

ROLE OF PRODUCTION SYSTEM AND PRODUCTION POTENTIAL TO CONSUMER GOODS FOR COMMUNITY ENTERPRISE GROUPS PHON PHISAI DISTRICT NONG KHAI PROVINCE

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ABSTRACT

The aim to carry out this study was to know the impact of green production on the marketing performance and to know about the impact of lean production on marketing performance. The study took absorptive capacity as a mediator as well. The researcher has used the method of quantitative study, self-administered questionnaire survey method was used. Also, the researcher has used the deductive approach of study along with positivism approach. The researcher collected data in a self-administered way, the sampling frame was the manufacturing sector of Khai Phon Phisai District Nong Province. In total 471 valid responses were received, the researcher used SPSS and AMOS for the purpose of analysis of data and SEM and CFA were also applied. It has been concluded that, the impact of lean production and the impact of green production is significant on the marketing performance while the absorptive capacity plays a significant role in between these two relationships. The research has made valuable contributions for future strategies to enhance marketing performance while it has its limitations in the form of the method of study and the restriction of sampling frame.

Keywords: Production System, Production Potential, Consumer Goods, Community Enterprise Groups

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1. Introduction

As the demand for sustainability and green environment is increasing in the market, so are the efforts of the firms to control the level of toxicity that they are producing to convert the environment into a better place (Chiaroni, Chiesa, & Frattini,

2011). The organizations are opting the green environment options because it is also a very great opportunity to gain competitive advantage. Table 1 shows percentage of green production increasing in Thailand through years:

Table 1: Green production increasing in Thailand through years

Years	2015	2016	2017	2018	2019
Trend in percentage	23%	31%	35%	40.5%	44%

Most of the organizations have also moved towards lean production just because of the reason that it minimizes the waste of production and it maximizes the efficiency of the organization. While the lean production cuts off the waste and hassle of extra materials produced, it also helps the companies in cutting down their costs (Haigh & Hoffman, 2011). But in the recent studies, most of the researchers have not discussed lean production wherever green production or sustainable

production is mentioned (Riedl et al., 2011). Also, there has not been any kind of development where it comes to the further addition of researches that assert a pressure on the implementation of green production along with the implementation of lean production (Romero & Molina, 2011). Figure 1 below shows the wastage that has decreased due to implementation of lean production in manufacturing firms of Thailand in the past:

Figure 1: Trends of wastage during production

All of it is putting accumulative pressure on the firms for their lack of proper practices and the researchers for not coming up with innovative models including both of these factors in the studies including evidences for all of the possible outcomes and advantages of the application of both of these production systems (Chen, Cheng, Ching, Hsiang, & Chang, 2012). The researcher has opted the current topic and problem as it is emerging as a new trend and as a need of time as well, the researcher has the aim to elaborate this problem and to present the possible solution so that valuable contributions can be made along with evidences derived with the help of the research done using latest tools and techniques (Dincer, 2012). So, the researcher will be applying SEM and CFA and will be employing the tools like SPSS and AMOS for the purpose of data analysis in this study. The researcher has the aim to:

- Know about the impact of green production on the marketing performance
- Know about the impact of lean production on the marketing performance
- Know about the mediating impact of absorptive capacity between lean production and the marketing performance

- Know about the mediating impact of absorptive capacity between green production and the marketing performance

The researcher has the aim to add up valuable contributions for the literature of the green and lean methods of production. The researcher also has the aim to add up valuable suggestions for the manufacturing companies so that they can easily switch towards the lean method of production and the green way of production. Though, it is not easy to change an entire system, but it can be made easy with the presentation of some valuable ideas and policies that the researcher is aiming to present the industry with. The researcher has the aim to elaborate the green way of production and the lean way of production while also highlighting that why these two are important for the organizations to opt and why these two will be a positive and significant change in the organizational operations to make the organizational survival easy.

2. Literature review

2.1 Green production

In most of the companies the manufacturing or production sector is one of the major sectors who can contribute to the overall growth of the economy of the any country around the globe (Dunning, 2012). This sector provides thousands of jobs and

opportunities to the citizens for their welfare and for their bright future. Green manufacturing is a part of manufacturing. It is also known as environmental sound or environmentally friendly manufacturing. As its name shows, green means the clean and green environment with less pollution in the air (Putnik, Alves, Dinis-Carvalho, & Sousa, 2012). It is a kind of manufacturing in which the production department uses natural resources, and some of them recycle different items in order to maintain and clean the environment (Pestoff, 2012). They do so in order to reduce pollution from the environment through their significant processes. Nowadays, green production has become the need of Asian countries and as well as European countries as well. In green manufacturing industries, we do not use so many technologies and advanced processes in order to keep the environment clean (Schiederig, Tietze, & Herstatt, 2012). The regulatory authorities give proper instruction and training to the companies who are doing green production in their organizations. Workers at such organizations are able to utilize the technology through that technology they are able to save energy and by saving it they are producing high-quality products as well (Wilson, 2012). In green manufacturing, the ratio of wastage of material is very low, which is a good sign for a sound environment. Through such kind of production, employees are seeing their good relations with the public and owners are seeing their good relations with authorities and government (Zhao, Zhao, Davidson, & Zuo, 2012). Green manufacturing mostly focuses on recycling. The industries are also doing so because they now know the value of a clean and green environment. In every region of the world, every organization is now establishing the processes of green manufacturing by developing green manufacturing workplaces (Leonardi, Huysman, & Steinfield, 2013). Companies are also focusing on the future to invest in such workplaces who are following the growing green workforces and workplaces.

2.2 *Lean production*

Lean production or lean manufacturing means the production with minimum wastage of the material. It means to give the customer what he exactly wants according to his requirement but by wasting a minimum of the wastage. (Bocken, Short, Rana, & Evans, 2014) defines lean production as it is a way to do more with less. It means to have maximum output with minimum but relevant input (Volberda, Van Den Bosch, & Heij, 2013). Lean production also means that the production of goods and products with less time, less material and with less human force. In such kind of production, we must specify the value that while making the product. We must know about the exact required product by the customer then we should make that one accordingly by doing it in minimum time and with minimum wastage (Zhou, Pan, Chen, & Yang, 2013). The process of lean production also considers the flow of the product, it means to make sure that the product has gone through an important value-added step. In lean production, perfection matters a lot, skilled workforce can do this by considering the concept of lean production in their mind (Bernardo, 2014).

2.3 *Absorptive capacity*

In business management, absorptive capacity means to acknowledge the value of the new information and then the application of the information to their relevant work by an organization (Ebrahim, Battilana, & Mair, 2014). It is also said to be a major reason to invest in research and development department of an organization. It focuses on R&D rather than purchasing the innovation or purchasing the solution to any problem. Absorptive capacity can be increased by internal research and development department for an organization (Ahadian et al., 2015). The investment in the research and development department of the organization is of great importance because it is better to create value of new information which can be from an external point of view. Research and development, planning and development (Battilana, Sengul, Pache, & Model, 2015), social capital, skilled workforce, external

interaction and good supplier interactions are the major studies included in the absorptive capacity (Bernardini, Cinelli, Anguillesi, Coltelli, & Lazzeri, 2015; Kamal, 2019; Kamrozzaman, Badusah, & Ruzanna, 2019; Khaled, Hossan, & Anannya, 2020). Nowadays, the absorptive capacity now considered as dynamic capabilities of the organization. Mostly it focuses on the innovation.

2.4 Marketing performance:

Basically, marketing performance is the results of the marketing or you can say that the output that can be compared with the set goals of the organization (Guo et al., 2015). If these outputs are great than the set objectives then you can say that the marketing performance of your organization is better and if the objectives do not meet with the results then you will say that the marketing performance is not very good. First marketing organization must set the different criteria or objectives for the companies and drive to conquer these objectives by their inputs (Kohtala, 2015). To be successful in this field you have to understand to major component of marketing performance, marketing execution and marketing performance management (Khan & Shathi, 2018; Novo, Bras, García, Belgacem, & Curvelo, 2015). The marketing execution is about the activities faced by marketers in market, form global campaigns to individual awareness campaigns. It is a strong muscle of marketing attempts of the organization. The processes and technological actions used by the marketing teams are known a marketing performance management. It is a major part to identify the goal and to ensure the objectives are according to the set objectives or not (Santos, Pache, & Birkholz, 2015).

2.5 The impact of green production on marketing performance

It is an obvious thing that marketing campaigns with green production awareness can be successful all over the world because the rapid change climate has now become the challenge for the governments

and organizations so green production can be proved successful in better marketing performance. H1: The impact of green production on marketing performance is significant.

2.6 The impact of lean production on marketing performance

When the lean production practices apply on organization who are producing the goods for consumers, the impact of organizational performance may enhance by this method of production because it involves minimum wastage and minimum time as well (KHUSHIK & DIEMER, 2020; Kiliç & Dinçer, 2019; Gulsun & Mic, 2019; Vezzoli, Ceschin, Diehl, & Kohtala, 2015). So, the impact of lean production on marketing performance is significant.

H2: The impact of lean production on marketing performance is significant.

2.7 The mediating impact of absorptive capacity between green production and marketing performance

Absorptive capacity involves different types of aspects related to advanced production with research and development processes (Cohen & Munoz, 2016), which can lead towards the marketing success and also it supports the green production as well proved by different studies done in the past.

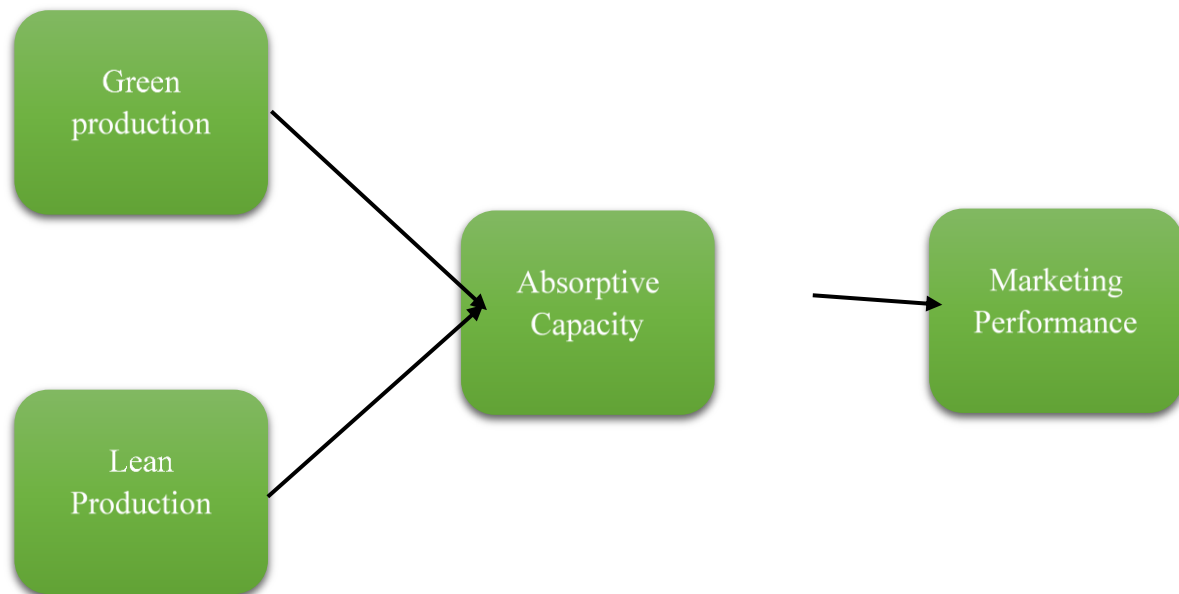
H3: The mediating impact of absorptive capacity between green production and marketing performance is significant.

2.8 The mediating impact of absorptive capacity between lean production and marketing performance

The R&D provides necessary instructions and method which can be proved feasible in the field of lean production and then it also supports the positive marketing plans for the organization or product (Dennis, 2016).

H4: The mediating impact of absorptive capacity between lean production and marketing performance is significant.

Theoretical framework:



3. Methodology of the research

3.1 Context of the study

The study is all about lean production and green production method, so the researcher has chosen the manufacturing sector of Khai Phon Phisai District Nong Province, Thailand. The researcher has collected the data through the structure self-administered questionnaire survey method. The researcher has the aim to completely examine the current ways of production and manufacturing and the consequences that come along with those methods. And the researcher then wants to take a feedback on the new methods that are being suggested in the model of this study. So, the researcher will be collecting the data from the individuals of the manufacturing sector of Khai Phon Phisai District Nong Province, Thailand.

3.2 Sampling and data collection

The researcher has used the method of quantitative study, self-administered questionnaire survey method will be used. Also, the researcher is using the deductive approach of study along with positivism approach. The researcher collected data in a self-administered way, the sampling frame was the manufacturing sector of Khai Phon Phisai District Nong Province, Thailand and the sampling

unit were the individuals from manufacturing sector of Khai Phon Phisai District Nong Province, Thailand. In total, the researcher received 471 responses. On these responses different techniques and tools were applied to analyze them.

3.3 Measures

- **Lean production**

For this purpose, the scale of (Green, 1999) was used, and there were 8 items on it measured on a 5-point Likert scale.

- **Green production**

For this purpose, the scale of (King & Lenox, 2001) was used, and there were 6 items on it measured on a 5-point Likert scale.

- **Absorptive capacity**

For this purpose, the scale of (Rothenberg, Pil, & Maxwell, 2001) was used, and there were 3 items on it measured on a 5-point Likert scale.

- **Marketing performance**

For this purpose, the scale of (Chiaroni et al., 2011) was used, and there were 12 items on it measured on a 5-point Likert scale.

3.4 Data analysis

For the purpose of the analysis of the data, the researcher has used latest tools and techniques, the

researcher has performed various tests and have applied various tools to identify any problem in the data and to validate the data. The researcher has applied SEM and CFA on the data and has employed the tools like SPSS AND AMOS for the purpose of data analysis.

4. Data analysis and interpretation

4.1 Demographical analysis of the respondents

In total, the data was collected from 471 individuals, out of those individuals, 55.6% were males and 44.4% individuals were females. Also,

out of the respondents 149 were of age less than 25 years, 204 individuals were of age between 25 to 35 years, 101 individuals were of age between 35 to 45 years and 17 individuals were of age more than 45 years. The experience of 17% of the respondents was less than 2 years, the experience of 44.6% of individuals was between 2 to 5 years, the experience of 29.5% individuals was between 5 to 8 years and the experience of 42 individuals was more than 8 years.

4.2 Descriptive statistics

Table 2: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness	Std. Error
GreenProd	471	1.00	5.00	3.1677	1.05681	-.164	.113
LeanProd	471	1.00	5.00	3.3494	1.02132	-.328	.113
AbsorCap	471	1.00	5.00	3.4659	1.18279	-.481	.113
MarketPerf	471	1.00	5.28	3.3966	1.15605	-.480	.113
Valid N (listwise)	471						

The value of Kaiser-Meyer-Olkin Measure of Sampling Adequacy is more than 0.8 showing a valid value, also significance level that is less than .05 shows the significance of the collected data.

The data collected is valid because the values lie within a valid range of the 5-point Likert scale, there is a low value of standard error present which

is the presentation of the difference in the mean of the mean of the sample and the mean of the population, so if it is low, the data is valid and good to go for further testing.

4.3 KMO and Bartlett's Test

Table 3: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.949
Bartlett's Test of Sphericity	Approx. Chi-Square	12649.587
	df	253
	Sig.	.000

4.4 Rotated component matrix

Table 4: Rotated Component Matrix^a

	Component			
	1	2	3	4
GP1		.830		
GP2		.867		
GP3		.828		

GP4		.786	
GP5		.822	
GP6		.853	
LP1			.785
LP2			.762
LP3			.812
LP4			.864
LP5			.843
LP6			.885
AC1	.858		
AC2	.859		
AC3	.854		
AC4	.901		
AC5	.918		
AC6	.908		
AC7	.907		
MP1			.856
MP2			.865
MP3			.855
MP4			.857

In order to be valid correlations, have to be high. Preferably more than 70%, in above table, it can be seen that all values are more than 70% ore 0.7, showing a valid correlation, so it can be said that

the correlation of values is strong and the data is valid to go on for further testing.

4.5 Convergent and Discriminant Validity

Table 5: Convergent and Discriminant Validity

	CR	AVE	MSV	AC	GP	LP	MP
AC	0.907	0.859	0.280	0.927			
GP	0.949	0.756	0.296	0.466	0.869		
LP	0.940	0.725	0.296	0.410	0.544	0.851	
MP	0.947	0.818	0.280	0.529	0.449	0.439	0.905

The above table 5 is showing values of CR more than 70% which means the values are in a very suitable range, also the values for all of the variables for AVE are in a significant range being more than 0.5 or 50% so the data is valid to go for further testing (Hameed, Basheer, Iqbal, Anwar, & Ahmad, 2018; Hassan, Hameed, Basheer, & Ali,

2020; Kim & Le, 2018; Kiral, 2019; Kola, Opeyemi, & Olu, 2020; Naveed, Hameed, Albassami, & Moshfegyan, 2019; Ul-Hameed, Mohammad, & Shahar, 2018).

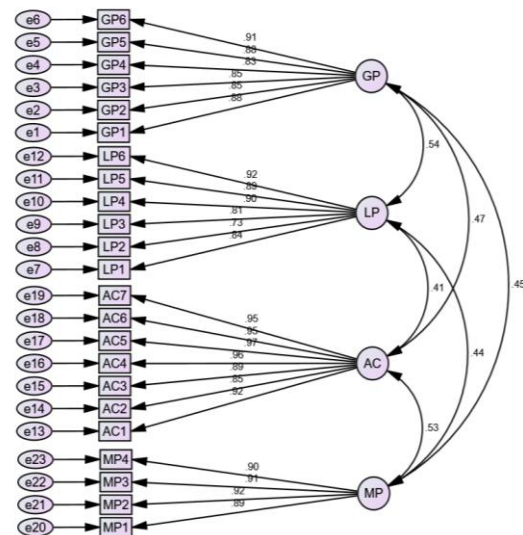
4.6 Model Fit Indices

Table 6: Model Fit Indices

CFA Indicators	CMIN/DF	GFI	IFI	CFI	RMSEA
Threshold Value	≤ 3	≥ 0.80	≥ 0.90	≥ 0.90	≤ 0.08
Observed Value	2.735	0.894	0.969	0.969	0.061

The table above shows that all observed values are all correct when compared with the threshold values, it can be seen that the CMIN value is less than 3, RMSEA is less than 0.08, IFI is more than .90 and all of the other values are also up to the threshold values standard, showing the validity of the data and selected variables. CMIN is given in figure 2 below:

Figure 1: CFA



4.7. SEM

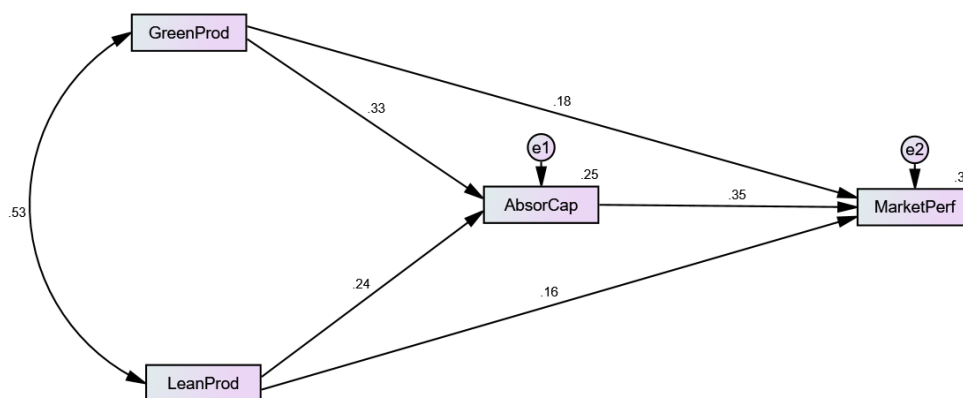
Table 7: Structural Equation Modeling

Total Effect	LeanProd	GreenProd	AbsorCap
AbsorCap	.240**	.329**	.000
MarketPerf	.241**	.300**	.354**
Direct Effect	LeanProd	GreenProd	AbsorCap
AbsorCap	.240**	.329**	.000
MarketPerf	.156**	.184**	.354**
Indirect Effect	LeanProd	GreenProd	AbsorCap
AbsorCap	.000	.000	.000
MarketPerf	.085**	.116**	.000

In the table of SEM, results of impacts of the variables are given, it can be seen that the impact of lean production is significant and positive on marketing performance and with 1% increase, will cause it to increase by 15.6%. Likewise, the impact of green production is significant and positive on

marketing performance as well, causing it to increase by 18.4% with every 1% increase. The mediation of absorptive capacity is significant for both relations by 24% and 32.9% respectively. SEM's figure is presented in figure 3:

Figure 3: SEM



5. Discussion and conclusion

5.1 Discussion

The aim of this study was to know the impact of green production on the marketing performance and to know about the impact of lean production on marketing performance. The study took absorptive capacity as a mediator as well. The first hypothesis proposed by the study was that, "The impact of green production on marketing performance is significant." This hypothesis has been accepted by the results of this study and also according to the study of (Goffin & Mitchell, 2016), marketing campaigns with green production awareness can be successful all over the world because the rapid change climate has now become the challenge for the governments and organizations so green production can be proved successful in better marketing performance. The second hypothesis proposed was that, "The impact of lean production on marketing performance is significant." This hypothesis has been accepted by the results of this study and according to the study of (Pal, Kumar, & Banerjee, 2016), the impact of organizational performance may enhance by this method of production because it involves minimum wastage and minimum time as well. The third hypothesis proposed was that, "The mediating impact of absorptive capacity between green production and marketing performance is significant." This hypothesis has also been accepted by the results of present study and (Decol et al., 2017) suggested that it can lead towards the marketing success and also it supports the green production as well proved by different studies done in the past. The fourth hypothesis suggested was that, "The mediating impact of absorptive capacity between lean production and marketing performance is significant." This hypothesis has also been accepted by the results of the study and the study of (Nambisan, Lyytinen, Majchrzak, & Song, 2017) as well.

5.2 Conclusion

The reason to conduct this study was to know the impact of green production on the marketing performance and to know about the impact of lean

production on marketing performance. The study took absorptive capacity as a mediator as well. It is to conclude in the results that the impact of lean production and the impact of green production is significant on the marketing performance while the absorptive capacity plays a significant role in between these two relationships.

5.2.1 Implications of the study

The study has its vast implications in the literature, as it has significantly enhanced the information regarding the gaps that were present in the past literature and the study has also highlighted the importance of green way of production and the impacts of lean way of production on the marketing performance. The study has elaborated all of the factors that can later on serve as a spark for the initiatives of different firms towards shifting their ways of production to lean and green ways of production. The researcher has given evidences of the results and impacts of lean and green ways of production so that policies can be made easily and can be accepted worldwide without any hesitation regarding the implications of the production methods mentioned.

5.2.2 Limitations and future research recommendations

The study has made valuable contributions to the literature and practical decision-making part as well, but there is no doubt that there are still some of the limitations present. The researcher has only employed quantitative way of research. Whereas, the researcher could have used the mixed method of research for the purpose of knowing the past impacts of these methods of production as well. So, the future researchers are recommended to use the mixed method of research for the same problem under study. The future researchers are also advised to choose a larger sampling frame as in this research, due to lack of time, the researcher's sampling frame was too narrow.

REFERENCES

- [1] Ahadian, S., Estili, M., Surya, V. J., Ramón-Azcón, J., Liang, X., Shiku, H., . . . Bae, H. (2015). Facile and green production

- of aqueous graphene dispersions for biomedical applications. *Nanoscale*, 7(15), 6436-6443.
- [2] Battilana, J., Sengul, M., Pache, A.-C., & Model, J. (2015). Harnessing productive tensions in hybrid organizations: The case of work integration social enterprises. *Academy of Management journal*, 58(6), 1658-1685.
- [3] Bernardini, J., Cinelli, P., Anguillesi, I., Coltelli, M.-B., & Lazzeri, A. (2015). Flexible polyurethane foams green production employing lignin or oxypropylated lignin. *European Polymer Journal*, 64, 147-156.
- [4] Bernardo, M. (2014). Integration of management systems as an innovation: a proposal for a new model. *Journal of Cleaner Production*, 82, 132-142.
- [5] Bocken, N. M., Short, S. W., Rana, P., & Evans, S. (2014). A literature and practice review to develop sustainable business model archetypes. *Journal of cleaner production*, 65, 42-56.
- [6] Chen, C.-R., Cheng, Y.-J., Ching, Y.-C., Hsiang, D., & Chang, C.-M. J. (2012). Green production of energetic *Jatropha* oil from de-shelled *Jatropha curcas* L. seeds using supercritical carbon dioxide extraction. *The Journal of Supercritical Fluids*, 66, 137-143.
- [7] Chiaroni, D., Chiesa, V., & Frattini, F. (2011). The Open Innovation Journey: How firms dynamically implement the emerging innovation management paradigm. *Technovation*, 31(1), 34-43.
- [8] Cohen, B., & Munoz, P. (2016). Sharing cities and sustainable consumption and production: towards an integrated framework. *Journal of cleaner production*, 134, 87-97.
- [9] Decol, L. T., Casarin, L. S., Hessel, C. T., Batista, A. C. F., Allende, A., & Tondo, E. C. (2017). Microbial quality of irrigation water used in leafy green production in Southern Brazil and its relationship with produce safety. *Food microbiology*, 65, 105-113.
- [10] Dennis, P. (2016). *Lean Production simplified: A plain-language guide to the world's most powerful production system*: Crc press.
- [11] Dincer, I. (2012). Green methods for hydrogen production. *International journal of hydrogen energy*, 37(2), 1954-1971.
- [12] Dunning, J. H. (2012). *International production and the multinational Enterprise (RLE international business)*: Routledge.
- [13] Ebrahim, A., Battilana, J., & Mair, J. (2014). The governance of social enterprises: Mission drift and accountability challenges in hybrid organizations. *Research in Organizational Behavior*, 34, 81-100.
- [14] Goffin, K., & Mitchell, R. (2016). *Innovation management: effective strategy and implementation*: Macmillan International Higher Education.
- [15] Green, S. D. (1999). The missing arguments of lean construction. *Construction Management & Economics*, 17(2), 133-137.
- [16] Gulsun, B. & Mic, P. (2019). Multi-Criteria the decision making and the choice of university in education. *International Journal of Business Tourism and Applied Sciences*. 7(1). 32-38.
- [17] Guo, W.-F., Zhou, J., Yu, C.-L., Tsai, S.-B., Xue, Y.-Z., Chen, Q., . . . Wu, C.-H. (2015). Evaluating the green corporate social responsibility of manufacturing corporations from a green industry law perspective. *International Journal of Production Research*, 53(2), 665-674.
- [18] Haigh, N., & Hoffman, A. J. (2011). Hybrid organizations: the next chapter in sustainable business. *Organizational dynamics*, 41(2), 126-134.
- [19] Hameed, W. U., Basheer, M. F., Iqbal, J., Anwar, A., & Ahmad, H. K. (2018). Determinants of Firm's open innovation performance and the role of R & D

- department: an empirical evidence from Malaysian SME's. *Journal of Global Entrepreneurship Research*, 8(1), 29. doi: <https://doi.org/10.1186/s40497-018-0112-8>
- [20] Hassan, S. G., Hameed, W. U., Basheer, M. F., & Ali, J. (2020). ZAKAT COMPLIANCE INTENTION AMONG SELF-EMPLOYED PEOPLE: EVIDENCE FROM PUNJAB, PAKISTAN. *AL-ADWAH*, 34(2), 80-96.
- [21] Kamal, S. M. (2019). Developing EFL learners vocabulary by reading English comprehension in EFL classroom. *International Journal of English Language and Literature Studies*, 8(1), 28-35. doi: [10.18488/journal.23.2019.81.28.35](https://doi.org/10.18488/journal.23.2019.81.28.35)
- [22] Kamrozzaman, N. A., Badusah, J., & Ruzanna, W. M. (2019). Coggle: SWOT Analysis in Lifelong Learning Education Using Online Collaborative Mind-Mapping. *International Journal of Asian Social Science* 9(1), 139-147. doi: [10.18488/journal.1.2019.91.139.147](https://doi.org/10.18488/journal.1.2019.91.139.147)
- [23] Khaled, S., Hossan, J., & Anannya, A. (2020). Does Good Governance Practice Leads to Sound Financial Performance? Evidence from RMG Companies Enlisted in Dhaka Stock Exchange (DSE). *International Journal of Management*, 9(2), 76-90. doi: [10.18488/journal.11.2020.92.76.90](https://doi.org/10.18488/journal.11.2020.92.76.90)
- [24] Khan, M. B. U., & Shathi, I. J. (2018). Nature of Sexual Harassment Against the Female Students of Bangladesh: A Cross-Sectional Study in Tangail Municipality. *International Journal of Social and Administrative Sciences*, 3(2), 73-82. doi: [10.18488/journal.136.2018.32.73.82](https://doi.org/10.18488/journal.136.2018.32.73.82)
- [25] KHUSHIK, F., & DIEMER, A. (2020). Education and Sustainability, How SDG4 Contributes to Change the Representations of Developing Issues? The Case Study of Pakistan. *International Journal of Management*, 9(2), 101-119. doi: [10.18488/journal.11.2020.92.101.119](https://doi.org/10.18488/journal.11.2020.92.101.119)
- [26] Kiliñç, Z., & Dinger, N. (2019). An Analysis of Conflict Styles in Terms of Various Variables among Athletes Participated in Turkey Inter-Universities Wushu Championship. *Asian Journal of Education and Training*, 5(1), 140-145. doi: <https://doi.org/10.20448/journal.522.2019.51.140.145>
- [27] Kim, N. T., & Le, M. B. (2018). CO2 emissions and economic growth in Vietnam: An ARDL bound testing approach. *Asian Journal of Economic Modelling*, 6(1), 47-55. doi: [10.18488/journal.8.2018.61.47.55](https://doi.org/10.18488/journal.8.2018.61.47.55)
- [28] King, A. A., & Lenox, M. J. (2001). Lean and green? An empirical examination of the relationship between lean production and environmental performance. *Production and operations management*, 10(3), 244-256.
- [29] Kiral, B. (2019). The Rights and Responsibilities of Parents According to the Views of Teachers. *Asian Journal of Education and Training*, 5(1), 121-133. doi: <https://doi.org/10.20448/journal.522.2019.51.121.133>
- [30] Kohtala, C. (2015). Addressing sustainability in research on distributed production: an integrated literature review. *Journal of Cleaner Production*, 106, 654-668.
- [31] Kola, A. J., Opeyemi, A. A., & Olu, A. M. (2020). Assessment of Scientific Literacy Skills of College of Education Students in Nigeria. *American Journal of Social Sciences and Humanities*, 5(1), 207-220. doi: [10.20448/801.51.207.220](https://doi.org/10.20448/801.51.207.220)
- [32] Leonardi, P. M., Huysman, M., & Steinfield, C. (2013). Enterprise social media: Definition, history, and prospects for the study of social technologies in organizations. *Journal of Computer-Mediated Communication*, 19(1), 1-19.
- [33] Nambisan, S., Lyytinen, K., Majchrzak, A., & Song, M. (2017). Digital Innovation Management: Reinventing innovation

- management research in a digital world. *Mis Quarterly*, 41(1).
- [34] Naveed, R. T., Hameed, W. U., Albassami, A. M., & Moshfegyan, M. (2019). Online Tax System (OTS) in Pakistan: The role of Tax Service Quality (TSQ) and Information Communication Technology (ICT). *Pacific Business Review International*, 11(12), 78-86.
- [35] Novo, L. P., Bras, J., García, A., Belgacem, N., & Curvelo, A. A. (2015). Subcritical water: a method for green production of cellulose nanocrystals. *ACS Sustainable Chemistry & Engineering*, 3(11), 2839-2846.
- [36] Pal, P., Kumar, R., & Banerjee, S. (2016). Manufacture of gluconic acid: a review towards process intensification for green production. *Chemical Engineering and Processing: Process Intensification*, 104, 160-171.
- [37] Pestoff, V. (2012). Co-production and third sector social services in Europe: Some concepts and evidence. *Voluntas: International Journal of Voluntary and Nonprofit Organizations*, 23(4), 1102-1118.
- [38] Putnik, G. D., Alves, A. C., Dinis-Carvalho, J., & Sousa, R. M. (2012). Lean production as promoter of thinkers to achieve companies' agility. *The Learning Organization*.
- [39] Riedl, C., May, N., Finzen, J., Stathel, S., Kaufman, V., & Krcmar, H. (2011). An idea ontology for innovation management *Semantic Services, Interoperability and Web Applications: Emerging Concepts* (pp. 303-321): IGI Global.
- [40] Romero, D., & Molina, A. (2011). Collaborative networked organisations and customer communities: value co-creation and co-innovation in the networking era. *Production Planning & Control*, 22(5-6), 447-472.
- [41] Rothenberg, S., Pil, F. K., & Maxwell, J. (2001). Lean, green, and the quest for superior environmental performance. *Production and operations management*, 10(3), 228-243.
- [42] Santos, F., Pache, A.-C., & Birkholz, C. (2015). Making hybrids work: Aligning business models and organizational design for social enterprises. *California Management Review*, 57(3), 36-58.
- [43] Schiederig, T., Tietze, F., & Herstatt, C. (2012). Green innovation in technology and innovation management—an exploratory literature review. *R&d Management*, 42(2), 180-192.
- [44] Ul-Hameed, W., Mohammad, H., & Shahar, H. (2018). Microfinance institute's non-financial services and women-empowerment: The role of vulnerability. *Management Science Letters*, 8(10), 1103-1116.
- [45] Vezzoli, C., Ceschin, F., Diehl, J. C., & Kohtala, C. (2015). New design challenges to widely implement 'Sustainable Product-Service Systems'. *Journal of Cleaner Production*, 97, 1-12.
- [46] Volberda, H. W., Van Den Bosch, F. A., & Heij, C. V. (2013). Management innovation: Management as fertile ground for innovation. *European Management Review*, 10(1), 1-15.
- [47] Wilson, T. A. (2012). Supporting social enterprises to support vulnerable consumers: the example of community development finance institutions and financial exclusion. *Journal of consumer policy*, 35(2), 197-213.
- [48] Zhao, Z.-Y., Zhao, X.-J., Davidson, K., & Zuo, J. (2012). A corporate social responsibility indicator system for construction enterprises. *Journal of cleaner production*, 29, 277-289.
- [49] Zhou, M., Pan, Y., Chen, Z., & Yang, W. (2013). Optimizing green production strategies: An integrated approach. *Computers & Industrial Engineering*, 65(3), 517-528.