

AN INTEGRATED FRAMEWORK FOR LEAN PRODUCTION AND  
MARKETING MIX STRATEGY TOWARD BUSINESS  
PERFORMANCE

MARYAM HAMID YASEEN

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Faculty of Technology Management and Business  
Universiti Tun Hussein Onn Malaysia

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## DEDICATION

I dedicate this thesis to my great parents for their love, care, support, prayers and sacrifices; they educated and prepared me for my future endeavors.

I am also grateful to my husband, who accompanied me throughout this journey and his love, understanding, continuous support and prayers made me able to complete my research work.

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God bless you all.



PTTA (PERPUSTAKAAN TUNJUKKAN AMINAH)

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## ABSTRACT

Business performance is a critical issue for organizations, especially in the food industry, which faces multiple challenges that are forcing companies in the industry to improve their strategies to remain competitive. The food industry plays a vital role in the economy of Malaysia by creating employment, market outlets, and adding value to primary agricultural products, and it accounts for about 10% of Malaysia's manufacturing output. Despite It contributed about RM21.1 billion, the performance of the Malaysian food industry was below economists' expectations in 2018 and 2019. Therefore, changing the traditional way of working to a world-class management system such as lean production and adopting appropriate and effective executed marketing strategies could help companies survive and stay competitive. Thus, this study attempts to develop an integrated framework of lean production practices and marketing mix strategy toward improving the business performance of Malaysian food industry companies. To have empirical evidence about these relationships, data have been collected from 187 executive managers for Malaysian food industry companies, using a self-administered questionnaire. The response rate was 31.2%, which mean 62.4% of the required sample size. The collected data have been analyzed using both descriptive statistics and multiple regressions. Correlation analysis and multiple regressions using SPSS have been performed to measure the relationship between variables and to test the hypotheses related to the study. The results of the study reveal that lean production practices and marketing mix strategy have a direct positive effect on business performance. The findings of the study also revealed that lean production practices and marketing mix strategy positively correlated. Moreover, lean production and marketing mix strategy integration affect business performance. This study contributes to the body of knowledge by investigating the relationship between lean production practices and marketing mix strategy and business performance using one comprehensive research framework. For future research, it is suggested that quantitative research, supported by exploratory research techniques such as in-depth interviews, remains important when researching this topic since the mixed approach has not yet been undertaken in this area.

## ABSTRAK

Prestasi perniagaan adalah masalah penting bagi organisasi, terutama dalam industri makanan, yang mana menghadapi banyak cabaran dan memaksa syarikat dalam industri untuk meningkatkan strategi mereka untuk tetap kompetitif. Industri makanan memainkan peranan penting dalam ekonomi Malaysia dengan mewujudkan pekerjaan, gerai pasar, dan menambah nilai pada produk pertanian primer, dan menyumbang sekitar 10% dari hasil pembuatan Malaysia. Walaupun menyumbang kira-kira RM21.1 bilion, prestasi industri makanan Malaysia berada dibawah jangkaan ahli ekonomi pada tahun 2018 dan 2019. Oleh itu, mengubah cara kerja tradisional kepada sistem pengurusan bertaraf dunia seperti lean production dan menggunakan yang sesuai serta strategi pemasaran berkesan yang dilaksanakan dapat membantu syarikat bertahan dan terus berdaya saing. Oleh itu, kajian ini berusaha untuk membangunkan kerangka kerja praktik lean production dan strategi campuran pemasaran untuk meningkatkan prestasi perniagaan syarikat industri makanan Malaysia. Untuk memiliki bukti empirikal mengenai hubungan ini, data telah dikumpulkan dari 187 pengurus eksekutif untuk syarikat industri makanan Malaysia, menggunakan kuesioner yang dikendalikan sendiri. Kadar tindak balas adalah 31.2%, yang bermaksud 62.4% dari ukuran sampel yang diperlukan. Data yang dikumpulkan telah dianalisis menggunakan statistik deskriptif dan regresi berganda. Analisis korelasi dan regresi berganda menggunakan SPSS telah dilakukan untuk mengukur hubungan antara pemboleh ubah dan untuk menguji hipotesis yang berkaitan dengan kajian. Hasil kajian menunjukkan bahawa amalan lean production dan strategi campuran pemasaran mempunyai pengaruh positif langsung terhadap prestasi perniagaan. Hasil kajian juga menunjukkan bahawa amalan lean production dan strategi campuran pemasaran berkorelasi positif. Selain itu, integrasi strategi campuran pengeluaran dan pemasaran mempengaruhi prestasi perniagaan. Kajian ini menyumbang kepada pengetahuan baharu dengan menyelidiki hubungan antara amalan lean production dan strategi campuran pemasaran dan prestasi perniagaan menggunakan satu kerangka penyelidikan yang komprehensif. Untuk penyelidikan masa depan, disarankan agar penyelidikan kuantitatif, yang disokong oleh teknik penyelidikan eksploratif seperti temubual mendalam, boleh dilaksanakan kerana pendekatan campuran masih belum dilakukan dalam topik ini.

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## LIST OF ABBREVIATIONS

<b>LP</b>	-	Lean Production
<b>NAP</b>	-	National Agricultural Policy
<b>BOT</b>	-	Balance of Trade
<b>IMPS</b>	-	Malaysia industrial master plans
<b>SMEs</b>	-	Small Medium Enterprises
<b>TPS</b>	-	Toyota Production System
<b>JIT</b>	-	Just in Time
<b>TQM</b>	-	Total Quality management
<b>SMED</b>	-	Single Minute Exchange of Die
<b>TPM</b>	-	Total Productive Maintenance
<b>FMM</b>	-	Federation of Malaysian Manufacturers
<b>WIP</b>	-	Work in Process
<b>4P`s</b>	-	Marketing Mix
<b>RBV</b>	-	Resource-based view
<b>ABV</b>	-	Activity-based view
<b>5S</b>	-	Sort, Set in Order, Shine, Standardize, Sustain
<b>VSM</b>	-	Value Stream Management
<b>MRP</b>	-	Material Requirements Planning
<b>ICT</b>	-	Information and Communication Technologies
<b>ROI</b>	-	Return on Investment
<b>ROA</b>	-	Return on assets
<b>ROS</b>	-	Return on sales
<b>ROIC</b>	-	Return on invested capital
<b>LTDER</b>	-	Long-Term Debt to equity ratio
<b>WACC</b>	-	Weighted average cost of capital
<b>VRIN</b>	-	Valuable, Rare, Inimitable and Non-Substitutable
<b>VIF</b>	-	Variance inflation factor
<b>EFA</b>	-	Exploratory factor analysis
<b>KMO</b>	-	Kaiser-Meyer-Olkin

## CHAPTER 1

### INTRODUCTION

#### 1.1 Research Background

The global food industry faces multiple challenges that are forcing companies in the industry to improve their strategies to remain competitive (Costa, Godinho, Fredendall & Paredes, 2018); as well as, this industry experienced substantial growth globally for the past few decades. In the United States of America, Revenue in the Food segment amounts to US\$7,285,000,000 in 2019. Revenue is expected to show an annual growth rate (CAGR 2019-2024) of 3.1%, resulting in a market volume of US\$8,546,000,000 by 2024 (Statista, 2019). In the case of China, positioned as the first largest of Revenue in the Food segment, it amounts to US\$22,285,000,000 in 2019. Revenue is expected to show an annual growth rate (CAGR 2019-2024) of 11.7%, resulting in a market volume of US\$38,776,000,000 by 2024 (Statista, 2019). The source indicates that the Malaysian food industry will witness a decrease in revenue growth in the coming years, up to 4.7 % in 2024 (Statista, 2019).

The food-processing sector accounts for about 10% of Malaysia's manufacturing output (MIDA, 2018). Processed food contributed about US\$5.1 billion and is exported to more than 200 countries (MIDA, 2018). This industry includes major international and MNC firms, in addition to SMEs. It encompasses sectors such as cocoa and chocolate products, fishery products, cereals and cereal products, processed fruits and vegetables, confectionery, food ingredients, herbs and spices, beverages, animal feed, and others (USDA / FAS, 2018).

Along with other sectors, the food processing industry plays a vital role in the economy of Malaysia by creating employment, market outlets and adding value to primary agricultural products (Afzal, Lawrey, Anaholy & Gope, 2018).

Though Malaysia has been exporting processed food since 1964 to major export destinations, such as Singapore, Indonesia, USA, Thailand, and the Republic of China, and more than 200 countries (Rahman, 2016; MIDA, 2018), it typically runs a trade deficit in food. In 2017, Malaysia achieved a trade surplus in processed food with exports of approximately RM 89.2 billion, with a growth of 8.7%. In 2018, Malaysia exports decreased to RM 78.7 billion of food with growth of -11.8% (Department of Statistics, Malaysia, 2019).

To promote growth, the Malaysian Government has launched the National Agricultural Policy (NAP), the Balance of Trade (BOT) Policy, the Industrial Master Plan (for 1986-1995, 1996-2005 and 2006-2020) and the National Agro-Food Policy (2011- 2020) (Afzal *et al.*, 2018), provided with the government's efforts to make Malaysia a centre for Halal hub (Fauzi, Hashim, Ab Rahman, Suraya, Hassin, & Shahar, 2020).

The organizations in the Malaysian food industry seek to adopt some practices to improve their performance such as, Total Quality Management (TQM), Lean Manufacturing (LM), Halal Standard Practices (HSP), and Hazard Analysis and Critical Control Point (HACCP) (Zainal *et al.*, 2018).

Attract satisfactory business performance is the basis for the enterprise's survival and the principal reason for the existence of the firm, as a firm can generate acceptable results and actions in terms of market growth, an increase of market shares and the industry's relative growth (Liu, GE & Wang, 2014; Maziriri, 2018). Further, business performance is the effort expended by a business firm to achieve customer satisfaction, employee satisfaction, societal satisfaction, and, ultimately, profitability. Also, business performance is a measure of how a manager efficiently and effectively utilizes the firm's resources to accomplish its goals and satisfy all the stakeholders (Mark & Nwaiwu, 2015; Maziriri, 2018).

With the present global scenario, manufacturing organizations face challenges, such as advanced manufacturing philosophies, which make the existing methods obsolete (Taylor, Bogdan & Devault, 2015; Siong & Eng, 2018), therefore, changing the traditional way of working to a world-class management system such as



lean production which could help companies survive and stay competitive (Khusaini, Jaffar & Noriah, 2014).

Scholars claim that lean production principles have been applied to numerous industries to yield drastic improvements. There is no reason why the food processing industry cannot take advantage of one of the most prominent modern times' quality management practices (Goncharuk, 2009; Mahalik & Nambiar, 2010). Yet, there is a general perception that lean production does not lend themselves to easy application in industries that have extensive batch processes, like the food industry. Typically, these business types sell their product from the broad distribution or product mixing centers and are not made to order businesses. They manufacture to a forecast, and usually, the forecast lead time to production is prolonged, resulting in large differences between the estimates that drive production levels and actual demand (Heymans, 2015).

Therefore, appropriate and effective executed marketing strategies are required to productively guide the deployment of available resources where the company marketing strategy abilities in pursuit of desired goals and objectives; therefore, for a company to survive in today's competitive market, it has to strategize in satisfying customer's needs more effectively and efficiently through marketing strategies (Daniel, 2018).

In light of the above, this study was an attempt to developing an integrated framework for lean production practices and marketing mix strategy toward improving the business performance of Malaysian companies in the food industry.

## 1.2 Problem Statement

Malaysia is a highly open, upper-middle-income economy. Along with other sectors, the food processing industry plays a vital role in the economy of Malaysia by creating employment, market outlets and adding value to primary agricultural products (Afzal *et al.*, 2018). Despite its significance and the numerous policy initiatives introduced by the Government to promote the companies' growth, the performance of Malaysian companies in the food industry was below economists' expectations in 2018 and 2019 (Department of Statistics, Malaysia, 2019).

According to the Department of Statistics, Malaysia, (2020) the food industries' growth rates on a year-on-year basis were declined. The Gross Domestic Product by Kind of Economic Activity at Constant 2015 Prices (Growth YoY, %) recorded a decrease in the years 2017 2018 2019 respectively (11.2, 3.7, 3.5), the decrease in Index of Industrial Production (IPI) (Growth YoY, %) also appeared in the same years (10.8, 3.2, 3.05) (Department of Statistics, Malaysia, 2020).

Thus, this industry seems facing some obstacles for further advancement and achieves the threshold of development. This industry has been targeted among one of the 12 sectors under the Third Industrial Master Plan (IMP3) 2006 – 2020 (Afzal *et al.*, 2018).

Zainal, Hassam, Shaharudin, Akbar and Mustafa (2018) investigated the Contributing Factors of Production Performance in the Food Processing Industry. This study's primary objective was to find the factors that can improve the performance amongst food manufacturers in Malaysia; one of the four effective practices in their research is lean manufacturing. It is suggested that for the firms to increase their focus on this practice to improve the performances. They also indicated that aspects like new variables, not listed variable and the sample size need to be highlighted to gain better results and understanding of the issue. Future researchers should also try to obtain more data from the top management level to get better results for the study (Afzal *et al.*, 2018).

In another context, Langat (2016) investigated the influence of product, price, promotion and place of marketing on organizational project enterprise performance in Kenya; the study concluded that marketing strategy is essential in improving the company's performance through the provision of quality products and services that satisfy the customers' needs, offering affordable price and engaging in broader distribution and back it up with effective promotion strategy (Langat, 2016).

In this orientation, Piercy and Rich (2004) indicate in their study (Strategic Marketing and Operations Relationships: The Case of the Lean Enterprise) to that there has been little integration between marketing and the manufacturing or operational sub-systems that fulfil their customer commitments, As they suggested that by taking the superior aspects of marketing (i.e., customer analysis, understanding) and the prominent elements of the lean enterprise (i.e., process-quality improvement) then a lean value chain can be formed which offers organizations a far superior approach to the marketplace than either traditional marketing

functionalization away from operations or lean operational dominance over marketing. As well as, Noda (2015), in his study (Integration of Lean Process and Pricing Strategy in Retail), stressed the importance of the integration of marketing and operation as a corporate strategy to develop a suggested model.

It was also imperative to note that, despite the theoretical contributions made by many international scholars on lean production practices, marketing mix strategy and business performance, it appeared that within Malaysian food industry context, there was a dearth of research studies that have shed light on the impact of lean production practices on business performance (Curkovic, Vickery & Dröge, 2000; Kaynak, 2003; Ahmad, Mehra & Pletcher, 2004; Fullerton & Wempe, 2009; Mackelprang & Nair, 2010; Yang, Hong & Modi, 2011; Inman, Sale, Green & Whitten, 2011; Hofer, Eroglu & Hofer, 2012; Klingenberg, Timberlake, Geurts & Brown, 2013; Ghobakhloo & Hong, 2014; Dora, Van Goubergen, Kumar, Molnar & Gellynck, 2014; Dora, Kumar & Gellynck, 2016; Mutua, Ngugi & Odhiambo, 2018; Sahoo & Yadav, 2018; Abreu-Ledón, Luján-García, Garrido-Vega & Escobar-Pérez, 2018; Negrão, Lopes de Sousa Jabbour, Latan, Godinho Filho, Chiappetta Jabbour & Ganga, 2019) as well as how marketing mix strategy has an impact on the business performance of the companies in Malaysian food industry (Olutunia & Obamuyi, 2008; GbolagadeAdewale, & Oyewale, 2013; Kuwu, Gakure & Ngugi, 2014; Langat, 2016; Wanyi, & Nyagindi, 2016; Mustapha, 2017; Daniel, 2018; Yalo, Enimola & Nafiu, 2019; Fitriah, Rosdi, Rosli, Aziz, Ibrahim, Radzi & Yaacob, 2019).

Previous researchers in Malaysia have examined the food industry in various contexts by focusing on Malaysia industrial master plans (IMPS) and the focus on the national technology and innovation development (Mohamed, Abd Kadir & Raof, 2018); a comparative analysis of the efficiency and productivity of selected food processing industries in Malaysia (Afzal *et al.*, 2018); quality management practices of food manufacturers (Lim, 2016); sustainability assessment and analysis of Malaysian food manufacturing sector (Ahmad, Wong & Elahi, 2017); evaluation of basic knowledge on food safety and food handling practices amongst migrant food handlers in peninsular Malaysia (Who, Thong, Behnke, Lewis & Zain, 2016).

Considering the above gap (more explanation in Table 3.4), the researcher was convinced that research is scarce in the reported literature that has investigated the integration between lean production practices and marketing mix strategy, and how this integration has an impact on the business performance of Malaysian

companies in the food industry (Piercy & Rich, 2004; Reichhart & Holweg, 2007; Mahfouz & Arisha, 2013; Noda, 2015; Reyes, Morales, Aldas, Quilligana, Toasa, & Reyes, 2018). Therefore, this thesis sought to expose the theoretical deficiencies of the literature and make an addition to it with empirical results by developing an integration framework of lean production practices and marketing mix strategy toward improving Malaysian companies' business performance in the food industry.

### **1.3 Research Questions**

The central research question is: what is the impact on business performance by the integration of lean production practices and marketing mix strategy?

The sub-questions are as follows:

- i. What is the extent of lean production practices and marketing mix strategy in Malaysian food industry companies?
- ii. What is the relationship between lean production practices and business performance in Malaysian food industry companies?
- iii. What is the relationship between marketing mix strategy and business performance in Malaysian food industry companies?
- iv. Do the integration of lean production practices and marketing mix strategy impact business performance of Malaysian companies in food industry?

### **1.4 Research Aim**

The aim of this research is:

Developing an integrated framework for lean production practices and marketing mix strategy toward improving business performance of Malaysian companies in food industry.

## 1.5 Research Objectives

The objectives of this study are formulated as below:

- i. To investigate the level of lean production practices and marketing mix strategy in Malaysian food companies.
- ii. To determine the relationship between lean production practices and business performance in Malaysian food companies.
- iii. To analyze the relationship between marketing mix strategy and business performance in Malaysian food companies.
- iv. To evaluate the impact of integrating lean production practices and marketing mix strategy on business performance of Malaysian companies in food industry.

## 1.6 Scope of the Study

This research covered companies in the Malaysian food industry, where it comprises (1309) companies, consisting of both large and SMEs companies (FMM Industry Directory, 2015; Matrade, 2015). A minimum sample of 298 companies is sufficient for a population of 1309 (Saunders, Lewis & Thornhill, 2016). Respondents were the executive managers for the companies, which are individuals at the highest level of management of an organization who have the day-to-day tasks of managing that organization. Since the survey applies into different areas of the company (Marketing and Operations) departments, so the executive manager is the most person has information about the two area.

This study aims to examine the integration between lean production practices and marketing mix strategy toward improving business performance in the study sector.

This research comprises of practices derived from Kanban, SMED, Total productive maintenance and Just-in-time, with respect to lean production practice. Nevertheless, components employed in lean production techniques incorporate components widely found in previous literature. The same principle applied to the marketing mix strategy and business performance. In terms of marketing mix strategy, this study consists of

the (product, price, promotion, distribution) strategies. Business performance indicators covered both market performance and process performance.

## 1.7 Definition of Terms

Prior measuring a variable, it is important to know precisely what the variable is since there are several various potential meanings as the dictionary defines according to Creswell (2014). Researchers typically use operational definitions to ensure the measurements are accurately and concisely defined in depth. The meanings seem to be crucial in all phases of study, particularly in the preparation of an instrument, data collection and also data analysis and interpretation.

Therefore, operational definition is important in order to parry the chance of confusion and ambiguous meaning to the variables in a study that can be interpreted in different ways.

In the context of this study, four major important concepts explained, namely lean production and marketing mix (independent variables), business performance (dependent variable), and food industry, in addition to some related concepts, as follow:

**Lean Production** is speedy, economical and smooth manufacturing by the elimination of non-value-added activities, elimination of waste, the creation of value to customers and continuous incremental improvements

**Kanban** is a system that uses a card to signal a need to produce or transport a container of raw materials or partially finished products to the next stage in the manufacturing process.

**Single Minute Exchange of Die (SMED)** is a Lean tool aiming at reducing setup times in processes in general and machines in particular.

**Total Productive Maintenance (TPM)** is a productive maintenance concept designed to achieve comprehensive effectiveness of the production system by involving everyone within the organization.

**Just-in-Time (JIT)** is a production system can be explained simply as producing only the necessary products, at the necessary time, in the necessary quantity.

**Marketing Mix** is the set of controllable variables and their levels that the firm uses to influence the target market.



**Product** is all the goods and services that a company offers to the target market in order to satisfy their needs.

**Price** is considered a value placed on a product or a service.

**Distribution\ Place** is the method a firm uses to get products and services to different channels and networks with the objective to reach the end customer, either directly or indirectly.

**Promotion** is the combination of advertising, personal selling, publicity, etc., used to communicate with customers and prospects.

**Business Performance** is the overall index of the ability of the firm to satisfy its stakeholders.

**Market Performance** is the performance of a firm which can be measured through sales revenue, market share, profitability, competitive advantage, customer satisfaction and loyalty.

**Process Performance** is a measure of the actual process results achieved when a project follows its defined processes derived from the organization's set standard processes.

## 1.8 Significance of Study

In specific, the study sought to ascertain the relationship between lean production, marketing mix and business performance.

The study may enlarge the knowledge and theories on how lean production practices and marketing mix strategy lead to improve business performance. This study tried to provide the view of integrative practices of lean production with marketing mix strategy and provide a comprehensive approach of performance measurement.

It is also advantageous that this study gave evidence on the importance of the marketing mix as an independent variable integrating with lean production toward business performance. Other researches also explored the connection between lean production and the performance in different environments, but did not encompass the correlation between lean production and marketing mixes; for instance, (Dora *et al*, 2014; Dora *et al*, 2016; Mutua *et al*, 2018; Sahoo and Yadav, 2018; Abreu-Ledón, *et al*, 2018; Negrão, *et al*, 2019).

More importantly, in relation to the body of knowledge, this study hoped to contribute significantly to the body of knowledge in the process of examining implications of lean production practices and marketing mix strategy by looking into the resource-based view (RBV), activity-based view (ABV), and complementarity theories. The RBV focuses on selecting the resources that can be strategically important for companies' performance and competitive advantages (Barney, 1991).

However, the RBV suffered from at least three factors; they are lack of the link relating the resources and value creation (Priem & Butler, 2001), lack of the concept of activities (Sheehan & Foss, 2007), and lack of the concept of complementarity between the resources (Chan, Shaffer & Snape, 2004). The first and second limitations would be overcome by using ABV theory, whereas the complementarity theory would overwhelm the third limitation. As a result, employing the three theories could strengthen the theoretical framework used in this current study.

This study provided a detailed analysis of lean production, marketing mix and business performance in the Malaysian food industry. In the context of Malaysia, very few studies have investigated the implication of lean production on companies' performance. While there was no study examined the relationship between lean production and marketing mix in Malaysia, there were only a few studies such as (Reichhart & Holweg, 2007; Mahfouz & Arisha, 2013; Noda, 2015; Reyes, *et al.*, 2018) that investigated in this relationship in other countries. Majority of these studies tended to be case study based on a single manufacturing company experience, such as (Piercy & Rich, 2004; Reichhart & Holweg, 2007; Mahfouz & Arisha, 2013; Noda, 2015; Reyes, *et al.*, 2018). There were no studies that have investigated the integration between lean production and marketing mix using the information provided from a large number of companies.

From a practical perspective, this study could offer several suggestions to practitioners and managers in the area of operations management and marketing management, especially lean production. Practically, utilization of the RBV, ABV and complementarity theories would strengthen the company to achieve better performance and significant competitive advantages.

Furthermore, it was hoped; the present study allowed practitioners and managers to gain deeper knowledge and understanding about lean production itself and more importantly its potential benefits that lean production can convey if



## REFERENCES

- Abdul Aziz, R., Mahmood, R., Tajudin, A., & Abdullah, M. H. (2014). The relationship between entrepreneurial orientation and business performance of SMEs in Malaysia. *International Journal of Management Excellence*, 2(3), 221–226. doi:10.0001%2Fijme.v2i3.96
- Abdulmalek, F. A., & Rajgopal, J. (2006). Analyzing the benefits of lean manufacturing and value stream mapping via simulation: a process sector case study. *International Journal of production economics*, 107(1), 223-236.
- Abreu-Ledón, R., Luján-García, D. E., Garrido-Vega, P., & Escobar-Pérez, B. (2018). A meta-analytic study of the impact of Lean Production on business performance. *International Journal of Production Economics*, 200, 83-102.
- Adesta, E. Y. T., Prabowo, H. A., and Agusman, D. (2018, January). Evaluating 8 pillars of Total Productive Maintenance (TPM) implementation and their contribution to manufacturing performance. In *IOP Conference Series: Materials Science and Engineering* (Vol. 290, No. 1, p. 012024). IOP Publishing.
- Adom, D., Hussein, E., & Agyem, J. (2018). Theoretical and conceptual framework: Mandatory ingredients of a quality research. *International Journal of Scientific Research*, 7(1), 438-441.
- Afzal, M. N. I., Lawrey, R., Anaholy, M. S., & Gope, J. (2018). A comparative analysis of the efficiency and productivity of selected food processing industries in Malaysia. *Malaysian Journal of Sustainable Agriculture*, 2(1), 19-28.
- Ahmad, A., Mehra, S., Pletcher M., (2004). The Perceived Impact of JIT Implementation on Firm's financial/greth Performance. *Journal of Manufacturing Technology Management*, 15(2), 118-130.
- Ahmad, S., Wong, K. Y., & Elahi, H. (2017). Sustainability Assessment and Analysis of Malaysian Food Manufacturing Sector—A Move Towards Sustainable Development. *Advanced Science Letters*, 23(9), 8942-8946.

- Ahuja, I. P. S., and Khanba, J. S. (2007). An evaluation of TPM initiatives in Indian industry for enhanced manufacturing performance. *International Journal of Quality and Reliability Management*, 25(2), 147-172.
- Ajupov, A. A., Kurilova, A. A., & Kovalenko, O. G. (2015). Financial recovery organization on the basis of cash flow management. *Mediterranean Journal of Social Sciences*, 6(3), 710.
- Al-Baik, O., & Miller, J. (2015). The kanban approach, between agility and leanness: a systematic review. *Empirical Software Engineering*, 20(6), 1861-1897.
- Alefari, M., Salonitis, K., and Xu, Y. (2017). The role of leadership in implementing lean manufacturing.
- Algahtany, S., Almethheb, A., & Alomar, B. (2011). Research methods of behavior science with SPSS applications. *Riyadh, Saudi Arabia: Alobecan Library*.
- Alkhoraf, A. (2018). Lean implementation in small and medium enterprises: Literature review. *Operations Research Perspectives*, 100089.
- Alreck, Pamela L., & Settle, Robert B. (2004). *The survey research handbook* (3rd ed.): New York: Mcgraw-Hill Irwin.
- Alvi, M., & Ikram, M. (2015). Impact of total assets and net Income on return on equity of small medium enterprises of Pakistan.
- Amit, R., & Schoemaker, P. J. (1993). Strategic assets and organizational rent. *Strategic management journal*, 14(1), 33-46.
- Ampuero, O., & Vila, N. (2006). Consumer perceptions of product packaging. *Journal of consumer marketing*.
- Anderson, D. J., & Carmichael, A. (2016). *Essential Kanban condensed*. Blue Hole Press.
- Andreti, J., Zhafira, N. H., Akmal, S. S., & Kumar, S. (2013). The analysis of product, price, place, promotion and service quality on customers' buying decision of Convenience Store: A survey of young adult in Bekasi, West Java, Indonesia. *International Journal of Advances in Management and Economics*, 2(6), 72-78.
- Aracıoğlu, B., Zalluhoğlu, A. E., & Candemir, C. (2013). Measuring and evaluating performance within the strategic management perspective: A study on performance measurement of a seafood company. *Procedia-Social and Behavioral Sciences*, 99, 1026-1034.

- Araújo, A. F., Varela, M. L., Gomes, M. S., Barreto, R. C., and Trojanowska, J. (2018). Development of an Intelligent and Automated System for Lean Industrial Production, Adding Maximum Productivity and Efficiency in the Production Process. In *Advances in Manufacturing* (pp. 131-140). Springer, Cham.
- Armstrong, G., Adam, S., Denize, S., & Kotler, P. (2014). *Principles of marketing*. Pearson Australia.
- Armstrong, J. S., & Overton, T. S. (1977). Estimating nonresponse bias in mail surveys. *Journal of marketing research*, 14(3), 396-402.
- Aziz, S. A., & Mahmood, R. (2011). The relationship between business model and performance of manufacturing small and medium enterprises in Malaysia. *African Journal of Business Management*, 5(22), 8918–8932.
- Babbie, R. (1973). *Survey research methods*: Wadsworth Pub. Co.
- Bahl, S., and Chandra, T. (2018). Impact of Marketing Mix on Consumer Attitude and Purchase intention towards 'Green' Products. *A Journal of research articles in management science and allied areas (refereed)*, 11(1), 1-11.
- Baker, M. J. (2014). *Marketing strategy and management*. Macmillan International Higher Education.
- Baldwin, C. Y. (2017). Return on Invested Capital (ROIC).
- Bamber, C. J., Sharp, J. M., and Hides, M. T. (1999). Factors affecting successful implementation of total productive maintenance: A UK manufacturing case study perspective. *Journal of Quality in Maintenance Engineering*, 5(3), 162-181. doi: 10.1108/13552519910282601
- Barney, J. B. (1991). Firm resources and sustained competitive advantage. *Journal Management*, 17(1), 99-120
- Barney, J. B. (1995). Looking inside for competitive advantage. *Academy of Management Perspectives*, 9(4), 49-61.
- Bartlett, Kenneth R. (2005). Survey research in organizations *Research in organizations: Foundations and methods of inquiry* (pp. 97-113).
- Bearden, W. O. and M. J. Etzel (1982). "Reference Group Influence on Product and Brand Purchase Decisions." *Journal of Consumer Research*, Vol. 9, No. 2: 183-194.
- Belekoukias, I., Garza-Reyes, J.A. and Kumar, V. (2014), "The impact of lean methods and tools on the operational performance of manufacturing

- organizations”, *International Journal of Production Research*, Vol. 52 No. 18, pp. 5346-5366.
- Bernardin, J. (2007). *Human Resource Management* New Delhi: Tata McGraw-Hill.
- Berry, W. D., & Feldman, S. (1985). *Multiple regression in practice*. Beverly Hill CA: SAGE Publications.
- Bhamu, J., Singh Sangwan, K., 2014. Lean manufacturing: literature review and research issues. *International Journal of Operations and Production Management* 34 (7), 876–940.
- Bhasin, S. 2012. Performance of Lean in large organizations. *Journal of Manufacturing Systems* 31(3), 349–357.
- Blaikie, N. (2009). *Designing Social Research: Polity*.
- Bogdan, R., & Taylor, S.J. (1975). *Introduction to qualitative research methods: a phenomenological approach to the social sciences*. New York: Wiley.
- Borden, N. H. (1964). The concept of the marketing mix. *Journal of advertising research*, 4(2), 2-7.
- Borden, K. S., & Abbott, B. B. (2011). *Research design and methods: A process approach* (8th ed.). New York, NY: McGraw-Hill.
- Borges Lopes, R., Freitas, F., & Sousa, I. (2015). Application of lean manufacturing tools in the food and beverage industries. *Journal of technology management & innovation*, 10(3), 120-130.
- Bortolotti, T., & Romano, P. (2012). ‘Lean first, then automate’: a framework for process improvement in pure service companies. A case study. *Production Planning & Control*, 23(7), 513-522.
- Bowling, A. (2001). *Measuring disease.: a review of disease-specific quality of life measurement scales* (Second Edi.). Open University Press Buckingham · Philadelphia.
- Brace, N., Snelgar, R., & Kemp, R. (2012). *SPSS for Psychologists*. Macmillan International Higher Education.
- Braun, M., Briones, I., & Islas, G. (2019). Interlocking directorates, access to credit, and business performance in Chile during early industrialization. *Journal of Business Research*, 105, 381-388.
- Brocke, J. V., & Rosemann, M. (2014). *Handbook on Business Process Management 2: Strategic Alignment, Governance, People and Culture*. Berlin: Springer.

- Brown, S., Squire, B., & Blackmon, K. (2007). The contribution of manufacturing strategy involvement and alignment to world-class manufacturing performance. *International Journal of Operations & Production Management*, 27(3), 282-302.
- Brownhilder, N. (2016). Examining the moderating effect of environmental hostility on the entrepreneurial orientation-performance relationship. *Journal of Economics and Behavioral Studies*, 8(6 (J)), 6-18.
- Burney, S. M. A. (2008). Inductive & deductive research approach. Department of Computer Science, University of Karachi.
- Burton, L. (2007). *How to Approach a Study: Concepts, Hypotheses, and Theoretical Frameworks*.
- Cai, J., & Szeidl, A. (2017). Interfirm relationships and business performance. *The Quarterly journal of economics*, 133(3), 1229-1282.
- Cakmakci, M., & Karasu, M. K. (2007). Set-up time reduction process and integrated predetermined time system MTM-UAS: A study of application in a large size company of automobile industry. *The International Journal of Advanced Manufacturing Technology*, 33(3-4), 334-344.
- Cameron, K. S., and Whetten, D. A. (Eds.). (2013). *Organizational effectiveness: A comparison of multiple models*. Academic Press.
- Camuffo, A., and Gerli, F. (2018). Modeling management behaviors in lean production environments. *International Journal of Operations and Production Management*, 38(2), 403-423.
- Cecilia D., de Guzman. (2016). Marketing Mix and Its Influence on Income, Per Day Customer and Employee Turnover: An Analysis of Selected Food Establishments in Robinson's Place Malolos. *International Journal of Education and Research*, 4(10), 191-200.
- Chan, L. L. M., Shaffer, M. A., & Snape, E. (2004). In search of sustained competitive advantage: The impact of organizational culture, competitive strategy and human resource management practices on firm performance. *The International Journal of Human Resource Management*, 15(1), 17-35.
- Chang, H., Fang, P., & Cho, F. (2013). Customer-Based Performance on Customer Relationship Management: The Role of Customer Relational Information Process. *Diversity, Technology, and Innovation for Operational Competitiveness*, 4-98.

- Chiarini, A. (2014). Sustainable manufacturing-greening processes using specific Lean Production tools: an empirical observation from European motorcycle component manufacturers. *Journal of Cleaner Production*, 85, 226-233.
- Chiarini, A., Baccarani, C., & Mascherpa, V. (2018). Lean production, Toyota Production System and Kaizen philosophy: A conceptual analysis from the perspective of Zen Buddhism. *The TQM Journal*, 30(4), 425-438.
- Choi, B., Poon, S. K., & Davis, J. G. (2008). Effects of knowledge management strategy on organizational performance: A complementarity theory-based approach. *OMEGA - The International Journal of Management Science*, 36, 235 - 251.
- Čiarnienė, R., & Vienažindienė, M. (2012). Lean manufacturing: theory and practice. *Economics and management*, 17(2), 726-732.
- Coakes, S. J., Steed, L. G., Coakes, S. J., & Steed, L. G. (2003). Multiple response and multiple dichotomy analysis. *SPSS: analysis without anguish: Version 11.0 for Windows*, 215-224.
- Cohen, J. (1988). *Statistical Power for the Behavioural Sciences*. Hillsdale, NY: Lawrence Erlbaum.
- Cohen, J. (1992). Statistical power analysis. *Current directions in psychological science*, 1(3), 98-101.
- Collis, J., & Hussey, R. (2013). *Business Research: A Practical Guide for Undergraduate and Postgraduate Students*: Palgrave Macmillan.
- Connelly, L. M. (2008). Pilot studies. *Medsurg Nursing*, 17(6), 411.
- Cooper, R. G., & Kleinschmidt, E. J. (1995). New product performance: keys to success, profitability & cycle time reduction. *Journal of Marketing Management*, 11(4), 315-337.
- Costa, L. B. M., Godinho Filho, M., Fredendall, L. D., & Paredes, F. J. G. (2018). Lean, six sigma and lean six sigma in the food industry: A systematic literature review. *Trends in food science & technology*, 82, 122-133.
- Creswell, J. W. (2014). *A concise introduction to mixed methods research*. Sage Publications.
- Criado-Gomis, A., Iniesta-Bonillo, M. Á., & Cervera-Taulet, A. (2018). Sustainable entrepreneurial orientation within an intrapreneurial context: effects on business performance. *International Entrepreneurship and Management Journal*, 14(2), 295-308.



- Cryer, P. (2000). *The research student's guide to success*: Open University Press.
- Curkovic, S., Vickery, S., Dröge, C., (2000). Quality related action programs: their impact on quality performance and firm performance. *Decision Sciences*, 31(4), 885-902.
- Damodaran, A. (2012). *Investment valuation: Tools and techniques for determining the value of any asset* (Vol. 666). John Wiley & Sons.
- Daniel, C. O. (2018). Effect of Marketing Strategies on Organizational Performance. *International Journal of Business Marketing and Management (IJBMM)*, 3(9), 1-9.
- Danziger, W. L., & Botwinick, J. (1980). Age and sex differences in sensitivity and response bias in a weight discrimination task. *Journal of gerontology*, 35(3), 388-394.
- Dawes, J. (1999). The relationship between subjective and objective company performance measures in market orientation research: further empirical evidence. *Marketing bulletin-department of marketing massey university*, 10, 65-75.
- Dess, G. G., & Robinson, R. B. (1984). Measuring organizational performance in the absence of objective measures: The case of the privately-held firm and conglomerate business unit. *Strategic Management Journal*, 5(3), 265–273.
- De Vaus, David A, & de Vaus, David. (2001). *Research design in social research*: Sage.
- Decoster, J., & Hall, G. P. (2005). Scale Construction Notes. *Construction*, 9(2), 177–204. Retrieved 15/05/2015, from doi:10.1300/J027v09n02\_12
- Department of Economic and Social Affairs Statistics Division, DESA (2008). *The International Standard Industrial Classification of All Economic Activities*.
- Department of Statistics, Malaysia. (2019). Pocket Stats, Quarter 3, 2019. <https://www.dosm.gov.my/v1/>
- Diaz, A., & Vicente, H. (2014). Integration of knowledge management and change management to implement Lean Manufacturing.
- Dillman, D. A. (2007). *Mail and internet surveys: the tailored design method 2007 update with new internet, visual, and mixed-mode guide* (2nd ed.). New Jersey, NJ: Wiley
- Donald, Cooper R, & Schindler, Pamela S. (2010). *Business Research Methods* (11ed.): McGraw-Hill Companies, Inc.

- Dora, M., Kumar, M., & Gellynck, X. (2016). Determinants and barriers to lean implementation in food-processing SMEs—a multiple case analysis. *Production Planning & Control*, 27(1), 1-23.
- Dora, M., Van Goubergen, D., Kumar, M., Molnar, A., & Gellynck, X. (2014). Application of lean practices in small and medium-sized food enterprises. *British Food Journal*, 116(1), 125-141.
- Douglas, F., Amaya, M., Greener, J., Ludbrook, A., Reid, G., Robertson, L., & van Teijlingen, E. (2008). Well men health service pilot's evaluation.
- Drew, J., McCallum, B., & Roggenhofer, S. (2006). Journey to Lean: Making Operational Change Stick. *JOURNAL-OPERATIONAL RESEARCH SOCIETY*, 57(2), 228.
- Dubihlela, J. (2012). *Barriers to and Determinants and Enablers of Market Orientation: Impact on Business Performance for Small and Medium Enterprises in South Africa*. Philosophiae Doctor in Business Management Thesis. North-West University. Vaal Triangle Campus.
- Dzenopoljac, V., Alasadi, R., Zaim, H., & Bontis, N. (2018). Impact of knowledge management processes on business performance: Evidence from Kuwait. *Knowledge and Process Management*, 25(2), 77-87.
- Edgeworth, F. Y. (1881). *Mathematical psychics: An essay on the application of mathematics to the moral sciences* (Vol. 10). Kegan Paul.
- Effah-Kesse, D. (2017). *Implementation of lean in the public sector: investigating the benefits and drawbacks. (A case study of Molde municipality)* (Master's thesis, Høgskolen i Molde-Vitenskapelig høgskole i logistikk).
- Ellison, S., and Snyder, C. (2014). An empirical study of pricing strategies in an online market with high-frequency price information.
- Enginarlar, E. (2003). *Lean buffering in production systems: A quantitative approach*. (Doctoral dissertation). University of Michigan, Ann Arbor, MI.
- Eriksson, A., Holden, R. J., Williamsson, A., and Dellve, L. (2016). A case study of three Swedish hospitals' strategies for implementing lean production. *Old site of Nordic Journal of Working Life Studies*, 6(1), 105-131.
- Europe, A. (2009). The four main approaches. Available on <http://www.alzheimereurope.org/Research/Understanding-dementia-research/Types-of-research/The-four-mainapproaches>.



- Evans, Annabel Ness, & Rooney, Bryan J. (2010). *Methods in Psychological Research*: SAGE Publications.
- Fauzi, N. M., Hashim, N. I., Ab Rahman, M. F., Suraya, W., Hassin, W., & Shahar, W. S. S. (2020). Halal economic: challenges and emerging opportunities in malaysia. *Journal of Islamic Philanthropy & Social Finance (JIPSF)*, 1, 1.
- Field, A. (2009). *Discovering Statistics Using SPSS*: SAGE Publications.
- Fitriah, A. W., Rosdi, S. N., Rosli, M. M., Aziz, Z. A., Ibrahim, W. M. Y. W., Radzi, M. S. N. M., ... and Yaacob, A. A. (2019). The Effects of Marketing Mix on Small Fish Farming Business Performance. *Revista Publicando*, 6(19), 1-16.
- FMM Industry Directory - Food & Beverage (5<sup>th</sup> Edition), (2015). [https://www.fmm.org.my/Article\\_List.aspx?ctl00\\_cpContent\\_rg\\_PubChangePage=1\\_50&ctl00\\_cpContent\\_gHighlightChangePage=7\\_50&ctl00\\_cpContent\\_rg\\_EventChangePage=2\\_50](https://www.fmm.org.my/Article_List.aspx?ctl00_cpContent_rg_PubChangePage=1_50&ctl00_cpContent_gHighlightChangePage=7_50&ctl00_cpContent_rg_EventChangePage=2_50)
- Fowler Jr, F. J. (2013). *Survey research methods*. Sage publications.
- Fullerton, R. R., & Wempe, W. F. (2009). Lean manufacturing, non-financial performance measures, and financial performance. *International Journal of Operations & Production Management*.
- Furlan, A., Dal Pont, G., & Vinelli, A. (2011a). On the complementarity between internal and external just-in-time bundles to build and sustain high performance manufacturing. *International Journal of Production Economics*, 133(2), 489-495.
- Furlan, A., Vinelli, A., & Dal Pont, G. (2011b). Complementarity and lean manufacturing bundles: an empirical analysis. *International Journal of Operations & Production Management*, 31(8), 835-850.
- Gall, Meredith D, Gall, Joyce P, & Borg, Walter R. (2007). *Educational Research: An Introduction*: Pearson/Allyn & Bacon.
- Gauri, Pervez, Gronhaug, Kjell, & Kristianslund, Ivar. (1995). *Research Methods in Business Studies*: Prentice Hall, New York.
- GbolagadeAdewale, A., & Oyewale, I. O. (2013). Impact of Marketing Strategy on Business Performance A Study of Selected Small and Medium Enterprises (Smes) In Oluyole Local Government, Ibadan, Nigeria. *Ibadan, Nigeria*.
- George, D., & Mallery, P. (2002). *SPSS for Windows Step-by-Step: A simple guide and reference*, 11.0 update. Harlow.

- Ghalayini, A. M., & Noble, J. S. (1996). The changing basis of performance measurement. *International journal of operations & production management*, 16(8), 63-80.
- Gharakhani, D., & Mousakhani, M. (2012). Knowledge management capabilities and SMEs' organizational performance. *Journal of Chinese Entrepreneurship*.
- Ghauri, P.N., & Grønhaug, K. (2002). *Research Methods in Business Studies: A Practical Guide*: Financial Times Prentice Hall.
- Ghobakhloo, M., Hong, T.S., (2014). IT investments and business performance improvement: the mediating role of lean manufacturing implementation. *International Journal of Production Research*, 52(18), 5367-5384.
- Gliem, J. a, & Gliem, R. R. (2003). Calculating, Interpreting, and Reporting Cronbach's Alpha Reliability Coefficient for Likert-Type Scales. *2003 Midwest Research to Practice Conference in Adult, Continuing, and Community Education*, (1992), 82–88.
- Goi, C. L. (2009). A review of marketing mix: 4Ps or More? *International journal of marketing studies*, 1(1), 2.
- Gomera, S. W. (2016). An investigation into the relationship between strategic planning and business performance in Small, Micro and Medium Scale Enterprises (SMMEs) (Doctoral dissertation, University of Fort Hare).
- Goncharuk, A. G. (2009). How to make meat business more effective: A case of Ukraine. *British Food Journal*, 111(6), 583-597.
- Gorard, S. (2010). *Quantitative Methods in Educational Research: The Role of Numbers Made Easy*. Bloomsbury Publishing.
- Grant, C., and Osanloo, A. (2014). Understanding, selecting, and integrating a theoretical framework in dissertation research: Creating the blueprint for your "house". *Administrative Issues Journal*, 4(2), 4.
- Grant, R. M. (1991). The resource-based theory of competitive advantage: Implications for strategy formulation. *California Management Review*, 33(3), 134-135.
- Gravetter, F. J., & Wallnau, L. B. (2000). *Statistics for the behavioral sciences* Stamford. CT: Wadsworth.
- Green, H. E. (2014). Use of theoretical and conceptual frameworks in qualitative research. *Nurse Researcher*, 21(6), 34–38.

- Grewal, D., Krishnan, R., Baker, J., & Borin, N. A. (1998). The effect of store name, brand name and price discounts on consumers' evaluations and purchase intentions. *Journal of retailing*, 74(3), 331.
- Gruber, M., Heinemann, F., Brettel, M. and Hungeling, S. (2010). Configurations of resources and capabilities and their performance implications: an exploratory study on technology ventures, *Strategic Management Journal*, Vol. 31 No. 12, pp. 1337-1356.
- Gu, X., Ieromonachou, P., Zhou, L., & Tseng, M. L. (2018). Developing pricing strategy to optimise total profits in an electric vehicle battery closed loop supply chain. *Journal of cleaner production*, 203, 376-385.
- Gumede, S., & Chasomeris, M. (2018). Pricing strategy and tariff structure for a port authority: a case study of South Africa. *Maritime Policy & Management*, 45(6), 756-769.
- Gütter, S. P. (2014). *Lean Practices in Pharmaceutical Manufacturing: An Empirical Investigation* (Doctoral dissertation).
- Hair Jr, J. F., Hult, G. T. M., Ringle, C., & Sarstedt, M. (2017). *A primer on partial least squares structural equation modeling (PLS-SEM)*. Sage publications.
- Hayes, B.E. (1998) *Measuring customer satisfaction: survey design, use and statistical analysis method*. ASQ Quality Press, Wisconsin
- Heale, R., & Noble, H. (2019). Integration of a theoretical framework into your research study.
- Heisig, P., Suraj, O. A., Kianto, A., Kemboi, C., Perez Arrau, G., & Fathi Easa, N. (2016). Knowledge management and business performance: global experts' views on future research needs. *Journal of Knowledge Management*, 20(6), 1169-1198.
- Heymans, B. (2015). Lean manufacturing and the food industry. *Journal of Technology Management and Innovation*, 10(3), 120-30.
- Hiremath, P., Narayanan, S., and Shettar, M. (2018). The Effect of Lean Techniques on Elimination of Waste in Composite Panel Production Using Paired t-test. In *MATEC Web of Conferences* (Vol. 144, p. 05011). EDP Sciences.
- Ho, T. C., Ahmad, N. H., & Ramayah, T. (2016). Competitive capabilities and business performance among manufacturing SMEs: Evidence from an emerging economy, Malaysia. *Journal of Asia-Pacific Business*, 17(1), 37-58.

- Hofer, C., Eroglu, C., and Hofer, A. R. (2012). The effect of lean production on financial performance: The mediating role of inventory leanness. *International Journal of Production Economics*, 138(2), 242-253.
- Hoopes, D. G., & Madsen, T. L. (2008). A capability-based view of competitive heterogeneity. *Industrial and Corporate Change*, 17(3), 393-426.
- Hoopes, D. G., Madsen, T. L., & Walker, G. (2003). Guest editors' introduction to the special issue: why is there a resource-based view? Toward a theory of competitive heterogeneity. *Strategic management journal*, 24(10), 889-902.
- Huang, M. C., Yen, G. F., & Liu, T. C. (2014). Reexamining supply chain integration and the supplier's performance relationships under uncertainty. *Supply Chain Management: An International Journal*.
- Hulley, S. B., Cummings, S. R., Newman, T. B., Browner, W. S., & Grady, D. G. (2013). Designing Cross-Sectional and Cohort Studies. *Designing Clinical Research*, 85.
- Imenda, S. (2014). Is There A Conceptual Difference Between Theoretical and Conceptual Frameworks? *J Soc Sci*, 38(2), 185–195.
- Inman, R. A., & Green, K. W. (2018). Lean and green combine to impact environmental and operational performance. *International Journal of Production Research*, 56(14), 4802-4818.
- Inman, R.A., Sale, R.S., Green, K.W., Whitten, D., (2011). Agile manufacturing: relation to JIT, operational performance and firm performance. *Journal of Operations Management*, 29(4), 343-355.
- ITA, FOOD AND BEVERAGES MARKET REPORT IN MALAYSIA, (2018). [https://www.ice.it/it/sites/default/files/inlinefiles/Nota%20Mercato%20Agroalimentare%20-%20Malesia%20-%20202018\\_0.pdf](https://www.ice.it/it/sites/default/files/inlinefiles/Nota%20Mercato%20Agroalimentare%20-%20Malesia%20-%20202018_0.pdf)
- Izquierdo, C. C., Cillán, J. G., & Gutiérrez, S. S. M. (2005). The impact of customer relationship marketing on the firm performance: a Spanish case. *Journal of Services Marketing*.
- Jabareen, Y. (2009). Building a conceptual framework: philosophy, definitions, and procedure. *International journal of qualitative methods*, 8(4), 49-62.
- Jain, M., and Han, F. (2012). *Identifying the essential factors in the marketing mix design (The case of Personal Protective Equipment)* (Master's thesis).
- Jayapal, P., & Omar, A. (2017). The Role of Value Co-Creation on Brand Image: A Conceptual Framework for the Market Performance of SMEs in Malaysia. In

Handbook of Research on Small and Medium Enterprises in Developing Countries (pp. 185-207). IGI Global.

Johnson, G., Scholes, K., and Whittington, R. (2008). *Exploring corporate strategy: text and cases*. Pearson education.

Jonker, Jan, & Pennink, Bartjan. (2010). *The essence of research methodology: A concise guide for master and PhD students in management science*: Springer Science & Business Media.

Kaijansinkko, R. (2001). Product placement in Integrated Marketing Communications Strategy (Master's Thesis). *Lappeenranta University of technology*.

Kaplan, R. S., & Norton, D. P. (1992). The balanced scorecard-measures that drive performance. *Harvard Business Review*, 70(1), 71-79.

Kariuki, M. B. J. (2011). *Analysis of Market Performance: A Case of 'OMENA' Fish in selected outlets in Kenya*. Sc Thesis in Agricultural and Applied Economics of Egerton University

Kasher, M., Mani, N., Sharma, R., & Zhand, L. (2018). Application of Lean Manufacturing Principles in Optimizing Factory Production. *New Jersey's Governor's School of Engineering and Technology*.

Kaynak, H., (2003). The relationship between total quality management practices and their effects on firm performance. *Journal of Operations Management*, 21(4), 405-435.

Keh, H. T., Nguyen, T. T. M., & Ng, H. P. (2007). The effects of entrepreneurial orientation and marketing information on the performance of SMEs. *Journal of business venturing*, 22(4), 592-611.

Keller, K. L. (1993). "Conceptualizing, measuring, and managing customer-based brand equity." *Journal of Marketing*, Vol. 57, January: 1-22.

Kerlinger, FN, & lee, HB. (2000). *Foundations of behavioral research*: New York: Harcourt College publishers.

Ketokivi, M., & Schroeder, R. (2004). Manufacturing practices, strategic fit and performance: A routine-based view. *International Journal of Operations & Production Management*, 24(2), 171-191.

Kezia, P., Kumar, K. S. & BLN Krishna Sai. (2017). Lean Manufacturing in Food and Beverage Industry. *International Journal of Civil Engineering and Technology*, 8(5).



- Khanchanapong, T., Prajogo, D., Sohal, A. S., Cooper, B. K., Yeung, A. C., & Cheng, T. C. E. (2014). The unique and complementary effects of manufacturing technologies and lean practices on manufacturing operational performance. *International journal of production economics*, 153, 191-203.
- Khine, M.S. (2013). *Application of Structural Equation Modeling in Educational Research and Practice*: Sense Publishers.
- Khusaini, N. S., Jaffar, A., and Noriah, Y. (2014). A Survey on Lean Manufacturing Practices in Malaysian Food and Beverages Industry. In *Applied Mechanics and Materials* (Vol. 564, pp. 632-637). Trans Tech Publications.
- Kline, R. B. (2015). *Principles and Practice of Structural Equation Modeling*. Guilford Publications.
- Klingenberg, B., Timberlake, R., Geurts, T.G., Brown, R.J., (2013). The relationship of operational innovation and financial performance—A critical perspective. *International Journal of Production Economics*, 142(2), 317-323.
- Kotler, P., and Armstrong, G. (2013). *Principles of Marketing* (16th Global Edition).
- Kotler, P., and Keller, K., (2016). *Marketing Management*. 15th Edition. Essex: Pearson.
- Kotrlik, J. W. K. J. W., & Higgins, C. C. H. C. C. (2001). Organizational research: Determining appropriate sample size in survey research appropriate sample size in survey research. *Information technology, learning, and performance journal*, 19(1), 43.
- Krause, D. R., Handfield, R. B., & Tyler, B. B. (2007). The relationships between supplier development, commitment, social capital accumulation and performance improvement. *Journal of operations management*, 25(2), 528-545.
- Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and psychological measurement*, 30(3), 607-610.
- Kucuk, E. (2016). *Lean Manufacturing: Setup Time Reduction in Secondary Wood Manufacturing Facilities in North America* (Doctoral dissertation, Virginia Tech).
- Kumar Chakraborty, R., & Kumar Paul, S. (2011). Study and implementation of lean manufacturing in a garment manufacturing company: Bangladesh perspective. *Journal of Optimization in Industrial Engineering*, (7), 11-22.
- Kurtz, D. L., & Boone, L. E. (2006). *Principles of marketing*. Thomson.

- Kuwu, E.A., Gakure, R.W. and Ngugi, PK. (2014). Effects of Marketing Strategies, Marketing Elements (4ps) and Leadership Styles on the Performance of Small and Medium Enterprises in Nigeria. *International Policy Brief Series Education & Science Journal*. 4(1): 218-236.
- Lai, K, C. 2009. Just-in-Time Logistics. Oxon: Ashgate Publishing Group
- Langat, N. E. L. S. O. N. (2016). Influence of product, price, promotion and place on enterprise project performance: A case of Safaricom enterprise project, UasinGishu County, Kenya. *Unpublished Thesis Submitted to University on Nairobi*.
- Larson, P. D., & Poist, R. F. (2004). Improving response rates to mail surveys: a research note. *Transportation Journal*, 43(4), 67–74.
- Lazim, H. M., and Ramayah, T. (2010). Maintenance strategy in Malaysian manufacturing companies: a total productive maintenance (TPM) approach. *Business Strategy Series*, 11(6), 387-396. doi: 10.1108/17515631011093098
- Lean production.com. 2010. Top 25 Lean Tools. Accessed 12th March 2020. <https://www.leanproduction.com/top-25-lean-tools.html>
- Lee, C.-H., Venkatraman, N., Tanriverdi, H., & Iyer, B. (2010). Complementarity based hyper competition in the software industry: Theory and empirical test, 1990- 2002. *Strategic Management Journal*, 31, 1431-1456.
- Lehtinen, J. (2011). Quality Oriented Services Marketing 2. Department of Business Economics and BusinessLaw, Tampere University, Tampere.
- Liehr, P. & Smith, M. J. (2006). *Frameworks for research: From practice to research*.
- Lim, H. C. (2016). *Quality management practices of food manufacturers: a comparative study between small, medium and large companies in Malaysia* (Doctoral dissertation, Universiti Tun Hussein Onn Malaysia).
- Liu, X.H., GE, Y.H. & Wang, Q. (2014). The effects of TMT interaction on enterprise performance from the perspective of enterprise culture. *African Journal of Business Management*, 8(4), 137-145.
- Longenecker, J., Petty, J., Palich, L & Loy. F. (2013). Small business management: launching and growing entrepreneurial ventures. Stanford: Cengage Learning.
- Luotonen, D., & Hasselström, M. (2009). Subjective and objective performance assessment: Performance pay at Trelleborg Forsheda AB.

- Mackelprang, A.W., Nair, A., (2010). Relationship between just-in-time manufacturing practices and performance: A meta-analytic investigation. *Journal of Operations Management*, 28(4), 283-302.
- Mackenzie, N., & Knipe, S. (2006). Research dilemmas: Paradigms, methods and methodology. *Issues in educational research*, 16(2), 193-205.
- Mahalik, N. P., and Nambiar, A. N. (2010). Trends in food packaging and manufacturing systems and technology. *Trends in Food Science and Technology*, 21(3), 117-128.
- Mahapatra, S., & Mohanty, S. (2007). Lean manufacturing in continuous process industry: an empirical study. *Journal of Scientific and Industrial Research*, 66(1), 19.
- Mahfouz, A., & Arisha, A. (2013, December). Lean distribution assessment using an integrated framework of value stream mapping and simulation. In *Proceedings of the 2013 Winter Simulation Conference: Simulation: Making Decisions in a Complex World* (pp. 3440-3449). IEEE Press.
- Mahmoud, T. O, Ibrahim, S. B., Ali, A. H., and Bledy, A. (2017). The Influence of Green Marketing Mix on Purchase Intention: The Mediation Role of Environmental Knowledge. *International Journal of Scientific and Engineering Research*, 8(9): 1040-1048.
- Mahoney, J. T., & Pandian, J. R. (1992). The resource-based view within the conversation of strategic management. *Strategic Management Journal*, 13(5), 363-380.
- Maina, M. N. (2016). *The Effectiveness of Marketing Mix Strategies on Performance of Kenol Kobil Limited* (Doctoral dissertation, University of Nairobi).
- Makadok, R. (2001). Toward a synthesis of the resource-based and dynamic-capability views of rent creation. *Strategic Management Journal*, 22, 387-401.
- Malhotra, N. K., & Birks, D. F. (2008). *Marketing research: an applied approach* (3rd ed.). Trans-Atlantic Publications, Inc.
- Manzouri, M., Ab Rahman, M. N., Saibani, N., & Zain, C. R. C. M. (2013). Lean supply chain practices in the Halal food. *International Journal of Lean Six sig*.
- Mark, J., & Nwaiwu, J. N. (2015). Impact of political environment on business performance of multinational companies in Nigeria. *African Research Review*, 9(3), 1-10.



- Marodin, G. A. (2017). *The moderating effect of Lean Supply Chain Management on the impact of Lean Shop Floor Practices on Quality and Inventory Turnover* (Doctoral dissertation, Universidade Federal de São Carlos).
- Marques, A., Lacerda, D. P., Camargo, L. F. R., and Teixeira, R. (2014). Exploring the relationship between marketing and operations: Neural network analysis of marketing decision impacts on delivery performance. *International Journal of Production Economics*, 153, 178-190.
- Mason, J. (1996). *Qualitative researching*: Sage.
- Maziriri, E. T. (2018). *The Impact of green marketing practices on competitive advantage and business performance among manufacturing small and medium enterprises (SMEs) in South Africa* (Doctoral dissertation).
- McCarthy, E. J. (1960). Basic marketing: a managerial approach. Homewood, Illinois: Richard D. Irwin. *Inc. McCarthy Basic Marketing: A Managerial Approach 1960*.
- McNeal, J. U., & Ji, M. F. (2003). Children's visual memory of packaging. *Journal of Consumer Marketing*.
- Melton, T. (2005). The benefits of lean manufacturing: what lean thinking has to offer the process industries. *Chemical engineering research and design*, 83(6), 662-673.
- Merchant, K. A., & Van der Stede, W. A. (2007). *Management control systems: performance measurement, evaluation and incentives*. Pearson Education.
- Meyers, L.S., Gamst, G., & Guarino, A.J. (2006). *Applied Multivariate Research: Design and Interpretation*: SAGE Publications.
- MIDA, Malaysian Investment Development Authority. (2018). Investment Performance Report 2018. [https://www.mida.gov.my/home/administrator/system\\_files/modules/photo/uploads/20190315105335\\_MIDA%20IPR%202018.pdf](https://www.mida.gov.my/home/administrator/system_files/modules/photo/uploads/20190315105335_MIDA%20IPR%202018.pdf)
- Milgrom, P., & Roberts, J. (1990). The economics of modern manufacturing: Technology, strategy, and organization. *The American Economic Review*, 80(3), 511-528.
- Milgrom, P., & Roberts, J. (1995). Complementarities and fit strategy, structure, and organizational change in manufacturing. *Journal of Accounting and Economics*, 19, 179-208.

- Mohamed, Z., Abd Kadir, Z., & Raof, N. A. A. (2018). Malaysia Industry Masterplans (IMPs) and the Focus on the Nation Technology and Innovation Development. *Journal of Science, Technology and Innovation Policy*, 4(2), 9.
- Mohanty, S., & Nandi, T. K. (2010). Globalization of SMEs: in depth analysis of impact of internationalization of firms. *Management*, 18, 509-533.
- Monden, Y. (2011). *Toyota production system: an integrated approach to just-in-time*. Productivity Press.
- Moyano-Fuentes, J., Martínez-Jurado, P. J., Maqueira-Marín, J. M., & Bruque-Cámara, S. (2012). Impact of use of information technology on lean production adoption: evidence from the automotive industry. *International Journal of Technology Management*, 57(1/2/3), 132-148.
- Mukwarami, S., Nyirenda, G., & Fakoya, M. B. (2017). Governance of corporate social responsibility and return on assets in the South African mining firms. *African Journal of Public Affairs*, 9(5), 136-153.
- Mustapha, B. (2017). Effects of Marketing Mix Strategy on Performance of Small-Scale Businesses in Maiduguri Metropolitan, Bomo State Nigeria. *Journal of Marketing and Consumer Research*. 31: 1-6.
- Mutua, M., Ngugi, P. and Odhiambo, R. (2018). Influence of Lean Production Practices on Performance of Large Manufacturing Firms in Kenya. *Journal of International Business, Innovation and Strategic Management*, 1(8), 58 – 76
- Nahmias, S. (2009). *Production and Operations Analysis*. 6th ed. McGraw-Hill Irwin, New York. ISBN 978-007-126370-2.
- Nardi, Peter M. (2003). *Doing Survey Research—A Guide to Quantitative Methods*. Boston, Peasron Education: Inc.
- Nawanir, G. (2016). *The effect of lean manufacturing on operations performance and business performance in manufacturing companies in Indonesia* (Doctoral dissertation, Universiti Utara Malaysia).
- Nawanir, G., Lim, K.T., Othman, S.-N., (2013). Impact of lean practices on operations performance and business performance: Some evidence from Indonesian manufacturing companies. *Journal of Manufacturing Technology Management* 24 (7), 1019–1050.
- Neely, A., Mills, J., Platts, K., Richards, H., Gregory, M., Bourne, M., & Kennerley, M. (2000). Performance measurement system design: Developing and testing a

- process-based approach. *International Journal of Operations & Production Management*, 20(10), 1119-1145.
- Negrão, L. L. L., Lopes de Sousa Jabbour, A. B., Latan, H., Godinho Filho, M., Chiappetta Jabbour, C. J., & Ganga, G. M. D. (2019). Lean manufacturing and business performance: testing the S-curve theory. *Production Planning & Control*, 1-15.
- Netland, T. H. (2016). Critical success factors for implementing lean production: the effect of contingencies. *International Journal of Production Research*, 54(8), 2433-2448.
- Netland, T. H., Schloetzer, J., and Ferdows, K. (2015), "Implementing lean: The effect of takt time", Proceedings of EurOMA 2015, Nèuchatel, Switzerland.
- Nguyen, B., Mickiewicz, T., & Du, J. (2018). Local governance and business performance in Vietnam: the transaction costs' perspective. *Regional Studies*, 52(4), 542-557.
- Noda, T. (2015). Integration of lean operation and pricing strategy in retail. *Journal of Marketing Development and Competitiveness*, 9(1), 50.
- Nunnally, J. C. (1978). *Psychometric Theory: 2d Ed.* McGraw-Hill.
- O'Casey, A., & Heirati, N. (2015). Mastering the complementarity between marketing mix and customer-focused capabilities to enhance new product performance. *Journal of Business & Industrial Marketing*, 30(1), 60-71.
- Ocloo, C. E., & Tsetse, E. K. (2013). Customer retention in the Ghanaian mobile telecommunication industry. *European journal of business and social sciences*, 2(7), 136-160.
- Ohno, T. (1988), *Toyota Production System: Beyond Large-scale Production*, CRC Press, New York, NY.
- Olson, J. C., & Jacoby, J. (1972). Cue utilization in the quality perception process. *ACR Special Volumes*.
- Olutunla, G.T. and Obamuyi, T.M. (2008). An empirical analysis of factors associated with the profitability of Small & medium enterprises in Nigeria. *African Journal Business Management*. 2(11): 195-200.
- Oppenheim, A. N. (1992). Questionnaire design. *Interviewing and Attitude measurement*, 24.

- Othman, N. A. (2012). *A Study on Lean Manufacturing Implementation at Metal Products Industry for Small Medium Enterprises (SMEs)* (Doctoral dissertation, UMP).
- Pallant, J. (2010). *SPSS Survival Manual: A step by step guide to data analysis using SPSS*: Allen & Unwin Australia.
- Pallant, J. (2020). *SPSS survival manual: A step by step guide to data analysis using IBM SPSS*. Routledge.
- Palmer, A. (2012). *Introduction to marketing: theory and practice*. Oxford University Press.
- Perreault, W. D. J., Cannon, oseph P., and McCarthy E. Jerome. (2012). *Essentials of Marketing*. McGraw-Hill/Irwin.
- Petroshius, S. M., & Monroe, K. B. (1987). Effect of product-line pricing characteristics on product evaluations. *Journal of Consumer Research*, 13(4), 511-519.
- Piercy, N. C., and Rich, N. (2004). Strategic marketing and operations relationships: the case of the lean enterprise. *Journal of Strategic Marketing*, 12(3), 145-161.
- Piercy, N., and Rich, N. (2015). The relationship between lean operations and sustainable operations. *International Journal of Operations and Production Management*, 35(2), 282-315.
- Poksinska, B., and Swartling, D. (2018). From successful to sustainable Lean production—the case of a Lean Prize Award Winner. *Total Quality Management and Business Excellence*, 1-16.
- Pomoni, C. (2011). *The Importance of Product Uniqueness in Marketing*.
- Pooe, D., Mafini, C., & Loury-Okoumba, V. W. (2015). The influence of information sharing, supplier trust and supplier synergy on supplier performance: The case of small and medium enterprises. *Journal of Transport and Supply Chain Management*, 9(1), 1-11.
- Porter, M. E. (1985). *Competitive advantage: Creating and sustaining superior performance*. New York, NY: The Free Press.
- Porter, M. E. (1991). Towards a dynamic theory of strategy. *Strategic Management Journal*, 12(Special Issue), 95-117.
- Porter, M. E. (1994). Competitive strategy revisited: A view from 1990s. In P. P. Duffi (Ed.), *The Relevance of a Decade* (pp. 243-285). Cambridge, MA: Harvard Business School Press.

- Porter, M. E. (2008). The five competitive forces that shape strategy. *Harvard business review*, 86(1), 25-40.
- Priem, R. L. (2007). A consumer perspective on value creation. *Academy of Management Review*, 32(1), 219-235.
- Priem, R. L., & Butler, J. E. (2001). Is the resource-based "view" a useful perspective for strategic management research? *The Academy of Management Review*, 26(1), 22-40.
- Proboyo, A., & Kusuma, B. I. (2019). The Impact of Product Attributes, Price, Place, Advertising, and Sales Promotion: A Case of Kids Shampoo in Indonesia. *Petra International Journal of Business Studies*, 2(2), 59-70.
- Psomas, E., Antony, J., & Bouranta, N. (2018). Assessing lean adoption in food SMEs: evidence from Greece. *International Journal of Quality & Reliability Management*.
- Punch, Keith F. (2013). *Introduction to social research: Quantitative and qualitative approaches*: Sage.
- Rahman, A. (2016). Exports of processed food to grow further in 2016: Matrade. Ministry of International Trade and Industry (MITI), Kuala Lumpur, Malaysia.
- Rahman, S., Laosirihongthong, T., & Sohal, A. S. (2010). Impact of lean strategy on operational performance: a study of Thai manufacturing companies. *Journal of manufacturing technology management*, 21(7), 839-852.
- Ramani, G., & Kumar, V. (2008). Interaction orientation and firm performance. *Journal of marketing*, 72(1), 27-45.
- Ramayah, T., Sulaiman, M., Jantan, M., & Ng, F. C. (2004). Organizational learning, proprietary technology and manufacturing performance: A glimpse from the Malaysian manufacturing firms. *International Journal of Innovation and Incubation*, 1(1), 63-90.
- Rayal, S.J. and Kant, R. (2017), "Study on lean six sigma frameworks: a critical literature review", *International Journal of Lean Six Sigma*, Vol. 8 No. 3, pp. 275-334.
- Reichhart, A., and Holweg, M. (2007). Lean distribution: concepts, contributions, conflicts. *International journal of production research*, 45(16), 3699-3722.
- Reyes, J., Morales, L., Aldas, D., Quilligana, A., Toasa, R., & Reyes, R. (2018, October). Applying Lean Manufacturing Techniques to Distribution Requirements Planning in Ecuadorian Flour Industry. In *2018 Congreso*



*Internacional de Innovación y Tendencias en Ingeniería (CONIITI)* (pp. 1-5). IEEE.

- Robinson, L. (Ed.). (2014). *Proceedings of the 2009 Academy of Marketing Science (ams) Annual Conference*. Berlin: Springer
- Ross, S. A., Westerfield, R., & Jordan, B. D. (2003). *Student problem manual for use with Fundamentals of corporate finance*. Irwin Professional Pub.
- Rossi, P. H., Wright, J. D., & Anderson, A. B. (Eds.). (2013). *Handbook of Survey Research*. Academic Press.
- Sahoo, S., and Yadav, S. (2018). Lean production practices and bundles: a comparative analysis. *International Journal of Lean Six Sigma*, 9(3), 374-398.
- Saleeshya, P., Raghuram, P., & Vamsi, N. (2012). Lean manufacturing practices in textile industries-a case study. *International Journal of Collaborative Enterprise*, 3(1), 18-37.
- Salkind, N. J. (1997). Exploring research (3 rd.). Bartlett, JE, Kotrlik, JW, and Higgins, CC (2001). "Organizational Research: Determining Appropriate sample Size in Survey Research". *Information Technology, Learning, and Performance Journal*, 19(1), 43-50.
- Sampaio, C. A., Hernández-Mogollón, J. M., & Rodrigues, R. G. (2019). Assessing the relationship between market orientation and business performance in the hotel industry—the mediating role of service quality. *Journal of Knowledge Management*, 23(4), 644-663.
- Sánchez-Rodríguez, C., Hemsworth, D., & Martínez-Lorente, Á. R. (2005). The effect of supplier development initiatives on purchasing performance: a structural model. *Supply chain management: an international journal*.
- Sandada, M., Poee, D., & Dhurup, M. (2014). Strategic planning and its relationship with business performance among small and medium enterprises in South Africa. *International Business & Economics Research Journal (IBER)*, 13(3), 659-670.
- Sari, L. A., & Hutagaol, Y. R. (2009). Debt to equity ratio, degree of operating leverage stock beta and stock returns of food and beverages companies on the Indonesian stock exchange. *Journal of Applied Finance & Accounting*, 2(1), 1-12.
- Saunders, M., Lewis, P., Thornhill, A. (2016). *Research Methods for Business Students* (Seventh ed). Italy.

- Sax, L. J., Gilmartin, S. K., & Bryant, A. N. (2003). Assessing response rates and nonresponse bias in web and paper surveys. *Research in higher education, 44*(4), 409-432.
- Scheuren, F. (2004). What is a Survey? Alexandria, VA. American Statistical Association.
- Schneider, Benjamin, Ashworth, Steven D, Higgs, A Catherine, & Carr, Linda. (1996). Design, validity, and use of strategically focused employee attitude surveys. *Personnel Psychology, 49*(3), 695-705.
- Schriesheim, C. A., & Hill, K. D. (1981). Controlling Acquiescence Response Bias by Item Reversals: The Effect on Questionnaire Validity. *Educational and Psychological Measurement, 41*(4), 1101-1114.
- Schroeder, R. G., Bates, K. A., & Junttila, M. A. (2002). A resource-based view of manufacturing strategy and the relationship to manufacturing performance. *Strategic Management Journal, 23*, 105-117.
- Sekaran, U., & Bougie, R. (2016). *Research methods for business: A skill building approach*. John Wiley & Sons.
- Sekran, U. (2003). *Research Methodsfor B usiness: A skill Building Approach*, 4th, John Wiely and Sons. *Inc. USA*.
- Shad, M. K., Lai, F. W., Fatt, C. L., Klemeš, J. J., & Bokhari, A. (2019). Integrating sustainability reporting into enterprise risk management and its relationship with business performance: A conceptual framework. *Journal of cleaner production, 208*, 415-425.
- Shah, R., and Ward, P. T. (2007). Defining and developing measures of lean production. *Journal of operations management, 25*(4), 785-805.
- Shapiro, B. P., (1977). Can marketing and manufacturing coexist? *Harv. Bus. Rev.* 55, 104–114.
- Sheehan, N. T., & Foss, N. J. (2007). Enhancing the prescriptiveness of the resource-based view through Potterian activity analysis. *Management Decision, 45*(3), 450-461.
- Sheehan, N. T., & Foss, N. J. (2009). Exploring the roots of Porter' s activity-based view. *Journal of Strategy and Management, 2*(3), 240-260.



- Shehu, A. M., & Mahmood, R. (2014). Influence of entrepreneurial orientation and business environment on small and medium firm performance: a pls approach. *Advances in Management and Applied Economics*, 4(4), 101.
- Sije, A., and Oloko, M. (2013). Penetration pricing strategy and performance of small and medium enterprises in Kenya. *European Journal of Business and Social Sciences*, 2(9), 114-123.
- Singh, M. (2012). Marketing mix of 4P's for competitive advantage. *IOSR Journal of Business and Management*, 3(6), 40-45.
- Sinha, G. (2012). Financial Statements Analysis. New Delhi. PHI learning private limited.
- Siong, B. C., and Eng, C. K. (2018). Implementing Quick Response Manufacturing to Improve Delivery Performance in an ETO Company. *International Journal of Engineering and Technology*, 7(2.28), 38-46.
- Sivo, S. A., Saunders, C., Chang, Q., & Jiang, J. J. (2006). How low should you go? Low response rates and the validity of inference in IS questionnaire research. *Journal of the Association for Information Systems*, 7(1), 17.
- SME Corporation Malaysia, SME Corp (2019). *Guideline for New SME definition*. <http://www.smecorp.gov.my/index.php/en/policies/2015-12-21-09-09-49/sme-definition>
- Snyder, K., Ingelsson, P., and Bäckström, I. (2016). Enhancing the study of Lean transformation through organizational culture analysis. *International Journal of Quality and Service Sciences*, 8(3), 395-411.
- Soewartini, S., Effendi, N., & Kaltum, U. (2017). Brand equity and competitive advantage-based market strategy and marketing mix strategy to improve marketing performance in the bottled water business. *South East Asia Journal of Contemporary Business, Economics and Law*, 12(2), 38-47.
- Statista Inc. market directory: food and beverages: worldwide. <https://www.statista.com/outlook/253/100/food-beverages/worldwide> Accessed December 23th 2019.
- Stephen Nelson, M. B. A. (2019). QuickBooks 2015 all-in-one for dummies.
- Stone, K.B., 2013. Four decades of lean: a systematic literature review. *International Journal of Lean Six Sigma* 3 (2), 112-132.
- Sudman, S. y Bradburn, N. (1983). Asking questions: a practical guide to questionnaire design.

- Tabachnick, BG, & Fidell, LS. (2007). Multivariate analysis of variance and covariance. *Using multivariate statistics*, 3, 402-407.
- Tamene, E. H. (2016). Theorizing conceptual framework. *Asian Journal of Educational Research Vol*, 4(2).
- Tang, C.S., (2010) A review of marketing operations interface models: from coexistence to coordination and collaboration. *Int. J. Prod. Econ.* 125, 22–40.
- Taylor, S. J., Bogdan, R., and Devault, M. (2015). *Introduction to Qualitative Research Methods* (4th Edition ed.). Wiley.
- Toppo, L., & Prusty, T. (2012). From performance appraisal to performance management. *Journal of Business and Management*, 3(5), 1-6.
- Tortorella, G., Giglio, R., and Van Dun, D. H. (2018, June). Industry 4.0 as a moderator on the relationship between lean and operational performance. In 25th International Annual EurOMA Conference: To serve, to produce and to servitize in the era of networks, big data and analytics.
- Trochim, W. M. K. (2006). Deduction & induction. *Research Methods Knowledge Base*. The web center for social research methods.
- Uddin, R., Bose, T. K., & Yousuf, S. (2014). Entrepreneurial orientation (EO) and performance of business in Khulna City, Bangladesh. *Journal of Small Business & Entrepreneurship*, 27(4), 343-352.
- Uhrin, Á., Bruque-Cámara, S., and Moyano-Fuentes, J. (2017). Lean production, workforce development and operational performance. *Management Decision*, 55(1), 103-118.
- Underwood, R. L. (2003). The communicative power of product packaging: creating brand identity via lived and mediated experience. *Journal of marketing theory and practice*, 11(1), 62-76.
- USDA/FAS, Annual 2018 Retail Foods Malaysia, (2018). [https://apps.fas.usda.gov/newgainapi/api/report/downloadreportbyfilename?filename=Retail%20Foods\\_Kuala%20Lumpur\\_Malaysia\\_6-29-2018.pdf](https://apps.fas.usda.gov/newgainapi/api/report/downloadreportbyfilename?filename=Retail%20Foods_Kuala%20Lumpur_Malaysia_6-29-2018.pdf)
- Vij, S., & Bedi, H. S. (2016). Are subjective business performance measures justified? *International Journal of Productivity and Performance Management*, 65(5), 603-621.
- Walker, J., & Maddan, S. (2009). Factor analysis, path analysis, and structural equation modelling. *Statistics in Criminology and Criminal Justice: Analysis and Interpretation*, 325–350.

- Wanyi, M. F., and Nyagindi, J. (2016). Effects of managing the extended marketing mix on organization performance of parastatals in Nairobi. *European Journal of Business and Strategic Management*, 1(2), 115-130.
- Weber, R. R. (2003). *Pricing communication networks: economics, technology, and modelling*. Wiley.
- Wernerfelt, B. (1984). A resource-based view of the firm. *Strategic Management Journal*, 5(2), 171-180.
- Wheelen, T. L., Hunger, J. D., Hoffman, A. N., & Bamford, C. E. (2017). *Strategic management and business policy* (p. 55). Boston, MA: Pearson.
- Winter, S. G. (2000). The satisficing principle in capability learning. *Strategic Management Journal*, 21, 981-996.
- Winter, S. G. (2003). Understanding dynamic capabilities. *Strategic Management Journal*, 24(10), 991-995
- Woh, P. Y., Thong, K. L., Behnke, J. M., Lewis, J. W., & Zain, S. N. M. (2016). Evaluation of basic knowledge on food safety and food handling practices amongst migrant food handlers in Peninsular Malaysia. *Food Control*, 70, 64-73.
- Woiceshyn, J., & Daellenbach, U. (2018). Evaluating inductive vs deductive research in management studies: Implications for authors, editors, and reviewers. *Qualitative Research in Organizations and Management: An International Journal*, 13(2), 183-195.
- Worley, J.M., and Doolen T.L. 2006. The role of communication and management support in a Lean manufacturing implementation. *Management Decision* [online] 44, (2) 228-245.
- Worster, W. T. (2013). *The inductive and deductive methods in customary international law analysis: traditional and modern approaches*.
- Wu, Z., Choi, T. Y., & Rungtusanatham, M. J. (2010). Supplier–supplier relationships in buyer–supplier–supplier triads: Implications for supplier performance. *Journal of Operations Management*, 28(2), 115-123.
- Yalo, M. I., Enimola, D. J., & Nafiu, A. T. (2019). Effects of Marketing Strategies on the Performance of Small and Medium-Scale Enterprises in Kogi State. *Nigeria: Kogi State University*.

- Yang, M.G., Hong, P., Modi, S.B., (2011). Impact of lean manufacturing and environmental management on FB: and empirical study of manufacturing firms. *International Journal of Production Economics*, 129 (2), 251-261.
- Yilmaz, C., Sezen, B., & Kabadayı, E. T. (2004). Supplier fairness as a mediating factor in the supplier performance–reseller satisfaction relationship. *Journal of Business Research*, 57(8), 854-863.
- Yousaf, Z., & Majid, A. (2018). Organizational network and strategic business performance: do organizational flexibility and entrepreneurial orientation really matter? *Journal of Organizational Change Management*, 31(2), 268-285.
- Zahra, S. A., & Das, S. R. (1993). Building competitive advantage on manufacturing resources. *Long Range Planning*, 26(2), 90-100.
- Zainal, N. N., Hassam, S. F., Shaharudin, M. R., Akbar, J., & Mustafa, M. A. (2018). Contributing Factors of Production Performance in the Food Processing Industry. *Int. J Sup. Chain. Mgt Vol*, 7(6), 221.
- Zikmund, W. G., Babin, B. J., Carr, J. C., & Griffin, M. (2010). *Business research methods (8th ed.)*. Canada: Nelson Education Ltd.
- Zineldin, M., & Philipson, S. (2007). Kotler and Borden are not dead: myth of relationship marketing and truth of the 4Ps. *Journal of consumer marketing*.
- Zulkiffli, S. N. A. (2014). Business performance for SMEs: Subjective or objective measures. *Review of Integrative Business and Economics Research*, 3(1), 371-381
- Zulkiffli, S. N. 'Atikah, & Perera, N. (2011). A literature analysis on business performance for SMEs: Subjective or objective measures? *Society of Interdisciplinary Business Research (SIBR)*, 1–9.