

Management Practices By Agricultural Based Small Scale Industry To Avail Business Challenge In Disruptive Innovation Era

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Abstract: Lean Management Practices (LMP) measures the effort to deliver high-quality products by eliminating all sorts of production waste. Few studies have investigated the adoption of lean management in small business. Zalacca/ snake fruits and cassava are among the featured product of Banjarnegara district. The agricultural products can easily be found in most Banjarnegara landscape. The purpose of the study are four folds: first, to find out SMEs motives of indulging in agribusiness. Second, to uncover the perceived benefits and hindrances associated with lean management adoption. Third, to identify the type of quality cost incurred by zalacca farmers and SMEs. Fourth to find out the most feasible forms of lean practices by farmers and SMEs considering the resources constraint. Authors used mixed methods, to collect information from sample, which consist of farmers, and small businesses producing Snake fruits derivatives. Researchers used extensive questionnaires and in-depth interview in data collection. The result indicates among the motives involved in agribusinesses are farming is the main profession, to preserve the zalacca tress as the main fruits of Banjarnegara. Farmers and SMEs obtained benefits when implementing lean management practices in the form of low production costs, minimum waste, low lead-time. There were 15 types of problems encountered by farmers and SMEs while implementing lean management which categorized into four types of quality costs. The most feasible lean management practices for SMEs producing zalacca and cassava derivatives were supply chain, just in time, small lot size, employee involvement, training teamwork and 5S.

Index-Term: the cost of quality, Zalacca (snake fruit), cassava, small businesses, Indonesia

1. INTRODUCTION

Increasing dominance of small businesses (SMEs) in the global economy works parallel with their contribution to the massive industrial waste (Abu, Gholami, Saman, Zakuan, & Streimikiene, 2019; Caldera, Desha, & Dawes, 2019; Hari Adi & Adawiyah, 2018). Hence, their business strategy should align with business reality and the waste prevention management (Adawiyah, Pramuka, Najmudin, & Jati, 2015; Hari Adi & Adawiyah, 2018; Karlsson & Åhlström, 1996; Lawrence, Collins, Pavlovich, & Arunachalam, 2006; Neto, Leite, Shibus, & Lucato, 2017). In addition, the prominent role of foreign products that offered lower cost have contagious effect on local products. A large number of Chinese firms in Asia, Europe and the United States have taken over market share from stronger producers. The distributors have ceased to be in the same field as consumers. Therefore, these businesses must look forward to developing the existing system and fulfilling customer's needs in order for SMEs to succeed in difficult times. One of the best practice strategies for all sectors is the Lean Management. Lean management is a prevalent business practices in manufacturing sector. It describes a series of production processes tailored to enhance business performance (Karlsson & Åhlström, 1996; Vorkapić, Radovanović, Čočkalović, & Đorđević, 2017). Lean thinking has evolved as a focused method for increasing brand satisfaction by reducing cost-adding behaviors and enhancing client effectiveness (Womack & Jones, 1997). Significant and unparalleled development has occurred over the years,

2014). A number of leading authors have investigated the adoption of various lean instruments over time, and they are considered successful in a wide range of industries including agricultural sector (Dora, Van Goubergen, Kumar, Molnar, & Gellynck, 2014; Satolo Eduardo, 2017; Savić, Vasiljević, & Đorđević, 2014). Agribusiness has different market conditions, because it deals directly with high-perishability, demand and consumption-induced, raw materials and finished goods along with continuous performance control and quality assurance. (Gunderson, Boehlje, Neves, & Sonka, 2014; Satolo Eduardo, 2017). Farm-based small businesses were still in the infancy stage in business though and may not mature enough in organizational management (D'Amato, Veijonaho, & Toppinen, 2018). Lean Manufacturing is an emerging production management thought, particularly for the Indonesian small-scale agricultural industry. The management model improves the quality of production by eliminating waste to remain competitive in the market. The suggestion of adoption of Lean Manufacturing was sadly rejected by most SMEs (Bhamu & Singh Sangwan, 2014). Some factors attributed to the negative stand were: lack of tangible benefits, excessive cost in the early adoption phase (Bhamu & Singh Sangwan, 2014); risk of eliminating non-value added jobs (Khaba & Bhar, 2018); insufficient internal culture support for overcoming fears (Coetzee, Van Dyk, & van der Merwe, 2018); the lack of support from governments, which has proven to be one important factor in effectively adopting lean businesses in small and medium-sized companies (Thanki & Thakkar, 2018) and, above all, lack of awareness and learning (Pearce, Pons, & Neitzert, 2018). Substantial researchers have confirmed the contribution of Lean Manufacturing toward business success in developed countries (Abu et al., 2019) as the practice is more popular in countries with leading economy. In the meantime, little efforts taken to investigate Lean Management implementation in developing countries (Abu et al., 2019; Adawiyah et al., 2015; Amoako-Gyampah & Gargeya, 2001; Nawanir, Kong Teong, & Norezam

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Othman, 2013). Likewise, most studies discuss the adoption of lean management by large manufacturing firms with limited documented evidence of its adoption by the smaller one (Saad et al., 2006). The issue of disruptive innovation has left no choices to small business but to adopt lean management. With limited resources SMEs has to avail the business challenge by providing value-added products and services to the market. Despite the influences of small-scale lean production in agriculture are encouraging (Satolo Eduardo, 2017), very few agribusiness firms in Indonesia have applied lean practices. Indonesia has enormous and profuse fertile soils that enable the country to a wide variety of tropical agricultural products. One of the Indonesian native tropical fruit is Zalacca (snake fruit). As a growing natural gem of Indonesia, Zalacca is scaly like a snake, sharp like a cactus, with a sweet taste, and incredibly juicy. The fruits grow massively in Banjarnegara district Central Java Indonesia. Zalacca is one of the featured product of Banjarnegara district and therefore provides income for the majority of farmers living in the area. Plants that have the Latin name *Manihot esculenta* or more commonly known as cassava, is a food source that has a high energy and carbohydrate content. Cassava is another featured product of Banjarnegara just like the snake fruites. Therefore, cassava is a staple food in Indonesia. This is what drives the creation of a new cassava processed product, modified cassava flour. Despite its positive contribution, the product's life cycle is short. It only remains fresh for approximately five days after picking/ harvest. To minimize losses, because of rotten fruits, farmers should process the products into value-added derivative products such as pickles, crackers, and pie. The farmers should strive for an improved level of process capability to reduce wastes in order to generate a sufficient margin and sustain in the market. Cost of quality is the cost of the poor product or service quality such as the cost of repair, rework, scrap, service calls, warranty, and claims. Low cost of quality leads to improved financial performance and higher customer satisfaction. A past study indicates that factors such as organizational size, the degree of automation, and top managements' commitment determine the decision whether to adopt the right form of the quality management system (Trienekens & Zuurbier, 2008). Small businesses face difficulties in determining the appropriate quality management system due to limited resources, lower competencies and diseconomies of scale (Antony, Kumar, & Labib, 2008). To remain competitive in the global market, SMEs need to improve quality management by adopting the proper way to ensures quality improvement along with cost reduction. The objective of this study is to diagnose the status of the quality management system adopted by Zalacca and cassava farmers, what motivates and hinders the successful implementation.

2. LITERATURE REVIEW AND HYPOTHESES

Lean is a management approach that aims to increase sales through efficiency by eliminating production waste (Womack, Womack, Jones, & Roos, 1990). Lean thinking has grown into a popular business practice for SMEs, resolving the necessity of efficiency in production and the elimination of waste (Caldera et al., 2019). Costs of quality drive organizational performance as they contribute

significantly to a company's total costs. A company which overlooks quality faces a market bankruptcy possibility. Quality management therefore becomes the required factors for all types of companies regardless of their scale (Pearce et al., 2018). Customers require high-quality inspection systems to benefit from healthy food at a lower cost. Waste is described in the lean philosophy as everything that absorbs resources without adding value to the product or service. The goal of waste reduction needs to be done in the right place and at the right time (Womack & Jones, 1997). There are several forms of production waste including: transport, storage, movement, waiting, over-production, over-processing, reworking and unutilized human potential (Acharyaa, 2011; Drew, McCallum, & Roggenhofer, 2006). Systemic lean production by SMEs may bring enormous benefits like process improvement, cycle time diminution and excellent customer response (Pearce et al., 2018). SMEs ought to enforce viable and resource-driven practices that they govern. So they really need to concentrate far more on the domestic aspects, such as 5S, the value ring, preventive maintenance and staff participation, which allow less financial investment in slight operations (Lee, 2004).

3. RESEARCH METHOD

This study is exploratory in nature and employed a mixed method approach. The study attempts to explore the cost of quality incurred by SMEs producing Zalacca crackers and modified cassava flours. Researchers used extensive questionnaires and in-depth interview in data collection. The researchers and the informants actively cooperate to actively involved in finding a solution on a particular issue (Coghlan & Brannick, 2014). Data obtained during the interview shall be continuously compared to the literature review. The next step is coding in order to validate the relationships within the data, and finally, during themes, the agenda becomes more deliberate in order integrate the findings within the categories to achieve data saturation (Corbin, 1942). Data saturation refers to the stage when the data collected in the research is now redundant (Bogdan & Biklen, 2007). This is necessary to ensure that enough data has been collected to reflect the perspectives of the research participants (Kolb, 2012). Data analysis in qualitative research deals with words, and the meanings implied by them (Huberman & Miles, 2002). The informant consists of snake fruit farmers, the local government and suppliers. The result was analyzed using context analysis, simultaneous and concurrent data, alongside constant comparison methods.

4. RESULT AND DISCUSSION

After collecting data, the result of the study reveals information concerning the motivation of farmers and SMEs in conducting the businesses, and they perceive benefits and barriers while adopting Lean Management practices and finally the category of quality costs incurred by SMEs producing foods from Zalacca and modified cassava flours.

4.1 AGRIBUSINESS MOTIVES.

One of the main factors that inhibits the growth of Zalacca fruits and modified cassava flour business in Banjarnegara

is the low motivation of farmers to regenerate the old trees. Not all farmers have their own land some farmers worked on land rent from landowners with profit sharing systems. With limited land ownership, farmers are forced to think efficiently by managing narrow land to provide maximum results. If the product harvest value does not exceed the production costs, the farmers will suffer losses, not to mention if there are external disturbances such as erratic weather and pest disturbances. For this reason, some local residents are reluctant to make long-term investments in the land they are working on. Inappropriate results in the hope of weakening the commitment of farmers to focus on the work they are doing. The uncertainty of the results of planting Zalacca fruit and cassava causes some farmers to have other side activities such as working as construction workers to meet their daily needs. Another problem faced by farmers is the lack of knowledge on technology-based land processing techniques. Farmers have insufficient amount of capital to invest in tools that are more modern and financing the land development. All supporting facilities in the form of advance farming tools and methods are needed by farmers to produce high-quality fruit or harvest of all time. With limited capital, the farmers unable to maximize their production capacity. Meanwhile among the problems faced by small businesses, producing fruit derivatives is insufficient knowledge and skill to produce high-quality food at low cost, for the price to remain competitive in the market. In the meantime, SMEs are forced to improved their product quality to meet the market demand. In addition, SMEs need to utilize internet based marketing such as social media to enlarge their marketing area. SMEs' marketing system for the time being still relies on local networks and traditional markets. When the demand for products is low, SMEs shall encounter several problems such as sales bottleneck and longer inventory turnover that result in losses due to expired stock. Attention and assistance from the central and regional governments is needed to solve the problems faced by farmers and SMEs. To facilitate the need of modern agricultural equipment and production capital, the government policy should be in favor of the "small" by providing soft loan, because many farmers do not have the collateral to access banks credit. Capital is among a major factor hindering the farmers' effort to improve their landscape. The market also requires the attention of the government and private companies in its development. Farmers needs assistance to overcome the issue of limited availability of arable land for farming as well as their inability to earn decent benefits from the agricultural land they owned. Besides that, farmers also need effective and continuous counseling from the agricultural service on how to manage the trees well in order to yield an optimum harvest. Excellent knowledge and skills about managing farms can motivate farmers to pursue their current profession. From the social psychological perspective, social players underlies the pattern of interaction in its surroundings (Enz, 1988). Their dominance transformed into influential power at the latter stage of the communities' life. The pattern of behavior among a smallholder community can be explained using the theory of the coalitional models of resource dependence (Pfeffer & Salancik, 1974) and the theory of planned behavior (Ajzen, 1991). The resources interdependence among community members' influences

farmers' decisions in cultivation. According to Ajzen (1991) social factors also termed subjective norms are social pressure to do or not do a particular action such as a farmer's decision to plant the trees. Although each farmer makes the final decision, their choices are influenced by the policies and beliefs of many parties such as the local authority, community leaders, non-governmental organizations and investors. The existence of local actors, besides the government, also provides an important contribution to the raising motivation of farmers to retain their profession as farmers of Zalacca and cassava. In the end, local authorities and private institutions can contribute by providing training to the Zalacca and cassava farmer groups on modern farming methods, and synergizing partnership programs with communities and increasing awareness of sustainable local resource management. The role of farmer groups is not only limited to the identification of the needs of the farming community but can also help with the implementation of other social and government programs. When farmer groups are empowered, they will tend to maintain the zalacca and cassava business that they have engaged in. The fourth issue is related to the ability of farmers and SMEs in managing their businesses. By incorporating Zalacca and cassava farmers and other parties in the value chain, it will improve the quality of life of the local community in the area while mitigating environmental damage. To support the approach, it is necessary to increase not only government initiative but also community participation through improved land tenure security and strengthened capacity. The approach will have to be gradual.

4.2 THE LEAN MANAGEMENT PRACTICES

SMEs producing foods from Zalacca and cassava, have demonstrated the use of quality tools in their production starting from raw material selection, careful production process, great design packaging, and good marketing systems. The adoption of quality management by SMEs is mainly aimed at improving its earnings through waste minimizations. Table 1 present the perceived benefits of implementing Lean practices by farmers and SMEs producing derivatives of Zalacca fruits and cassava.

Table 1 Perceived benefits of lean management practices

| Rank | Perceived benefits | Farmers (percent) | SMEs utilizing Zalacca Fruits (percent) |
|------|---|-------------------|---|
| 1 | Lower production costs | 15.20 | 18.90 |
| 2 | Increasing profit | 14.70 | 15.90 |
| 3 | Higher productivity | 11.28 | 10.18 |
| 4 | Lower customer complains | 10.31 | 9.21 |
| 5 | Shorter cycle | 9.23 | 7.13 |
| 6 | time | 7.89 | 6.79 |
| 7 | Improved Sales | 6.81 | 6.71 |
| 8 | Shorter lead time | 6.23 | 6.12 |
| 9 | Lower scrap rate | 6.18 | 5.88 |
| 10 | Increase labor' welfare | 5.89 | 5.59 |
| 11 | Strengthen supply relation Improve customer relation | 6.28 | 7.59 |

| | | |
|-------|-----|-----|
| Total | 100 | 100 |
|-------|-----|-----|

The findings show that there were slightly difference in the perception of farmers on food producers concerning the benefits of Lean Management. The most prevalent benefits according to both parties was lower production costs. The size of the company is a significant factor concerning lean implementation, as medium-sized companies were doing better than their small and micro counterparts.

Table 2 Perceived barriers of quality management practices by Farmers and SMEs

| Rank | Perceived barriers | Farmers (percent) | SMEs utilizing Zalacca Fruits (percent) |
|------|---------------------------------------|-------------------|---|
| 1 | Lack of leaders' commitment | 9 | 9 |
| 2 | Lack of quality standards | 9 | 6 |
| 3 | Lack of training | 9 | 7 |
| 4 | Lack of knowledge | 9 | 7 |
| 5 | Inadequate process control techniques | 7 | 6 |
| 6 | Limited resources | 5 | 9 |
| 7 | Internal resistance | 7 | 7 |
| 8 | Poor employee participation | 9 | 6 |
| 9 | A poor delegation of authority | 5 | 6 |
| 10 | Poor supplier-customer relationship | 6 | 8 |
| 11 | Lack of government support | 5 | 8 |
| 12 | Lack of benchmarking | 5 | 7 |
| 13 | Low technology investment | 9 | 7 |
| 14 | Lack of working capital | 5 | 8 |
| 15 | External risks (weather, pests) | 9 | 4 |

The success of Lean Manufacturing implementation depends on "genuine top management commitment," "policy and planning aimed at customer satisfaction," "good communication within the organization," and "employee involvement and teamwork development".

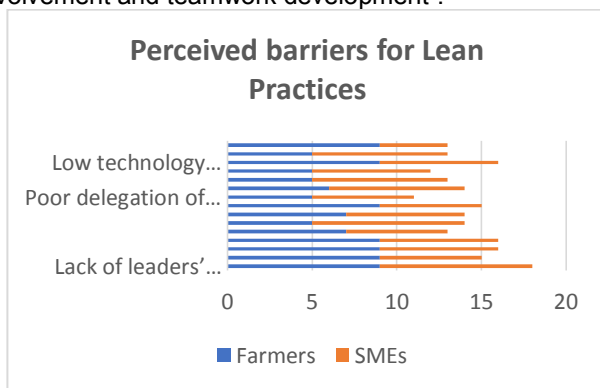


Figure 1 Barriers for implementation of quality management

Many obstacles can stop small and medium-sized businesses from leaning. Lean transformation obstacles vary between different organizations. The absence of a good senior management commitment was the main obstacle for sluggish production, which could hinder other

problems such as external risks, technology adoption, authorization, and internal resistance.

4.3 COST OF QUALITY INCURRED BY SMEs

Primarily the cost of quality incurred by SMEs can be classified into four categories namely: prevention costs, appraisal, internal failure, and external failure costs. Detail of the quality costs classification is presented in table 2.

Table 3. Type of quality costs incurred by SMEs

| Prevention | Appraisal | Internal Failure | External Failure |
|--|---|--|--|
| <ul style="list-style-type: none"> • Cost of training to keep up the technological changes • Products design and development • Design and development of equipment • Maintaining supplier-customer relations • Quality improvement programs | <ul style="list-style-type: none"> • Inspection for Zalacca quality • Machine maintenance In process inspection • Field testing (performance test) • Final inspection • Inspection on equipment • Social costs for loss spread with farmers | <ul style="list-style-type: none"> • Scrap due to inaccurate cutting • Rework due to electrical power instability • Defect because of overheating • Downgrading to cover production losses • Machine Breakdowns | <ul style="list-style-type: none"> • A high product return rate • Lower sales • Lost of goodwill • Warranty • Allowances • Product recalls |

5. CONCLUSION

The adoption of lean transformation by SMEs aimed at embedding lean principles as the production benchmark and culture to become a collective mindset of the organization. This feasibility study provided a picture of the current status of the quality management employed by farmers and SMEs producing foods from Zalacca and Cassava in Banjarnegara Central Java Indonesia. The provides clear the farmers' and SMEs motives indulging in the businesses. The result of this study provides a snapshot on the benefits, and the barriers of implementing lean management practices (LMP). None of the Food SMEs involved in this study implements food quality management in its pure form due to limited understanding the technical aspect of LMP. Likewise, the nature of the business and its location in rural area to some extend influence the way they perceive lean management. Yet farmers and SMEs that agreed that LMP helps eliminate waste thereby reducing costs, customer complaints and increased their productivity and profitability. There are four types of quality costs classification incurred by SMEs namely prevention, appraisal, internal failure, and external failure costs. This result can help researchers and practitioners to understand the holistic and broad food quality management and diagnose the limitations of their production processes. To verify the results, future research will be extended to other SMEs producing Zalacca and cassava originated foods from diverse regions in Indonesia.

REFERENCES

- [1] Abu, F., Gholami, H., Saman, M. Z. M., Zakuan, N., & Streimikiene, D. (2019). The implementation of lean manufacturing in the furniture industry: a review and analysis on the motives, barriers, challenges, and the applications. *Journal of Cleaner Production*.
- [2] Acharyaa, T. K. (2011). Material Handling and Process Improvement using Lean Manufacturing Principles. *International Journal of Industrial Engineering*, 18(7).
- [3] Adawiyah, W. R., Pramuka, B. A., Najmudin, & Jati, D. P. (2015). Green Supply Chain Management and its Impact on Construction Sector Small and Medium Enterprises (SMEs) Performance: A Case of Indonesia. *International Business Management*, 9(6), 1010-1024.
- [4] Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179-211.
- [5] Amoako-Gyampah, K., & Gargeya, V. B. (2001). Just-in-time manufacturing in Ghana. *Industrial Management & Data Systems*, 101(3), 106-113.
- [6] Antony, J., Kumar, M., & Labib, A. (2008). Gearing Six Sigma into UK manufacturing SMEs: results from a pilot study. *Journal of the Operational Research Society*, 59(4), 482-493.
- [7] Bhamu, J., & Singh Sangwan, K. (2014). Lean manufacturing: literature review and research issues. *International Journal of Operations & Production Management*, 34(7), 876-940.
- [8] Bogdan, R., & Biklen, S. (2007). *Qualitative Research for Education: An Introduction to Theories and Methods*: Pearson.
- [9] Caldera, H., Desha, C., & Dawes, L. (2019). Evaluating the enablers and barriers for successful implementation of sustainable business practice in 'lean'SMEs. *Journal of Cleaner Production*, 218, 575-590.
- [10] Coetzee, R., Van Dyk, L., & van der Merwe, K. R. (2018). Towards addressing respect for people during lean implementation. *International Journal of Lean Six Sigma*.
- [11] Coghlan, D., & Brannick, T. (2014). Understanding action research. *Doing action research in your own organization*.
- [12] Corbin, J. (1992). Strauss (2008). *Basics of qualitative research: Techniques and procedures for developing grounded theory*.
- [13] D'Amato, D., Veijonaho, S., & Toppinen, A. (2018). Towards sustainability? Forest-based circular bioeconomy business models in Finnish SMEs. *Forest Policy and Economics*, 101848.
- [14] 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.
- [15] Drew, J., McCallum, B., & Roggenhofer, S. (2006). Journey to Lean: Making Operational Change Stick. *Journal-Operational Research Society*, 57(2), 228.
- [16] Gunderson, M., Boehlje, M., Neves, M. F., & Sonka, S. (2014). Agribusiness organization and management. *Encyclopedia of agriculture and food systems*, 51-70.
- [17] Hari Adi, P., & Adawiyah, W. R. (2018). The impact of religiosity, environmental marketing orientation and practices on performance: A case of Muslim entrepreneurs in Indonesia. *Journal of Islamic Marketing*.
- [18] Huberman, M., & Miles, M. B. (2002). *The qualitative researcher's companion*: Sage.
- [19] Karlsson, C., & Åhlström, P. (1996). Assessing changes towards lean production. *International Journal of Operations & Production Management*, 16(2), 24-41.
- [20] Khaba, S., & Bhar, C. (2018). Lean awareness and potential for lean implementation in the Indian coal mining industry: An empirical study. *International Journal of Quality & Reliability Management*, 35(6), 1215-1231.
- [21] Kolb, S. M. (2012). Grounded theory and the constant comparative method: Valid research strategies for educators. *Journal of Emerging Trends in Educational Research and Policy Studies*, 3(1), 83-86.
- [22] Lawrence, S. R., Collins, E., Pavlovich, K., & Arunachalam, M. (2006). Sustainability practices of SMEs: the case of NZ. *Business strategy and the environment*, 15(4), 242-257.
- [23] Lee, C. Y. (2004). TQM in small manufacturers: an exploratory study in China. *International Journal of Quality & Reliability Management*, 21(2), 175-197.
- [24] Nawansir, G., Kong Teong, L., & Norezam Othman, S. (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.
- [25] Neto, G. C. O., Leite, R. R., Shibao, F. Y., & Lucato, W. C. (2017). Framework to overcome barriers in the implementation of cleaner production in small and medium-sized enterprises: multiple case studies in Brazil. *Journal of Cleaner Production*, 142, 50-62.
- [26] Pearce, A., Pons, D., & Neitzert, T. (2018). Implementing lean—Outcomes from SME case studies. *Operations Research Perspectives*, 5, 94-104.
- [27] Pfeffer, J., & Salancik, G. R. (1974). Organizational decision making as a political process: The case of a university budget. *Administrative science quarterly*, 135-151.
- [28] Saad, S., Perera, T., Achanga, P., Shehab, E., Roy, R., & Nelder, G. (2006). Critical success factors for lean implementation within SMEs. *Journal of Manufacturing Technology Management*.
- [29] Satolo Eduardo, G. (2017). Lean production in agribusiness organizations: multiple case studies in a developing country. *International Journal of Lean Six Sigma*, 8(3), 335-358. doi: 10.1108/IJLSS-03-2016-0012
- [30] Savić, B., Vasiljević, Z., & Đorđević, D. (2014). Strategic cost management as instrument for improving competitiveness of agribusiness

- complex. *Economics of Agriculture*, 61(297-2016-3649), 1005-1020.
- [31] Thanki, S. J., & Thakkar, J. (2018). Interdependence analysis of lean-green implementation challenges: a case of Indian SMEs. *Journal of Manufacturing Technology Management*, 29(2), 295-328.
- [32] Trienekens, J., & Zuurbier, P. (2008). Quality and safety standards in the food industry, developments and challenges. *International Journal of Production Economics*, 113(1), 107-122.
- [33] Vorkapić, M., Radovanović, F., Čočkalović, D., & Đorđević, D. (2017). Applicability of the lean concept to the management of small-scale manufacturing enterprises in Serbia. *Tehnički vjesnik*, 24(6), 1929-1934.
- [34] Womack, J. P., & Jones, D. T. (1997). Lean thinking—banish waste and create wealth in your corporation. *Journal of the Operational Research Society*, 48(11), 1148-1148.
- [35] Womack, J. P., Womack, J. P., Jones, D. T., & Roos, D. (1990). *Machine that changed the world*: Simon and Schuster.