

Factors Affecting- in Sidoarjo Regency

by Agus Wiyono

Submission date: 08-Nov-2022 05:55AM (UTC+0700)

Submission ID: 1947598886

File name: 1052-1059-Factors_Affecting_in_Sidoarjo_Regency.pdf (599.39K)

Word count: 3519

Character count: 20675

Factors Affecting the Development of Vocational High Schools to Supporting Regional Potentials in Sidoarjo Regency

Agus Wiyono, Yogie Risdianto, Heri Suryaman

³ Department of Civil Engineering, Faculty of Engineering, Surabaya State University

³ Department of Mechanical Engineering, Faculty of Engineering, Surabaya State University

Department of information, Faculty of Engineering, Surabaya State University

ABSTRACT

The demands of skilled human resources increase in the era of Asia Economic Community. Therefore, government shall significantly have increased the number of skilled workers until 2019 in order to meet the needs in various sectors, especially education that provides life skill competence according to regional potential.

This study aimed to determine factors affecting vocational education development to support regional potential were found by using Delphi method. those factors found were distance (between resident and school), population, number of junior high school students, road network, public transportation, land price, disaster prone, natural resource production, society participation, government commitment (policy-making), human resources of school managers.

Keywords: Vocational Education development, vocational senior high school, regional potential

1 Introduction

According to data obtained from the Education Department in 2017, there were 2 units of public vocational schools, and 46 units of private vocational schools. Based on equal access to education, it showed unevenly in each region or sub-district. Hence, government s necessary to build vocational senior high schools especially in areas without any access to vocational education.

From preliminary survey at two Vocational senior high school, it was obtained that 2 units of public vocational senior high school were located in Kalianget District, and Batuan subdistrict. This location was selected because total population aged 16-18 years was 46,635 people or 31.38% of 148,632 people in Sidoarjo remain in those two areas, whereas the remaining 68.62% or equivalent to 101,991 people were spreaded in other 25 districts. These numbers shows that comparing between total area and population, the vocational senior high school is inadequate.

1.1 Research Question

It is necessary to develop vocational education solutions by inventorying factors affecting the development of vocational education in order to support the potential of the region. Thus the formulation of the problem as follows: What factors affect the development of vocational education to support the potential areas in Sidoarjo ?

1.2 Scope and Limitations of the Study

The scope of the research area in Sidoarjo Madura Regency, while the substance of this study only discusses the findings of factors that influence the development of vocational education in supporting the territory in Sidoarjo Regency. Vocational education here is vocational education at the middle level or Vocational High School.

2 Review Of Related Literature

1.1 Policy in Education Development

Education is a very important, because in the era of knowledge-based economy, quality of education is possibly to elevate the nation in many ways, for examples in economy, health, prosperity, competitiveness and technology.

In the social context, the purpose and content of vocational education is linked to the growing needs of the Business World and the Industrial World. Vocational education plays an active role by determining the level and direction of community change in the field of vocational. Education with dual functions is as a means of cultural preservation and as a medium for the occurrence of social change.

Education is inseparable from human life that always grows and changes. Education is a basic and absolute necessity and is always needed. Education policy deals with decisions relating to the improvement and improvement of the organization of education

The long-term education development refers to Law Number 17 Year 2007 on the National Long-Term Development Plan for 2005-2025. The alignment of the education development focus in each stage was formulated in the Long-Term National Development Plan 2005-2025. In medium-term planning, it was possibly adjusted or improved according to the current condition through the National Medium-Term Development Plan.

2.2 Education for Sustainable Development

Human Resource Development shows a paradigm shift in education by emphasizing and promoting processes such as critical thinking, problem-solving, developing holistic vision, thinking systems and logical-oriented futures-related relevance extends also to inter-sectoral and interdisciplinary approaches that are translated into identifying interconnection in teaching, learning and research. It showed interdisciplinary links assisting general skill development in 'connecting-thinking' which was transferred to practical situations (UNESCO, 2008).

In the last decade, many researchers and practitioners had called for evaluation of HRD programs (Jacobson et al., 2006; Carleton-Hug and Hug, 2010; Zint, 2011). Monitoring and evaluation are identified as key strategies for implementing ESD (UNESCO, 2005) and national policy initiatives and HRD related strategies were underway (Erdogan and Tuncer, 2009). The effectiveness and value of this initiative, together with the measurement and evaluation of their progress, remains open questions for policymakers, academic researchers and practitioners (Reid et al., 2006, page 22).

2.3 Education in Local and Cultural Relativism Context

The general methodology of program evaluation included the National Foundation for Research (NFER) by implementing "citizenship" Curriculum in the UK (Kerr, 2006), or BLK "21" Program in Germany (de Haan, 2006) as well as the generic EFS checklist (Schroter, 2010). However, it was unclear whether national evaluation studies or examples of best practice were universally applicable in other countries, as many anthropologists have pointed out (Owens, 2012). A broad work on class ethnography involving ethnographers to enter the "lesson" world through participant observation has not been fully employed in formal educational settings to address ESD.

How ESD practiced greatly differs in their socio-political priorities, as do democracies surrounding their educational institutions, as well as a number of other historical, socio-cultural, political, ecological and economic factors. Some types of ESD focusing on social and health justice are more appropriate in some circumstances, for example, issues related to reproductive health in developing countries; while more environmental-effects of the problem are more appropriate to others, such as the problems concerned with the consequences of high levels of consumption in the more affluent West society. The diversity of institutional arrangements was interpreted in the context of broader socio-cultural influences in which both formal and informal learning takes place (eg see recent work by anthropologists in the EE field (Zarger, 2010; Efir, 2011; Kopnina 2013; Anderson, 2012).

2.4 Competence Education

The term "competence" in the context of educational issues, is technological progress and globalization coupled with new challenges that must be mastered: enhancing individualization and developing social diversity, accompanied in parallel by expanding economic and cultural uniformity, availability of rapidly growing information, to cope with increasing complexity and uncertainty.

This term is used to describe "in the future the ability to modify and shape the futures of our societies through active participation in sustainable development". "*Gestaltungs kompetenz*" includes the following eight key competencies:

- (1) competence in foresighted;
- (2) competence in interdisciplinary work;
- (3) competence in cosmopolitan perception, cross-cultural understanding and cooperation;
- (4) participatory skills;
- (5) competence in planning and implementation;
- (6) capacity for empathy, compassion and solidarity;
- (7) competence in self-motivation and motivating others; and
- (8) competence in reflection distances on individual models and cultures.

Sustainable development requires social modernization and can only be realized through the active participation of competent citizens; Therefore the concept of "*Gestaltungs kompetenz*" is characterized in particular

with the major competencies necessary for future and autonomous participation in shaping and developing continuing education. Competent education here adapted to the needs in the development of potential areas of course.

2.5 Human Resource Education Development through Vocational Education

One of the policies of the Ministry of Education and Culture in developing human resources at Vocational Senior High School introduced in 1993/1994 was the education of Link and Match, meaning that Vocational Senior High School education must be link and match to the needs of students and community to create a suitability between education programs and the needs of community. The link and match policy for vocational secondary education was carried out using Dual System Education program. For vocational education institutions, DSE is necessary as it influences the graduates to face working world. DSE program is a policy to prepare vocational students to be ready and understand the demands of working world.

In contrast to Singapore and Hong Kong State policy efforts, the establishment of an educational center was a natural platform in recruiting foreign workers especially students and researchers. Singapore pursued it more aggressively than Hong Kong because of the implications of declining birth rates and the nearest economic competition (Government of Singapore 2013). Meanwhile, Hong Kong had China to buffer shortages in urban manpower planning. (Lee, 2014).

2.6 Public Interest in Vocational Education

Based on Constitution of the Republic of Indonesia Year 1945, one of the national goals is to educate the life of the nation and to equally obtain the best education according to one's interests and talents without differentiating in social status, race, ethnicity, religion, and gender. Thus, the development of education should concern to learners interest. Interests can be interpreted as the power emerging within the individual to act. Interests greatly affect individual in accepting a certain object and those are influenced by 2 factors, namely:

- a. Internal factors, such as:
 - Individual talents
 - Academic achievement
- b. External factors, such as: family social-economic condition, including:
 - Education background of parents
 - Family income and parents' professions
 - Number of family

Although attention is directed to the recruitment of international students, developing local talent remains a fundamental goal of educational relationships. Talent development including workforce planning and inclusive provisions that support different interests of local students. On the other hand, the educational relationship does not share the purpose of attracting foreigners and repatriating diaspora talents. Contextual factors such as different political economies and ethnic sensibilities mediate the recruitment of external talents. (Lee, 2014.)

By allowing foreign providers to build campus, host countries are eager to massify higher education, increase research capacity, and enhance the overall excellence of the education system. Importantly, the educational relationship is also interested in developing human talent to compete in the global knowledge economy (Cheng 2010; Knight and Lee 2014). Previous studies on educational relationships provide limited analysis of talent development or focuses only on foreign talent (Chan and Ng 2008; Knight and Morshidi 2011).

3 Research METHODOLOGY

Explorative study is to examine the relationship amongst the regional potential in order to define the concept of vocational education development in Sidoarjo. Case study was carried out in conducting this study strated from problems arisen from vocational education development in potential areas in Sidoarjo.

3.1 Sampling and Population

Sampling used in this study was purposive sampling due to (1) background of the respondents (experts) in local education and economy as well as (2) limitation of time, cost, and power.

Table 3.2.Score Criteria in Stakeholders Analysis

Score	Level of Influence	Level of Interest
0	Unknown	Unknown
1	Low/no influence	Low/unimportant
2	Low influence	Less important
3	Influenced	Important
4	Very influenced	Very important
5	Highly influenced	Highly important

Source: Rietbergen *et.al*, 1998

Purposif sampling was conducted by determining certain targets or predefined respondents. These are the sampling according to defined technique, including:

- (1) Education Department of Sidoarjo
- (2) BAPPEDA Sidoarjo (Social-Cultural division)
- (3) Scholars
People who graduated from university or had high intelligence
- (4) Junior High School Students aged 13 – 15
- (5) Regional Industry, Trading, and Investment Department
- (6) Community organizations (educational board)
- (7) Trading and Industrial Office Sidoarjo
- (8) Regional House of Representative of Sidoarjo (D division of education)
- (9) Education and Culture Department of East Java Province (Vocational Education Division)

3.2. Data Analysis

Gradually, the accumulated data was interpreted into the general picture for subsequent analysis according to data allotment in the analysis. This study applied blending qualitative and quantitative technique. Quantitative technique used hierarchical process analysis, while qualitative used Delphi. The analysis steps include:

3.2.1. Stakeholders Analysis

Based on paradigm used, ampling was limited to the respondent with specific data and isolated from the environment mentioned using Stakeholders Analysis. Experts in this study were stakeholders or related parties in Vocational Education Development. Each stakeholder has an unequal level of influence and degree of importance. Therefore, to determine the very influential and very important stakeholders. The analysis of the level of influence of stakeholders are:

- (1) Education Department of Sidoarjo
- (2) BAPPEDA Sidoarjo (Cultural division)
- (3) Scholars
- (4) Educational Board
- (5) Regional House of Representatives (Education division)
- (6) Education and Culture Department East Java Province.

3.2.2. Analysis in determining factors affecting Vocational Education Development to support Regional Potential

Two types of data were used in this study, primary data obtained by interview, questionnaires, as well as surveys, while secondary data derived from existing documentation.

Questionnaire in this article functioned in giving input in determining factors using the Delphi method. Literary study or documentation was to provide complimentary information and data based on existing documents, such as Sidoarjo in 2021 and Sidoarjo Potential or data taken from Education Departement and BPS.

This method was to determine alternative programs by exploring assumptions or facts to reach a consensus. The participants are experts in vocational education. Thus, Delphi method employ experts' opinions, experiences and intuitions. These are steps in performing Dhelphi method:

- (1) Exploration Phase of Factors affecting Vocational Education Development as an effort to support Regional Potential

Exploration process was conducted by involving the predefined respondents that was by interview and questionnaires describing criteria that affect vocational education development as the results of literature review. Information obtained in preliminary stage of exploratory process was analyzed until it resulted on factors affecting vocational education development in Sidoarjo , Madura as follows:

- a) Population
 - b) Land condition
 - c) Accessibility
 - d) Radius of service (distance)
 - e) Land use
 - f) Vocational senior high school distribution
 - g) Regional potential (natural resources)
 - h) Government commitment (policy)
 - i) Society participation
 - j) Human resources management of education managers
- (2) Iteration Analysis of Factors Affecting Vocational Education Development as an effort to support Regional Potential

There are two stages of iteration in Delphi analysis. The first stage is used to obtain the respondent's opinions on the criteria. The second stage is to get similarity of respondent's opinions. The results of the iteration produce criteria affecting vocational education development in Sidoarjo which was agreed by all respondents. There were several influential factors appeared from the results such as (1) government policy, (2) society participation, and (3) human resources management.

4 Weighting ANALYSIS (analysis hierarchy process)

In this study the purpose of the use of AHP analysis techniques is more to know the expert opinion about the conditions that affect the determination of the location of SMK development in supporting the potential area, which can be known amount in the form of weight per sub variable. Although the main objective is the priority of determining the location of SMK development but basically AHP measure quantity perception in quantity.

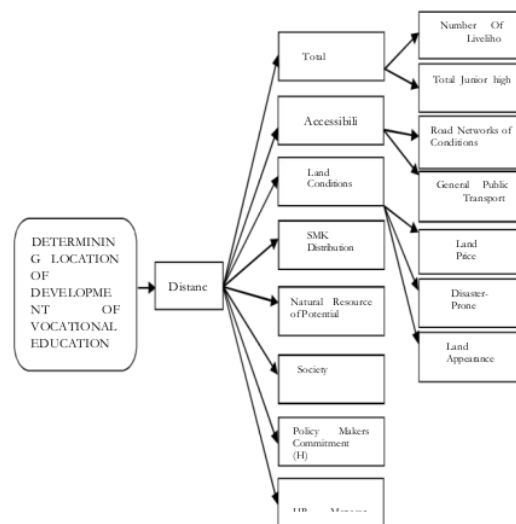


Figure 1. Flow chart AHP factors influence in determining the location of vocational education development. The first thing to do is to make each of these factors into matrices with alphabetical symbols for easy processing by AHP using excel. The factor matrix is as follows:

Matrix A = Range

Matrix B = Population
Matrix C = Accessibility
Matrix D = Condition of land
Matrix E = SMK distribution
Matrix F = Potential of natural resources
Matrix G = Participation
Matrix H = Commitment of policy-making
Matrix I = Management SMK

16

Calculation used is the average cumulative ratio of valuation ($R / 6$) as shown in table 3.1. Diagonal matrix $AA = BB = CC = DD = EE = FF = GG = HH = II = 1$ for doing comparison with factors in itself. Matrix calculation $BA = 1 /$ matrix AB so on.

Table 1. Initial matrix of analysis results

	A	B	C	D	E	F	G	H	I
A	1,000000	0,141138	0,154365	2,161310	0,181151	0,158333	0,490476	0,120370	0,780952
B	7,085286	1,000000	2,114286	6,166667	4,069444	1,304167	1,377778	0,126984	0,798810
C	6,478149	0,472973	1,000000	5,833333	2,1170635	2,255952	1,900000	0,126984	1,155556
D	0,462682	0,162162	0,171429	1,000000	1,290675	0,133929	2,057143	0,121693	1,455556
E	5,520263	0,245734	0,472352	0,774789	1,000000	3,220833	2,200000	0,126984	3,500000
F	6,315789	0,766773	0,443272	7,466667	0,310479	1,000000	5,500000	0,182143	5,300000
G	2,038835	0,725806	0,526316	0,486111	0,454545	0,181818	1,000000	0,146032	1,755556
H	8,307692	7,875000	7,875000	8,217391	7,875000	5,490196	6,847826	1,000000	8,333333
I	1,280488	1,251863	0,865385	0,687023	0,285714	0,181818	0,569620	0,120000	1,300000
I	38,489185	12,641449	13,622404	32,793290	17,584072	13,927047	21,942843	2,071190	24,279762

Source: Result of analysis, 2022

The data obtained will be normalized by dividing each column data by the column average as shown in table 2 below:

Table 2. Normalize experiment data

	A	B	C	D	E	F	G	H	I
A	0,025981	0,012012	0,011814	0,064917	0,010771	0,010375	0,022018	0,058117	0,030690
B	0,184085	0,085111	0,161808	0,185223	0,192420	0,129147	0,061850	0,061310	0,070690
C	0,168311	0,040255	0,078591	0,190229	0,125881	0,191517	0,100257	0,061310	0,078160
D	0,012021	0,013802	0,012084	0,030036	0,076744	0,008776	0,092347	0,058755	0,057201
E	0,143424	0,026300	0,036150	0,023272	0,059460	0,211059	0,098760	0,061310	0,111345
F	0,164093	0,043185	0,026186	0,224269	0,018461	0,065529	0,246901	0,087941	0,216140
G	0,052972	0,061774	0,034268	0,014601	0,027027	0,011914	0,044891	0,070506	0,068990
H	0,215845	0,670246	0,602681	0,246818	0,468249	0,359768	0,307406	0,482814	0,327485
I	0,033269	0,047315	0,038479	0,020635	0,020986	0,011914	0,025571	0,057938	0,039298

Source: Result of analysis, 2022

Judging from the magnitude of eigenvalue it can be said that as a calculation of factor priority obtained in the experiment. The result of eigenvalue calculation can be seen in table 3. as follows:

Table 3. Normalize experiment

	Number of Line Matrices	Wi
A	0,246696	0,027411
B	1,131643	0,125738
C	1,032449	0,114717
D	0,361766	0,040196
E	0,771079	0,085675
F	1,092705	0,121412
G	0,386943	0,042994
H	3,681313	0,409035
I	0,295406	0,032823
	$\sum Wi$	1

Scoring analysis is the analysis used to determine the weight of each factor. The valuation method used is multiplying the weight value of each factor and sub factor of AHP result with the existing condition. This multiplication is intended to obtain the most objective weight value of expert opinion and conditions in the field, so the determination of SMK development location in both regions should not be minimized.

Data classification makes rankings based on classification. The weighted value of each factor and sub-factor of the AHP result can be made from the total weight value held by each classification, as shown in Table 4 below:

Table 4. Classification Weighting Spatial Factor

No.	Influential factors	Classification	Ranking score	Weight	Total Weight
1	Distance of school with settlements	Dist > 5km	1	0.274	0.274
		Dist > 4 – 5km	2		0.548
		Dist 2 – 4km	3		0.822
		Dist 0 – < 2km	4		1.096
2	Total population	< 10000 souls	1	1.322	1.322
		10001 – 20000 souls	2		2.644
		20001 – 30000 souls	3		3.966
		> 30000 souls	4		5.288
3	Number of junior high school students	500 – 1000 students	1	8.678	8.678
		1001– 1500 students	2		17.356
		1501– 2000 students	3		26.034
		> 2000 students	4		34.712
4	Land condition	Heavily damaged	1	7.069	7.069
		Mildly damaged	2		14.138
		Evotqk	3		21.207
		Good	4		28.276
5	Availability of public transportation	Not to be skipped	1	2.931	2.931
		Partially skipped	2		5.862
		Mostly skipped	3		8.793
		Skipped until location	4		11.724
6	The land price	> 900.000	1	6.684	6.684
		> 600.000 – 900.000	2		13.368
		> 300.000 – 600.000	3		20.052
		100.000 – 300.000	4		26.736
7	Disaster-prone	Very vulnerable	1	1.922	1.922
		Medium	2		3.844
		Quite safe	3		5.766
		Safe	4		7.688
8	Land use	Settlement	1	1.394	1.394
		Weir	2		2.788
		Rice fields	3		4.182
		Plantation	4		5.576
9	vocational high school distribution	there are >3 SMK	1	0.857	0.857
		there are 2-3 SMK	2		1.714
		there is 1 SMK	3		2.571
		there is no SMK	4		3.428

Source: Result of analysis, 2022

5 Conclusion

Based on the Delphi analysis on iteration, the factors affecting of vocational education development to support regional potential in Sidoarjo , Madura were: population, radius of service (distance), accessibility, land use, vocational school distribution, natural resource potential, land conditions, society participation, policy-making (government), human resources.

References

- [1] Nin~o-Zarazu¹ a, M., (2015). Aid, education policy, and development. *Int. J. Educ. Dev.* (2016), <http://dx.doi.org/10.1016/j.ijedudev.2015.12.002>
- [2] Alexander Karpov, (2015). The Ancient Episteme of Activity as Ontology: Horizon of Modern Education Development. *Procedia – Social and Behavior Sciences* 214 (2015) 448-456. Peer-review under responsibility of: Bulgarian Comparative Education Society (BCES), Sofia, Bulgaria & Research International Pusat (IRC). Scientific cooperation, Rostov-on-Don, Rusia.
- [3] Magnus Fjellström. Vocational learning in a Swedish post- secondary apprenticeship. *Empirical Res Voc Ed Train* (2017) 9:5 DOI 10.1186/s40461-017-0051-6
- [4] Scholten, Tieben, (217). Vocational qualification as safety-net? Education-to-work transitions of higher education dropouts in Germany. *Empirical Res Voc Ed Train* (2017) 9:7 DOI 10.1186/s40461-017-0050-7
- [5] Beicht and Walden, (2016). Transitions into vocational education and training by lower and intermediate secondary school leavers. Can male adolescents compensate for their school- based educational disadvantage in comparison with female adolescents? *Empirical Res Voc Ed Train* (2016) 8:11 DOI 10.1186/s40461-016-0037-9
- [6] Andrea Ferraz Young, Adaptation actions for integrated climate risk management into urban planning: a new framework from urban typologies to build resilience capacity in Santos (SP), (216) *City, Territory and Architecture* An interdisciplinary debate on project perspectives. 2016 3:12
- [7] Grill *et al.* (217), Supervisors and teachers' influence on expectations on empowering leadership among students in vocational education and training. *Empirical Res Voc Ed Train* (2017) 9:2 DOI 10.1186/s40461-017-0046
- [8] Lawale, Bory-Adams. The Decade of Education for Sustainable Development: Towards four pillars of learning Development, (2010), 53(4), (547–550) 2010 Society for International Development 1011-6370/10. www.sidint.org/development/
- [9] Setyowati, Wiyono, (2018). Weighting Factors Affecting Vocational Education Development to Support Regional Potential, *International Journal of Education and Research* 6 (3), 2018.
- [10] Wiyono, A; et al. (2018), *Spatial Modeling Vocational Education Development To Support Regional Potential*. *Ecology, Environment and Conservation*. Vol 24, Issue 4, 2018.
- [11] Xixi Chen, *et al.* (2014). Landscape Analysis of Geographical Names in Hubei Province, China. *entropy* ISSN 1099-4300 *Entropy* (2014), 16, 6313-6337; doi:10.3390/entropy16126313. www.mdpi.com/journal/entropy.
- [12] Wiyono, A.; Suryaman, H.; and Nadiar, F. (2021) Factors Affecting the Determination of Vocational High School Locations in Supporting Fisheries Potential. *Review of International Geographical Education (RIGEO)*, 11(2), 682-687. doi: 10.33403/rigeo.800465

Ethics

This article is authentic and has unpublished materials. All writers were reviewed and agreed the without any ethics and problems embroiled

Factors Affecting- in Sidoarjo Regency

ORIGINALITY REPORT

8%

SIMILARITY INDEX

4%

INTERNET SOURCES

5%

PUBLICATIONS

4%

STUDENT PAPERS

PRIMARY SOURCES

- | | | |
|---|---|------|
| 1 | Lukyanova, Natalya, Yury Daneykin, and Natalia Daneikina. "Communicative Competence Management Approaches in Higher Education", Procedia - Social and Behavioral Sciences, 2015.
Publication | 1 % |
| 2 | es.scribd.com
Internet Source | 1 % |
| 3 | Submitted to Universitas Negeri Surabaya The State University of Surabaya
Student Paper | <1 % |
| 4 | sinta3.ristekdikti.go.id
Internet Source | <1 % |
| 5 | Submitted to Higher Ed Holdings
Student Paper | <1 % |
| 6 | Submitted to RMIT University
Student Paper | <1 % |
| 7 | Garimidi Siva Sree, P. Ramlal. "Impact of Industry-Academia Collaboration on Student Satisfaction in Vocational Education and | <1 % |

Training", International Journal of Adult Education and Technology, 2021

Publication

8	Submitted to Liverpool Hope Student Paper	<1 %
9	Submitted to University of St. Gallen Student Paper	<1 %
10	hdl.handle.net Internet Source	<1 %
11	ijhssnet.com Internet Source	<1 %
12	Submitted to 54339 Student Paper	<1 %
13	www.internationalpolicybrief.org Internet Source	<1 %
14	Per-Erik Ellström. "Integrating learning and work: Problems and prospects", Human Resource Development Quarterly, 2001 Publication	<1 %
15	www.scribd.com Internet Source	<1 %
16	patents.google.com Internet Source	<1 %
17	www.un.org Internet Source	<1 %

18

pdfs.semanticscholar.org

Internet Source

<1 %

19

Shailender Singh, Hawati Janor. "An Empirical Study on Pricing Methods Adopted by SMEs with Different Ownership Structure", Global Business Review, 2013

Publication

<1 %

20

washagendaforchange.org

Internet Source

<1 %

Exclude quotes Off

Exclude matches < 1 words

Exclude bibliography Off