés, M., García-Juan, B., &Beltrán-Martín, I. (2018). *The impact of hard and soft quality management and proactive behaviour in determining innovation performance. International Journal of Production Economics, 200, 1–14.* doi:10.1016/j.ijpe.2018.03.011

# Fan, C.S., Wei, X., and Zhang, J. (2017). Soft Skills, Hard Skills, and The Black/White Wage Gap. Wiley Online Library. 55(2):1032-1052. Doi: <https://doi.org/10.1111/ecin.12406>

Ferraris, A., Santoro, G. and Scuotto, V. (2018), "Dual relational embeddedness and *knowledge* transfer in European multinational corporations and subsidiaries", *Journal of Knowledge Management*, Vol. ahead-of-print No. ahead-of-print. <https://doi.org/10.1108/JKM-09-2017-0407>

Ferreira, J., Mueller, J. and Papa, A. (2018), "Strategic *knowledge* management: theory, practice and future challenges", *Journal of Knowledge Management*, Vol. ahead-of-print No. ahead-of-print. <https://doi.org/10.1108/JKM-07-2018-0461>

# Gale, A. J., Duffey, M. A., Park-Gates, S., & Peek, P. F. (2017). *Soft Skills versus Hard Skills: Practitioners’ Perspectives on Interior Design Interns. Journal of Interior Design, 42(4), 45–63.* doi:10.1111/joid.12105

Ganguly, A., Talukdar, A. and Chatterjee, D. (2019), "Evaluating the role of social capital, *soft skills* sharing, *knowledge* quality and reciprocity in determining *teacher innovation capability* of an organization", *Journal of Knowledge Management*, Vol. 23 No. 6, pp. 1105-1135. <https://doi.org/10.1108/JKM-03-2018-0190>

Ghozali, I. *Structural Equation Modeling, MetodeAlternatifdengan Partial Least Square (PLS),*Edisi 4. Semarang: BadanPenerbitUniversitasDiponegoro. 2014.

Grace, P., Mustamu, R. H., Bisnis, P. M., Manajemen, P. S., Petra, U. K., &Siwalankerto, J. (2016). Pengaruh Employee Engagement terhadapKinerjaKaryawanpada Perusahaan KeluargaProdusenSenapanAngin, *4*(2), 101–107. http://publication.petra.ac.id/index.php/manajemen-bisnis/article/view/4738

Gunasekaran, A., Subramanian, N., & Ngai, E. (2018). Quality Management in the 21st Century Enterprises: Research pathway towards Industry 4.0. *International Journal of Production Economics.* doi:10.1016/j.ijpe.2018.09.005

Guo, Y., Jasovska, P., Rammal, H. and Rose, E. (2018), "Global mobility of professionals and the transfer of *soft skills* in multinational service firms", *Journal of Knowledge Management*, Vol. ahead-of-print No. ahead-of-print. <https://doi.org/10.1108/JKM-09-2017-0399>

Haamann, T., &Basten, D. (2018). The role of information technology in bridging the knowing-doing gap: an exploratory case study on *knowledge* application*. Journal of Knowledge Management.*doi:10.1108/jkm-01-2018-0030

Hair, J. F., Black. W. C., Babin. B. J.; and Anderson. R. E. (2010), *Multivariate Data Analysis,* 7th ed. New Jersey: Pearson Prentice Hall.

Hamada, T. (2019). Determinants of Decision-Makers’ Attitudes toward Industry 4.0 Adaptation. *Social Sciences, 8(5), 140.*doi: 10.3390/socsci8050140

Hartley, J. (2018), "Ten propositions about public leadership", *International Journal of Public Leadership*, Vol. 14 No. 4, pp. 202-217. <https://doi.org/10.1108/IJPL-09-2018-0048>

Haseeb, M., Hussain, H. I., Ślusarczyk, B., &Jermsittiparsert, K. (2019). Industry 4.0: A Solution towards Technology Challenges of Sustainable Business *Performance*. *Social Sciences, 8(5), 154.*doi:10.3390/socsci8050154

Hodgins, M. and Dadich, A. (2017), "Positive emotion in *knowledge* creation", *Journal of Health Organization and Management*, Vol. 31 No. 2, pp. 162-174. <https://doi.org/10.1108/JHOM-06-2016-0108>

Holford, W.D. (2018). The future of human creative *knowledge* work within the digital economy. *Futures.* doi:10.1016/j.futures.2018.10.002

Holste, J. S., & Fields, D. (2010). Trust and *soft skills* sharing and use. Journal of *Knowledge* Management, *14(1), 128–140.*doi:10.1108/13673271011015615

Honeycutt, Jerry. (2000). *Knowledge Management Strategies:  StrategiManajemenPengetahuan*. Jakarta : PT. Alex Media Komputindo.

[Hong, J.](https://www.emerald.com/insight/search?q=Jacky%20Hong) (1999). Structuring for organizational learning. *The Learning Organization*, Vol. 6 No. 4, pp. 173-186. <https://doi.org/10.1108/09696479910280631>

Huang, F., Gardner, S. and Moayer, S. (2016), "Towards a framework for strategic *knowledge* management practice: Integrating soft and hard systems for competitive advantage", *VINE Journal of Information and Knowledge Management Systems*, Vol. 46 No. 4, pp. 492-507. <https://doi.org/10.1108/VJIKMS-08-2015-0049>

Huesig, S. and Endres, H. (2019), "Exploring the digital innovation process: The role of functionality for the adoption of innovation management software by innovation managers", *European Journal of Innovation Management*, Vol. 22 No. 2, pp. 302-314. <https://doi.org/10.1108/EJIM-02-2018-0051>

Hussain, S. T., Lei, S., Akram, T., Haider, M. J., Hussain, S. H., & Ali, M. (2018). Kurt Lewin’s change model: A critical review of the role of leadership and employee involvement in organizational change. Journal of Innovation &*Knowledge*, 3(3), 123–127. doi:10.1016/j.jik.2016.07.002

Hyun,C.C, Wijayanti,L.M., Asbari,M.,Purwanto,A. Santoso,P.B., IGAK Wardani, Bernarto,I., Pramono,R., (2020). Implementation of Contextual Teaching and Learning (CTL) to

Ibrahim, R., Boerhannoeddin, A. and Bakare, K. (2017), "The effect of soft skills and training methodology on employee performance", *European Journal of Training and Development*, Vol. 41 No. 4, pp. 388-406. <https://doi.org/10.1108/EJTD-08-2016-0066>

Improve the Concept and Practice of Love for Faith-Learning Integration, International Journal of Control and Automation.13(1).365-383. <http://sersc.org/journals/index.php/IJCA/article/view/5737>

Imran, M., Ilyas, M., Aslam, U. and Fatima, T. (2018), "*Knowledge* processes and firm *performance*: the mediating effect of employee creativity", *Journal of Organizational Change Management*, Vol. 31 No. 3, pp. 512-531. <https://doi.org/10.1108/JOCM-10-2016-0202>

Jakhar, S. K., Mangla, S. K., Luthra, S., &Kusi-Sarpong, S. (2018). When stakeholder pressure drives the circular economy. *Management Decision.*doi:10.1108/md-09-2018-0990

Jaleel, S. and Verghis, A.M. (2015). *Knowledge* Creation in Constructivist Learning. *Universal Journal of Educational Research* 3(1): 8-12. doi: 10.13189/ujer.2015.030102.

Jiménez-Jiménez, D., &Sanz-Valle, R. (2011). Innovation, *organizational learning*, and *performance. Journal of Business Research, 64(4), 408–417.* doi:10.1016/j.jbusres.2010.09.010

Jou, M. Lin, Y. and Wu, D. (2016) Effect of a blended learning environment on student critical thinking and *knowledge* transformation, Interactive Learning Environments, 24:6, 1131-1147, DOI: [10.1080/10494820.2014.961485](https://doi.org/10.1080/10494820.2014.961485)

Kasim, A., Ekinci, Y., Altinay, L. and Hussain, K.(2018)Impact of market orientation, *organizational learning*​ and market conditions on small and medium-size hospitality enterprises,Journal of Hospitality Marketing & Management,27:7,855-875,DOI: [10.1080/19368623.2018.1438955](https://doi.org/10.1080/19368623.2018.1438955)

Kawamura, K. (2016), "Kristine Marin Kawamura, PhD interviews IkujiroNonaka, PhD", *Cross Cultural & Strategic Management*, Vol. 23 No. 4, pp. 613-632. <https://doi.org/10.1108/CCSM-06-2014-0056>

[Kenayathulla, H.](https://www.emerald.com/insight/search?q=Husaina%20Banu%20Kenayathulla), [Ahmad, N.](https://www.emerald.com/insight/search?q=Nor%20Aziah%20Ahmad) and [Idris, A.](https://www.emerald.com/insight/search?q=Abdul%20Rahman%20Idris) (2019), "Gaps between competence and importance of employability skills: evidence from Malaysia", [*Higher Education Evaluation and Development*](https://www.emerald.com/insight/publication/issn/2514-5789), Vol. 13 No. 2, pp. 97-112. <https://doi.org/10.1108/HEED-08-2019-0039>

[Khoshsorour, A.](https://search.proquest.com/indexinglinkhandler/sng/au/Khoshsorour%2C%2BAshkan/%24N;jsessionid=22E4581BCBDB4A23FB6BD1D142CE17B6.i-06ce038c0d5ed1c8f), Gilaninia, S. 2018. **Kuwait Chapter of the Arabian. *Journal of Business and Management Review; Kuwait City*** 7(3): 1-4. doi: 10.12816/0048627

Kim, N. and Shim, C. (2018). Social capital, *knowledge* sharing and innovation of small- and medium-sized enterprises in a tourism cluster. *International Journal of Contemporary Hospitality Management*, Vol. 30 No. 6, pp. 2417-2437. <https://doi.org/10.1108/IJCHM-07-2016-0392>

Klaeijsen, A., Vermeulen, M., & Martens, R. (2017). Teachers’ Innovative Behaviour: The Importance of Basic Psychological Need Satisfaction, Intrinsic Motivation, and Occupational Self-Efficacy. *Scandinavian Journal of Educational Research, 62(5), 769–782.* doi:10.1080/00313831.2017.1306803

# Laker, D. R., & Powell, J. L. (2011). *The differences between hard and soft skills and their relative impact on training transfer. Human Resource Development Quarterly, 22(1), 111–122.* doi:10.1002/hrdq.20063

Lecat, A., Beausaert, S. &Raemdonck, I. (2018). On the Relation Between Teachers’ (In)formal Learning and Innovative Working Behavior: the Mediating Role of Employability. *Vocations and Learning*11, 529–554. doi:10.1007/s12186-018-9199-x

Lee, J.-C., Shiue, Y.-C., & Chen, C.-Y. (2016). *Examining the impacts of organizational culture and top management support of knowledge sharing on the success of software process improvement. Computers in Human Behavior, 54, 462–474.* doi:10.1016/j.chb.2015.08.030

Lee, Peter. (2019). *Soft skills* and University-Industry Technology Transfer. *Research Handbook on Intellectual Property and Technology Transfer (2019, Forthcoming); UC Davis Legal Studies Research Paper Forthcoming.*doi: http://dx.doi.org/10.2139/ssrn.3417933

Li, M., Liu, H. and Zhou, J. (2018), "G-SECI model-based *knowledge* creation for CoPS innovation: the role of grey *knowledge*", *Journal of Knowledge Management*, Vol. 22 No. 4, pp. 887-911. <https://doi.org/10.1108/JKM-10-2016-0458>

Li, Song, Wang, & Li. (2019). *Intellectual Capital, Knowledge Sharing, and Innovation Performance: Evidence from the Chinese Construction Industry. Sustainability, 11(9), 2713.*doi:10.3390/su11092713

Liebowitz, J. and Chen, Y. 2001. Developing *knowledge*-sharing proficiencies. *Knowledge Management Review* 3(6): 12-15. https://www.researchgate.net/publication/ 285908349\_Developing\_*knowledge*-sharing\_proficiencies\_Building\_a\_supportive\_ culture\_for\_*knowledge*-sharing

Lievre, P. and Tang, J. (2015), "SECI and inter-organizational and intercultural *knowledge* transfer: a case-study of controversies around a project of co-operation between France and China in the health sector", [*Journal of Knowledge Management*](https://www.emerald.com/insight/publication/issn/1367-3270), Vol. 19 No. 5, pp. 1069-1086. <https://doi.org/10.1108/JKM-02-2015-0054>

Lin, C.-P. (2006). To Share or Not to Share: Modeling *Soft skills* Sharing, Its Mediators and Antecedents*. Journal of Business Ethics, 70(4), 411–428.*doi:10.1007/s10551-006-9119-0

Lin, H., Lee, Y. (2017). A Study of The Influence of *Organizational learning* on Employees’ Innovative Behavior and Work Engagement by A Cross-Level Examination. *Eurasia Journal of Mathematics, Science and Technology Education*, *13*(7), 3463-3478. https://doi.org/10.12973/eurasia.2017.00738a

Lombardi, R. (2019). *Knowledge* transfer and organizational *performance* and business process: past, present and future researches. *Business Process Management Journal, 25(1), 2–9.*doi:10.1108/bpmj-02-2019-368

Lund, H. B., &Karlsen, A. (2019). The importance of vocational education institutions in manufacturing regions: adding content to a broad definition of regional innovation systems. *Industry and Innovation, 1–20.* doi:10.1080/13662716.2019.1616534

Ma, Q., Mayfield, M. and Mayfield, J. (2018), "Keep them on-board! How organizations can develop employee embeddedness to increase employee retention", *Development and Learning in Organizations*, Vol. 32 No. 4, pp. 5-9. <https://doi.org/10.1108/DLO-11-2017-0094>

Malik, A. (2019). Creating competitive advantage through source basic capital strategic humanity in the industrial age 4.0. *International Research Journal of Advanced Engineering and Science* 4(1): 209-215. www.irjaes.com/pdf/V4N1Y18-IRJAES/IRJAES-V4N1P195Y19.pdf

Manaf, H. A., Armstrong, S. J., Lawton, A., & Harvey, W. S. (2017). *Managerial Soft skills, Individual Performance, and the Moderating Role of Employee Personality. International Journal of Public Administration, 1–13.* doi:10.1080/01900692.2017.1386676

Martínez-Costa, M., Jiménez-Jiménez, D., & Dine Rabeh, H. A. (2018). *The effect of organisational learning on interorganisational collaborations in innovation: an empirical study in SMEs. Knowledge Management Research & Practice, 1–14.* doi:10.1080/14778238.2018.1538601

Mohajan, Haradhan (2016): Sharing of Soft skills in Organizations: A Review. Published in: American Journal of Computer Science and Engineering, Vol. 3, No. 2 (1 July 2016): pp. 6-19. <https://mpra.ub.uni-muenchen.de/id/eprint/82958>

[Moustaghfir, K.](https://www.emerald.com/insight/search?q=Karim%20Moustaghfir) and [Schiuma, G.](https://www.emerald.com/insight/search?q=Giovanni%20Schiuma) (2013), "Knowledge, learning, and innovation: research and perspectives", [*Journal of Knowledge Management*](https://www.emerald.com/insight/publication/issn/1367-3270), Vol. 17 No. 4, pp. 495-510. <https://doi.org/10.1108/JKM-04-2013-0141>

# Muhammad, A., Ariyani, E.D., Sadikin, S., Sujana, D. (2019). Factor Analysis of the Companies Demands to the Polytechnic Graduates in Indonesia. Advanced Science Letters, Volume 25, Number 1, January 2019, pp. 117-121(5)**DOI:**https://doi.org/10.1166/asl.2019.13199

Muñoz, C.A., Mosey, S. and Binks, M.(2015)The*tacit* mystery: reconciling different approaches to *soft skills*.*Knowledge Management Research & Practice*,13:3,289-298,DOI: [10.1057/kmrp.2013.50](https://doi.org/10.1057/kmrp.2013.50)

Muqowim (2012). *Pengembangan Soft Skills Guru.* Yogyakarta: Pedagogia

Muscio, A., &Ciffolilli, A. (2019). *What drives the capacity to integrate Industry 4.0 technologies? Evidence from European R&D projects. Economics of Innovation and New Technology, 1–15.*doi:10.1080/10438599.2019.1597413

Muthuveloo, R., Shanmugam, N., &Teoh, A. P. (2017). The impact of *soft skills* management on organizational *performance*: Evidence from Malaysia*. Asia Pacific Management Review, 22(4), 192–201.* doi:10.1016/j.apmrv.2017.07.010

Naqshbandi, M., Tabche, I. and Choudhary, N. (2019), Managing open innovation: The roles of empowering leadership and employee involvement climate, *Management Decision*, Vol. 57 No. 3, pp. 703-723. <https://doi.org/10.1108/MD-07-2017-0660>

Nonaka I., Hirose Nishihara A. (2018) Introduction to the Concepts and Frameworks of *Knowledge*-Creating Theory. In: Hirose Nishihara A., Matsunaga M., Nonaka I., Yokomichi K. (eds) *Knowledge* Creation in Community Development. Palgrave Macmillan, Cham. https://doi.org/10.1007/978-3-319-57481-3\_1

Nonaka I., Toyama R. (2015) The *Knowledge*-creating Theory Revisited: *Knowledge* Creation as a Synthesizing Process. In: Edwards J.S. (eds) The Essentials of *Knowledge* Management. OR Essentials Series. Palgrave Macmillan, London. <https://doi.org/10.1057/9781137552105_4>

Norwich, B., Koutsouris, G., Fujita, T., Ralph, T., Adlam, A. and Milton, F. (2016), "Exploring *knowledge* bridging and translation in lesson study using an inter-professional team", *International Journal for Lesson and Learning Studies*, Vol. 5 No. 3, pp. 180-195. <https://doi.org/10.1108/IJLLS-02-2016-0006>

Nouri, B.A., &Ghorbani, R. (2017). The Effect of Knowledge Management on Organizational Innovation with the Mediating Role of Organizational Learning (Case Study : Agricultural Bank in Iran). Journal of Applied Economics and Business Research JAEBR, 7(3): 194-211. <https://www.semanticscholar.org/paper/The-Effect-of-Knowledge-Management-on-Innovation-of-Nouri-Ghorbani/fb9eb1df37e4a47c9b3ac2bbf0bbc4f4907b80a2>

Nugroho, M. (2018), "The effects of collaborative cultures and *knowledge* sharing on *organizational learning*", *Journal of Organizational Change Management*, Vol. 31 No. 5, pp. 1138-1152. <https://doi.org/10.1108/JOCM-10-2017-0385>

Okuyama, R. (2017), "Importance of *soft skills* in incremental innovation: Implications from drug discovery cases", *Journal of Strategy and Management*, Vol. 10 No. 1, pp. 118-130. <https://doi.org/10.1108/JSMA-02-2016-0016>

Parida, V., Sjödin, D., &Reim, W. (2019). *Reviewing Literature on Digitalization, Business Model Innovation, and Sustainable Industry: Past Achievements and Future Promises. Sustainability, 11(2), 391.*doi:10.3390/su11020391

Pérez-Fuillerat, N., Solano-Ruiz, M. C., &Amezcua, M. (2018). *Conocimientotácito: características en la prácticaenfermera. Gaceta Sanitaria.* doi:10.1016/j.gaceta.2017.11.002

Pérez-Luño, A., Alegre, J., & Valle-Cabrera, R. (2018). *The role of soft skills in connecting knowledge exchange and combination with innovation. Technology Analysis & Strategic Management, 1–13.*doi:10.1080/09537325.2018.1492712

Pérez-Luño, A., Alegre, J., & Valle-Cabrera, R. (2018). *The role of soft skills in connecting knowledge exchange and combination with innovation. Technology Analysis & Strategic Management, 1–13.* doi:10.1080/09537325.2018.1492712

Polanyi, M. (1966). *The Tacit dimension*. New York: Doubleday & Co.

Prameswari, M., Asbari, M., Purwanto, A., Ong, F., Kusumaningsih, S.W.,Mustikasiwi, A., Chidir, G.,Winanti, Sopa, A. (2020). The Impacts of Leadership and Organizational Culture on Performance in Indonesian Public Health: The Mediating Effects of Innovative Work Behavior. International Journal of Control and Automation, 13(02), 216 - 227. Retrieved from <http://sersc.org/journals/index.php/IJCA/article/view/7630>

Prasarnphanich, P., Janz, B. and Patel, J. (2016), "Towards a better understanding of system analysts’ *soft skills*: A mixed method approach", *Information Technology & People*, Vol. 29 No. 1, pp. 69-98. <https://doi.org/10.1108/ITP-06-2014-0123>

Purwanto, A., Wijayanti, L.M., Hyun, C.C., Asbari, M. (2020). The Effects of Transformational, Transactional, authentic, Authoritarian Leadership style Toward Lecture Performance of Private University in Tangerang. Dinasti International Journal of Digital Business Management (DIJDBM), 1(1), 29-42.**DOI:**<https://doi.org/10.31933/dijdbm.v1i1.88>

Qi, C. and Chau, P.Y.K.(2018)Will enterprise social networking systems promote *knowledge* management and *organizational learning*? An empirical study,Journal of Organizational Computing and Electronic Commerce,28:1,31-57,DOI: [10.1080/10919392.2018.1407081](https://doi.org/10.1080/10919392.2018.1407081)

Rainsbury, E., Hodges, D., Burchell, N. & Lay, M. C. (2002). Ranking workplace competencies: Student and graduate perceptions. Asia-Pacific Journal of Cooperative Education, 3(2), 8-18. <https://hdl.handle.net/10289/3219>

Razmerita L., Phillips-Wren G., Jain L.C. (2016) Advances in *Knowledge* Management: An Overview. In: Razmerita L., Phillips-Wren G., Jain L. (eds) Innovations in *Knowledge* Management. Intelligent Systems Reference Library, vol 95. Springer, Berlin, Heidelberg. <https://doi.org/10.1007/978-3-662-47827-1_1>

Rothberg, H. and Erickson, G. (2017), "Big data systems: *knowledge* transfer or intelligence insights?",*Journal of Knowledge Management*, Vol. 21 No. 1, pp. 92-112. <https://doi.org/10.1108/JKM-07-2015-0300>

Ruiz-Torres, A., Cardoza, G., Kuula, M., Oliver, Y. and Rosa-Polanco, H. (2018), "Logistic services in the Caribbean region: An analysis of collaboration, innovation capabilities and process improvement", *Academia RevistaLatinoamericana de Administración*, Vol. 31 No. 3, pp. 534-552. <https://doi.org/10.1108/ARLA-03-2017-0078>

Rumanti, A. A., Samadhi, T. M. A. A., Wiratmadja, I. I., &Sunaryo, I. (2018). A systematic literature review on *knowledge* sharing for innovation: Empirical study approach*. 5th International Conference on Industrial Engineering and Applications (ICIEA).* doi:10.1109/iea.2018.8387153

Rumanti, A. A., Wiratmadja, I. I., Sunaryo, I., Ajidarma, P., & Ari Samadhi, T. M. A. (2019). *Firm Teacher innovation capability through Knowledge Sharing at Indonesian Small and Medium Industries: Impact of Tacit and Hard skills Perspective. 2019 IEEE 6th International Conference on Industrial Engineering and Applications (ICIEA).* doi:10.1109/iea.2019.8714947

Samsir, S. (2018), The effect of leadership orientation on innovation and its relationship with competitive advantages of small and medium enterprises in Indonesia, *International Journal of Law and Management*, Vol. 60 No. 2, pp. 530-542. <https://doi.org/10.1108/IJLMA-01-2017-0005>

Santoro, G., Vrontis, D., Thrassou, A., &Dezi, L. (2017). *The Internet of Things: Building a knowledge management system for open innovation and knowledge management capacity. Technological Forecasting and Social Change.* doi:10.1016/j.techfore.2017.02.034

Sasaki, Y. (2017), "A note on systems intelligence in *knowledge* management", *The Learning Organization*, Vol. 24 No. 4, pp. 236-244. <https://doi.org/10.1108/TLO-09-2016-0062>

Schuckert, M., Kim, T., Paek, S. and Lee, G. (2018), "Motivate to innovate: How authentic and transformational leaders influence employees’ psychological capital and service innovation behavior", *International Journal of Contemporary Hospitality Management*, Vol. 30 No. 2, pp. 776-796. <https://doi.org/10.1108/IJCHM-05-2016-0282>

Serna M., E., Bachiller S., O., & Serna A., A. (2017). *Knowledge meaning and management in requirements engineering. International Journal of Information Management, 37(3), 155–161.* doi:10.1016/j.ijinfomgt.2017.01.005

Sopa, A., Asbari, M., Purwanto, A., Santoso, P.B., Mustofa, Hutagalung, D., Maesaroh, S., Ramdan, M.,Primahendra, R. (2020). Hard Skills versus Soft Skills: Which are More Important for Indonesian Employees Innovation Capability. *International Journal of Control and Automation*, *13*(02), 156 - 175. Retrieved from <http://sersc.org/journals/index.php/IJCA/article/view/7626>

Sousa, M. J., & Rocha, Á. (2019). *Strategic Knowledge Management in the Digital Age. Journal of Business Research, 94, 223–226.* doi:10.1016/j.jbusres.2018.10.016

Spraggon, M. and Bodolica, V. (2017), "Collective *soft skills* generation through play: Integrating socially distributed cognition and transactive memory systems", *Management Decision*, Vol. 55 No. 1, pp. 119-135. <https://doi.org/10.1108/MD-05-2015-0173>

Stachová, K., Papula, J., Stacho, Z., &Kohnová, L. (2019). *External Partnerships in Employee Education and Development as the Key to Facing Industry 4.0 Challenges. Sustainability, 11(2), 345.*doi:10.3390/su11020345

Stanica, S. and Peydro, J. (2016), "How does the employee cross-training lean tool affect the *knowledge* transfer in product development processes?",*VINE Journal of Information and Knowledge Management Systems*, Vol. 46 No. 3, pp. 371-385. <https://doi.org/10.1108/VJIKMS-11-2015-0061>

Starbuck, W. (2017), "*Organizational learning* and unlearning", *The Learning Organization*, Vol. 24 No. 1, pp. 30-38. <https://doi.org/10.1108/TLO-11-2016-0073>

Stewart, C., Schiavon, L.M. and Bellotto, M.L. (2017) *Knowledge*, nutrition and coaching pedagogy: a perspective from female Brazilian Olympic gymnasts, Sport, Education and Society, 22(4): 511-527, DOI: [10.1080/13573322.2015.1046428](https://doi.org/10.1080/13573322.2015.1046428)

Swierczek, A. (2019), "Manufacturer structural embeddedness and the network rent: the intervening role of relational embeddedness in the triadic supply chains", *Supply Chain Management*, Vol. 24 No. 3, pp. 334-354. <https://doi.org/10.1108/SCM-06-2018-0232>

Tang, V., Yanine, F. and Valenzuela, L. (2016), "Data, information, *knowledge* and intelligence: The mega-nano hypothesis and its implications in innovation", *International Journal of Innovation Science*, Vol. 8 No. 3, pp. 199-216. <https://doi.org/10.1108/IJIS-07-2016-0022>

Terhorst, A., Lusher, D., Bolton, D., Elsum, I., & Wang, P. (2018). *Soft skills Sharing in Open Innovation Projects. Project Management Journal, 49(4), 5–19.*doi:10.1177/8756972818781628

Torres, O. J. J., & Liang, D. (2016). *Knowledge Sharing and the Teacher innovation capability of Chinese Firms: The Role of Guanxi. 2016 International Conference on Industrial Engineering, Management Science and Application (ICIMSA).* doi:10.1109/icimsa.2016.7504015

Tsai, F. and Hsu, I. (2019), "The effects of social capital on *knowledge* heterogeneity", *Management Decision*, Vol. 57 No. 5, pp. 1237-1253. <https://doi.org/10.1108/MD-12-2016-0909>

[Tsotsotso, K.](https://www.emerald.com/insight/search?q=Khotso%20Tsotsotso), [Montshiwa, E.](https://www.emerald.com/insight/search?q=Elizabeth%20Montshiwa), [Tirivanhu, P.](https://www.emerald.com/insight/search?q=Precious%20Tirivanhu), [Fish, T.](https://www.emerald.com/insight/search?q=Tebogo%20Fish), [Sibiya, S.](https://www.emerald.com/insight/search?q=Siyabonga%20Sibiya), [Mlangeni, T.](https://www.emerald.com/insight/search?q=Tshepo%20Mlangeni), [Moloi, M.](https://www.emerald.com/insight/search?q=Matsemela%20Moloi) and [Mahlangu, N.](https://www.emerald.com/insight/search?q=Nhlanlha%20Mahlangu) (2017), "Determinants of skills demand in a state- intervening labour market: The case of South African transport sector", [*Higher Education, Skills and Work-Based Learning*](https://www.emerald.com/insight/publication/issn/2042-3896), Vol. 7 No. 4, pp. 408-422. <https://doi.org/10.1108/HESWBL-08-2017-0050>

Urban, B. and Gaffurini, E. (2018), "Social enterprises and *organizational learning* in South Africa", *Journal of Entrepreneurship in Emerging Economies*, Vol. 10 No. 1, pp. 117-133. <https://doi.org/10.1108/JEEE-02-2017-0010>

Vijande M.L.S., Sánchez J.Á.L. (2017) The Effects of *Organizational learning* on Innovation and *Performance* in Kibs: An Empirical Examination. In: Campbell C.L. (eds) The Customer is NOT Always Right? Marketing Orientationsin a Dynamic Business World. Developments in Marketing Science: Proceedings of the Academy of Marketing Science. Springer, Cham. <https://doi.org/10.1007/978-3-319-50008-9_227>

Villaluz, V. and Hechanova, M. (2019), "Ownership and leadership in building an innovation culture", *Leadership & Organization Development Journal*, Vol. 40 No. 2, pp. 138-150. <https://doi.org/10.1108/LODJ-05-2018-0184>

[Viviers, H.](https://www.emerald.com/insight/search?q=Herman%20Albertus%20Viviers), [Fouché, J.](https://www.emerald.com/insight/search?q=Jacobus%20Paulus%20Fouché) and [Reitsma, G.](https://www.emerald.com/insight/search?q=Gerda%20Marié%20Reitsma) (2016), "Developing soft skills (also known as pervasive skills): Usefulness of an educational game", [*Meditari Accountancy Research*](https://www.emerald.com/insight/publication/issn/2049-372X), Vol. 24 No. 3, pp. 368-389. <https://doi.org/10.1108/MEDAR-07-2015-0045>

Wang, C., Chen, M. and Chang, C. (2019), "The double-edged effect of *knowledge* search on innovation generations", *European Journal of Innovation Management*, Vol. ahead-of-print No. ahead-of-print. <https://doi.org/10.1108/EJIM-04-2018-0072>

Wang, J., & Liu, L. (2019). *Study on the mechanism of customers’ participation in knowledge sharing. Expert Systems, e12367.* doi:10.1111/exsy.12367

Wang, X., Arnett, D. and Hou, L. (2016), "Using external *knowledge* to improve organizational innovativeness: understanding the *knowledge* leveraging process", *Journal of Business & Industrial Marketing*, Vol. 31 No. 2, pp. 164-173. <https://doi.org/10.1108/JBIM-04-2014-0064>

Wang, Z., & Wang, N. (2012). *Knowledge sharing, innovation and firm performance. Expert Systems with Applications, 39(10), 8899–8908.* doi:10.1016/j.eswa.2012.02.017

Wetzel R., Tint B. (2019) *Using Applied Improvisation for Organizational learning in the Red Cross Red Crescent Climate Centre*. In: Antonacopoulou E., Taylor S. (eds) Sensuous Learning for Practical Judgment in Professional Practice. Palgrave Studies in Business, Arts and Humanities. Palgrave Macmillan, Cham. <https://doi.org/10.1007/978-3-319-99049-1_3>

Widmann, A. and Mulder, R. (2018), "Team learning behaviours and innovative work behaviour in work teams", *European Journal of Innovation Management*, Vol. 21 No. 3, pp. 501-520. <https://doi.org/10.1108/EJIM-12-2017-0194>

Widoyoko, E.P. (2009). *Evaluasi Program PembelajaranPanduanPraktisbagiPendidikdanCalonPendidik*(Yogyakarta: Pustaka

Wójcik, M., Jeziorska-Biel, P., &Czapiewski, K. (2019). Between words: A generational discussion about farming *knowledge* sources. *Journal of Rural Studies, 67, 130–141.* doi:10.1016/j.jrurstud.2019.02.024

Xu, M., David, J. M., & Kim, S. H. (2018). The Fourth Industrial Revolution: Opportunities and Challenges*. International Journal of Financial Research, 9(2), 90.* doi:10.5430/ijfr.v9n2p90

Yang, Z., Nguyen, V. and Le, P. (2018), *Knowledge* sharing serves as a mediator between collaborative culture and *teacher innovation capability*: an empirical research, *Journal of Business & Industrial Marketing*, Vol. 33 No. 7, pp. 958-969. <https://doi.org/10.1108/JBIM-10-2017-0245>

Zambon, I., Cecchini, M., Egidi, G., Saporito, M. G., &Colantoni, A. (2019). Revolution 4.0: Industry vs. Agriculture in a Future Development for SMEs. *Processes, 7(1), 36.*doi:10.3390/pr7010036

Zebal, M., Ferdous, A., & Chambers, C. (2019). An integrated model of marketing *knowledge* – a *soft skills* perspective. *Journal of Research in Marketing and Entrepreneurship.*doi:10.1108/jrme-03-2018-0018

Zhang, C., Xiao, H., Gursoy, D. and Rao, Y.(2015).*Soft skills* spillover and sustainability in destination development.*Journal of Sustainable Tourism*.23(7):1029-1048,DOI: [10.1080/09669582.2015.1032299](https://doi.org/10.1080/09669582.2015.1032299)

Zhu, Q., Krikke, H. and Caniëls, M. (2018), Supply chain integration: value creation through managing inter-organizational learning*.International Journal of Operations & Production Management*. 38(1): 211-229. <https://doi.org/10.1108/IJOPM-06-2015-0372>

Zouaghi, F., Sánchez, M., &Martínez, M. G. (2018). Did the global financial crisis impact firms’ innovation *performance*? The role of internal and external *knowledge* capabilities in high and low tech industries. *Technological Forecasting and Social Change. 132: 92–104.* doi:10.1016/j.techfore.2018.01.011

Campbell, J. (1990), “Modeling the performance prediction problem in industrial andorganizational psychology”, in Dunnette, M. and Hough, L. (Eds.), *Handbook ofOrganizational and Industrial Psychology*, Consulting Psychologists Press, Palo Alto, CA, pp. 687-732.

Campbell, J.P., McCloy, R.A., Oppler, S.H. and Sager, C.E. (1993), “A theory of performance”, in Schmitt, N. and Borman, W. (Eds.), *Personnel Selection in Organizations*, Jossey-Bass, San Francisco, CA, pp. 35-70.