International Journal of Financial, Accounting, and Management (IJFAM)
ISSN: 2656-3355, Vol 3, No 3, 2021, 245-258 *https://doi.org/10.35912/ijfam.v3i3.633*

The impacts of Triple-A supply chain on supply chain performance in Ethiopian textile share company

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Article History
Received on 14 June 2021
1st Revision on 24 June 2021
2nd Revision on 30 June 2021
3rd Revision on 5 August 2021
4th Revision on 17 August 2021
5th Revision on 18 August 2021
Accepted on 24 August 2021

Abstract
Purpose: This work aimed to investigate the impact of triple-A supply chain (SC) on SC performance in Bahir Dar & Kombolcha textile Share Company, Ethiopia.
Research Methodology: The study used survey questionnaires as a data collection instrument. Statistical package for social science to purify measurement items & Partial least square structural equation model used to test whether SC agility, SC adaptability, and SC alignment have individual or joint effects on SC performance.
Results: The finding indicates that SC adaptability, SC alignment, and SC agility have a significant effect on SC performance. The result also indicates that the joint triple-A SC had a strong impact on SC performance.
Limitations: The study focused on two Ethiopian textile share companies and it does not include other companies in the country.
Contribution: This study allows us to understand the joint triple-A SC, SC agility, adaptability, and SC alignment-SC performance relationships at a dimensional level and helps to develop a comprehensive research model.
Keywords: Adaptability, Agility, Alignment, Partial Least Square Structural Equation Modeling, SC performance, Triple-A
How to Cite: Ali, E. (2021). The impacts of Triple-A supply chain on supply chain performance in Ethiopian textile share company. *International Journal of Financial, Accounting, and Management*, 3(3), 245-258.

1. Introduction

Nowadays businesses are in a turbulent environment that has been faced a lot of complicated problems and challenges, among those, are; shock and discontinuity, shut down due to disruption results from pandemics like COVID-19, the rapid progress of information technology, and expectations of customers, globalization, unsettled and volatile market, constantly changing environments, short product life cycle and rapid introduction of new products, supply chain complexity results from numerous interaction and conflict of interest among supply chain partners, lack of trust, misalignment of incentives, fear of opportunism or hold up and fear of being locked-in with a low- quality supplier, inter-firm rivalry and managerial complexity, and other obstacle leads to failure & poor of supply chain performance.

Sanchez & Perez (2007) argue that businesses in the 21st century have in a more turbulent market condition, increasingly subjected to unexpected shock and discontinuities. Furthermore, customers' expectation is challenging the 21st century businesses which require cheaper cost, improved quality service, and enhanced satisfaction (Roh, Hong, and Min, 2014). Fish (2015) claims that product life cycles were shrinking while product ranges expanded to offer consumers more choice.

As a solution to the changing and ever-increasing complexity of today's business world, Hult and Ketchen (2007) suggest that there should be a strategic shift from the traditional supply chain to the strategic supply chain; this strategic supply chain is closely tied to the three main attributes of the supply chain which was introduced by Lee in 2004: agility, adaptability, and alignment in improving the whole supply chain performance.

Lee (2004) demonstrated that companies that are cost-effective and efficient could not gain a sustainable competitive advantage over their rivals rather sustainable competitive could be achieved through the supply chain that: react speedily to the sudden changes in demand and supply (agility), adapt over time as a market structure and strategies evolve (adaptability), and that align the interest of all firms (alignment).

The motivational reason behind conducting this study was the existing research gap in this area from a novelty perspective, the first and the most unique of the study lies in the fact that no study to date has been examined the impact of the triple-A supply chain on supply chain performance in a unified context in Ethiopia to given insights for managers and further encourage supply chain firms to improve techniques of overcoming challenges and possibly improve both their own level of supply chain performance in the era of globalization, ever-changing business environment, short product life cycle, unstable market, and fierce competition. The study will seek to systematically fill this gap. Second, the study might be seen as an answer to Whitten and Green (2012) recommend a call for future study to investigate the individual impact of agility, adaptability, and alignment on supply chain performance so far to this suggestion this study will be an appropriate response. In addition to this, the study will be an answer to the call for future research studies in order to seek more investigation to improve agility, adaptability, and alignment using other resources and capabilities rather than supply chain visibility (Dubey et al., 2018) since this study adapted resources based view and dynamic capability as a theoretical background. To fill the existing gaps, the following objectives were addressed:

1) To examine the impacts of supply chain agility on supply chain performance in Bahir Dar and Kombolcha textile Share Company.
2) To examine the impacts of supply chain adaptability on supply chain performance in Bahir Dar and Kombolcha textile Share Company.
3) To assess the impacts of supply chain alignment on supply chain performance in Bahir Dar and Kombolcha textile Share Company.

To investigate the impact of the triple-A supply chain on supply chain performance in Bahir Dar and Kombolcha textile Share Company.

2. Literature Review and hypothesis development

Supply Chain Agility & Supply Chain Performance

Supply chain agility is the ability of an organization to provide a strategic advantage by responding to uncertainty in the market and it enables firms to smoothly and cost-efficiently handle supply chain disruption (Blome et al., 2013). In supporting this, Christopher (2002) suggested that supply chain agility helps a firm to better synchronize supply and demand which can reduce the cost of inventory and transportation. Moreover, Gligor and Holcomb (2012) suggested that supply chain agility can also positively affect operational performance. Supply chain agility is developed through acquiring capabilities that can act rapidly and diversely to environmental and competitive changes (Yusuf et al., 2003). Similarly, Sufian (2013) found that agile supply chain strategy positively correlated with supply chain performance:

H1: Supply chain agility has a significant effect on supply chain performance.

Supply Chain Adaptability & Supply Chain Performance

According to Baramichai et al. (2007), both a flexible and adaptable supply chain could lead to a better company performance compared with only a flexible supply chain. Concerning supply chain adaptability, Chan et al. (2009) concluded that the flexible and adaptable supply chain helps not only in improving the company performance but also in improving the supplier performance. Rameshwar et

al., (2015) support the founding of Lee, 2004; Whitten et al., (2012) which states that supply chain adaptability can improve supply chain performance.
H2: Supply chain adaptability has a significant effect on supply chain performance

Supply chain Alignment & Supply Chain Performance
Rameshwar et al., (2015) state that supply chain alignment can have a direct impact on supply chain performance. Further, Tan et al. (2010) suggested two types of supply chain alignment: information alignment and relational alignment, they found a significant effect to the relational alignment on the firm performance. Mikalef et al., (2013) found that procurement alignment has a significant impact on competitive performance and supply chain performance. Moreover, Ibrahim and Ogunyemi's (2012) results support the effect of linkages and information sharing with the supplier as methods for achieving supply chain alignment of the company's export performance. Based on the above discussion:
H3: Supply chain alignment has a significant effect on supply chain performance

Triple-A Supply Chain on Supply Chain Performance
Whitten et al., (2012) concluded that triple-A supply chain strategy has a significant effect on supply chain performance. Attia (2015) examines the effect of triple-A supply chain on supply chain performance (i.e., flexibility performance; resource performance; output performance) and concluded that triple-A supply chain-marketing strategy alignment directly affects supply chain performance. Based on the above discussion, in this study the researcher expected triple-A supply chain has a positive effect on supply chain performance**:**
H4: Triple-A Supply chain has a significant effect on supply chain performance

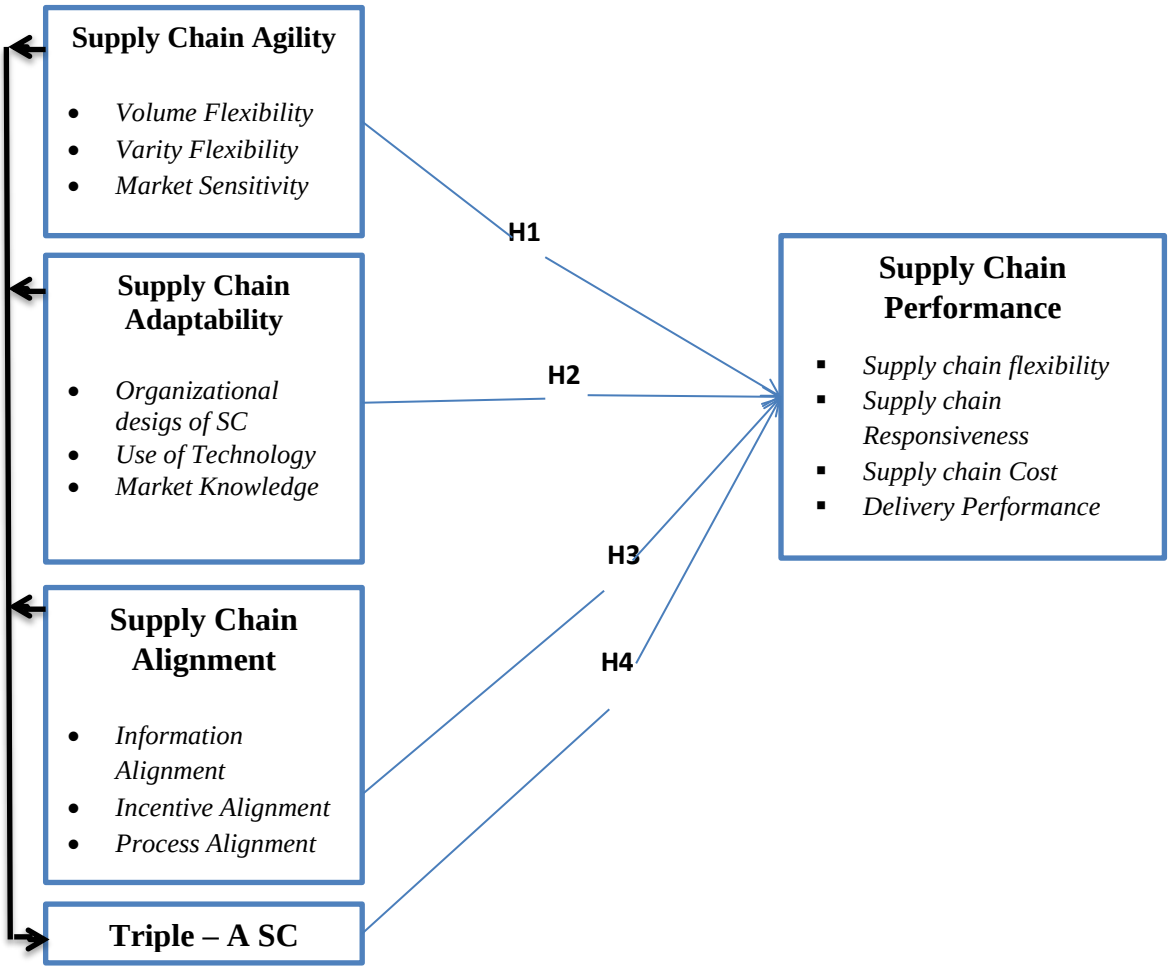

Figure 1. Conceptual framework of the study (source: Author elaboration)

3. Research methodology

This study is an explanatory hypothesis testing research design that aimed to investigate the causal effects of triple-A supply chain on supply chain performance in the case of two Ethiopian textile share companies.

Target population, sampling technique, and sample size

Target Population

The study included the two textile share companies in Amhara regional state, Ethiopia i.e. Bahir Dar Textile Share Company (BDTSC) and Kombolcha Textile Share Company (KTSC). Reasons for selecting this company are since in this industries the environment they operate are highly characterized by intense competition, and a short product life cycle, which is related to fashion product that needs an adaptable, agile, and aligning of stockholders interest to be successful in the market. So from this point of view, the study concentrated on these two companies to get more responses and make generalizations through testing hypothesized relationships within the research variables.

Sample Technique

To conduct this study, stratified random sampling was selected to reduce sample error and due to the nature of this study was planned to obtain a response from two different (heterogeneous) companies which are located in a different geographical areas that are mandated to use stratified sampling to make generalization of the finding.

Therefore, this study had six targeted functional strata's in each company (see table 1) which are purchasing, production management, quality assurance management, marketing and promotion, material management and general, vice manager & other supervisors with a total population of 320 permanent employees out of 2809 in both companies.

Sample Size

From the six functional stratums, a total of 320 permanent employees in both textile share companies with a sample of 175 respondents were selected. The researcher believes that a sample of 175 respondents was sufficient to conduct a study through (PLS-SEM) partial least structural equation model using SmartPLS 3.2.8 software. Then a sample was distributed proportionally (proportional allocation) to each stratum.

Table 1. Proportional allocation of sample size

Company	No.	Departmental level of strata's	Stratum population size($r = c * s/p$)	Sample Size (r)
Bahir Dar Textile Share Company.	1	Purchasing	12	6
	2	Production management	94	51
	3	Quality assurance management	10	5
	4	Marketing & promotion	11	6
	5	Material management	10	5
	6	General, Vice manager & other supervisors	12	7
Subtotal			**149**	**80**
Kombolcha Textile Share Company.	1	Purchasing	15	8
	2	Production management	108	59
	3	Quality assurance management	11	6
	4	Marketing	13	7
	5	Material management	10	5
	6	General, Vice manager & other supervisors	14	8
Subtotal			**171**	**95**
Total			**320**	**175**

Data collection instrument

This study adapted research survey questionnaires from Luque et al., (2018) to measure triple-A supply chain and its dimensions, from Qrunfleh &Tarafder (2012), Wong et al., (2011), and Qi et al., (2009) to measure supply chain performance, and respondents were requested to specify their level of agreement or disagreement on each item using five-point Likert scale.

4. Results and discussion

Reliability and Validity of Measurement Model

To check whether or not the measures met the requirements of reliability; Cronbach's alpha, composite reliability (CR), the average variance extracted (AVE), and Dijkstra-Henseles's RhoA were assessed. Specifically to reduce the deficiencies of Cronbach's alpha, which had a poor estimation of internal consistency and in some cases, over gross estimation (Revelle &Zinbarg, 2009) CR was tested since it is more consistent in comparison to Cronbach alpha (Henseler et al., 2009). Hence, to measure the reliability and internal consistency of the measured variables represented by a latent construct CR and AVE were calculated with their recommended value of CR being greater than or equal to 0.70, and AVE value should not be less than 0.50 (Garver and Mentzer, 1999).

Therefore, as shown in Table 2 Cronbach's alpha value, composite reliability & average variance extracted value of each construct of the study exceeded the cut-off point. Hence, this indicates the study constructs have sufficient reliability and the measurement model of this study satisfies all the requirements of reliability measurement.

Table 2. Reliability of research constructs

Constructs	α	CR	AVE	rhoA
Short Term Market Sensitivity	0.843	0.904	0.759	0.859
Volume Flexibility	0.826	0.895	0.739	0.84
Variety Flexibility	0.841	0.903	0.756	0.854
Supply chain Organizational Design	0.863	0.910	0.771	1.001
Use of Technology	0.857	0.905	0.761	1.045
Medium- and Long Term Market knowledge	0.767	0.858	0.669	0.822
Incentive Alignment	0.780	0.871	0.692	0.788
Information Alignment	0.804	0.883	0.716	0.818
Process Alignment	0.777	0.871	0.694	0.792
Supply Chain Performance	0.907	0.928	0.683	0.907

On the other hand, to evaluate the convergent validity of reflective constructs, studies considered the outer loading value and the average variance extracted. To do this at a minimum the outer loading of all indicators should be statistically significant based on the common rule of thumb value greater than or equals to 0.708 to be acceptable (Hair et al., 2017). As table 3 below show the loading values of all indicators were above the threshold value 0.708. This implies that there is a higher level of indicator reliability of the study. Concerning convergent validity, the average variance extracted of all constructs is larger than the threshold value of 0.50. Therefore, convergent validity was confirmed.

Table 3. Results of indicators reliability and convergent validity for the outer model

Constructs	**Code**	**Items**	**Loading (≥0. 708)**	**AVE (≥0. 5)**
Short term market sensitivity (STMS) Adapted from (Alfalla-Luque et al., 2018)	STMS1	There is better communication between SC (supply chain) and internal functional department in our company	0.869	0.759
	STMS2	There is a real-time customer relationship communication and feedback on our company	0.887	

	STMS3	Our supply chain has the capability of reading and responding to real customer demand	0.859	
Volume Flexibility (VOF) Adapted from (Alfalla-Luque et al., 2018)	VOF1	Our customer chooses us since we deliver flexibly for their needs.	0.847	0.739
	VOF2	Our companies strive to shorten supplier lead time, in order to avoid inventory and stock out.	0.882	
	VOF3	Flexibility in response to requests for changes is the characteristic of our relationship with our key suppliers.	0.850	
Variety Flexibility(VAF) Adapted from (Alfalla-Luque et al., 2018)	VAF1	We can add product variety without sacrificing quality.	0.866	0.756
	VAF2	We can easily add significant product variety without increasing cost.	0.861	
	VAF3	Our capability for responding quickly to customization requirements is very high.	0.881	
SC Organizational Design (SCOD) Adapted from (Alfalla-Luque et al., 2018)	SCOD1	Our production system is designed to accommodate changes in demand volume.	0.908	0.786
	SCOD2	Our production system is designed to accommodate changes in the production mix.	0.850	
	SCOD3	Our supply chain structures often change in order to cope with volatile market	0.876	
Use of Technology (UT) Adapted from (Alfalla-Luque et al., 2018)	UT1	We have a good understanding of where our production technology stands in terms of technology life cycles.	0.918	0.761
	UT2	Our plant remains at the leading edge of new technology in our industry	0.836	
	UT3	Our supply chain is characterized by a high level of integration using information systems in our firms	0.862	
Medium& Long term market Knowledge(MLTK) Adapted from (Alfalla-Luque et al., 2018)	MLTK1	We monitor economies in the country to detect potential new markets	0.849	0.669
	MLTK2	We are concerned about the needs of both our immediate customers and our end consumers	0.780	
	MLTK3	Our supply chain needs to maintain a long and rigid relationship with a small number of suppliers	0.822	
Incentive Alignment (INCA) Adapted from (Alfalla-Luque et al., 2018)	INCA1	Sharing supply chain risks and rewards with our suppliers is critical to our plant's success.	0.814	
	INCA2	Our supply chain members have clearly defined goals within our supply chain	0.834	
	INCA3	Our supply chain predicts the possible behavior of supply chain partners in light of their current incentive	0.847	0.692
Information Alignment (INFA) Adapted from (Alfalla-Luque et al., 2018)	INFA1	We emphasize the openness of communication in collaborating with our customers.	0.823	0.716
	INFA2	We emphasize the openness of communication in collaborating with our suppliers.	0.844	
	INFA3	We use unambiguous language & communication with our supply chain partners.	0.870	
Process Alignment (PA)	PA1	Cooperating with our customers is beneficial to us.	0.849	

Adapted from (Alfalla-Luque et al., 2018)	PA2	Cooperating with our suppliers is beneficial to us.	0.780	0.694
	PA3	Our SC has a proper coordination mechanism in process, activities, and decisions among SC partners	0.822	
SC Performance (SCP) Adapted from (Qi et al., 2009; Qrunfleh & Tarafdar, 2014; Wong et al., 2011)	SCP1	Our supply chain has a fast customer response time.	0.820	0.683
	SCP2	Our supply chain has a short order-to-delivery cycle time.	0.832	
	SCP3	Our supply chain is able to produce products characterized by numerous features, options, sizes, and colors	0.851	
	SCP4	Our supply chain is able to rapidly introduce large numbers of product improvement/variation	0.790	
	SCP5	Our supply chain is able to adjust capacity so as to accelerate or decelerate production in response to changes in customer demand	0.821	
	SCP6	Our supply chain selects suppliers based on their performance on cost and performance	0.843	

In this study, the coefficient of determination or explanatory power (R^2) value was tested for the endogenous variable supply chain performance. Specifically, R^2 -values of 0.75, 0.50, or 0.25 for endogenous latent variables can as a rule of thumbs respectively described as substantial, moderate, or weak (Hair et al., 2011, Hensler et al., 2009) cited in Hair et al., (2014; 2017).

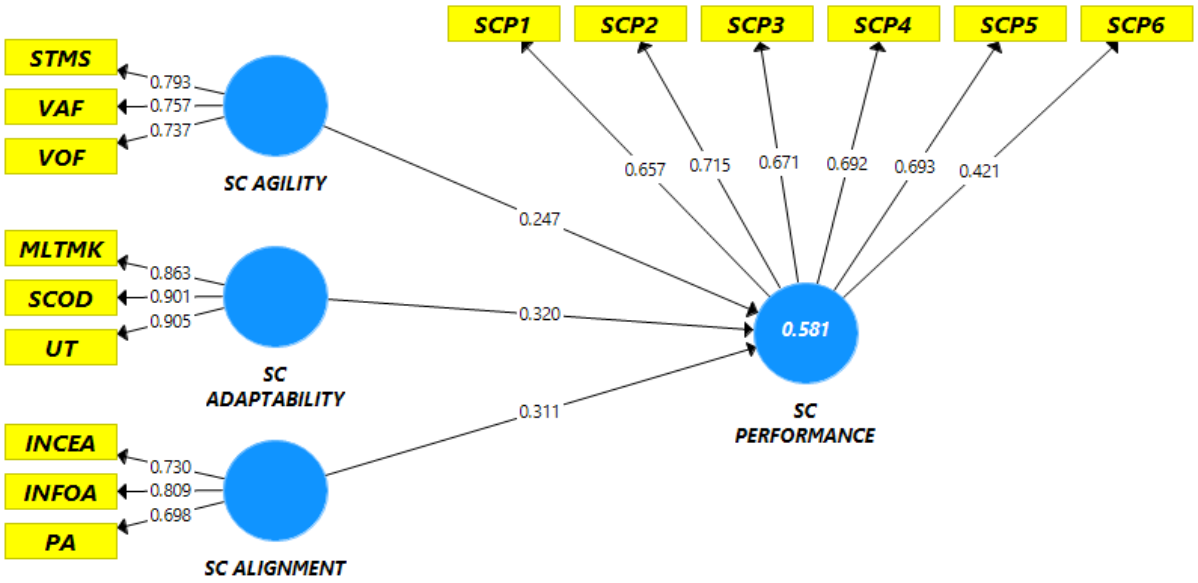

Figure 2. PLS-SEM coefficient of determination (R^2) - Output of Supply Chain Performance

Thus, the above second-order structural model implies that the structural model of the endogenous variable (supply chain performance) has predictive accuracy at($R^2 = 0.581$). Further, the model value of $R^2 = 0.581$ tells us a moderate combined effect of supply chain agility, supply chain adaptability, and supply chain alignment on supply chain performance. Moreover, the result of R^2 indicates that 58.1% of improvement is due to results from the supply chain agility, supply chain adaptability, and supply chain alignment.

Furthermore, the predictive relevance (Q^2) was computed using techniques of blindfolding Smartpls-

3.2.8. Finally, after performing the **blindfolding technique** at omission distance case *7*, the Q^2 values were stable and different from zero, to this end, the result was depicted in figure 3 as follows:

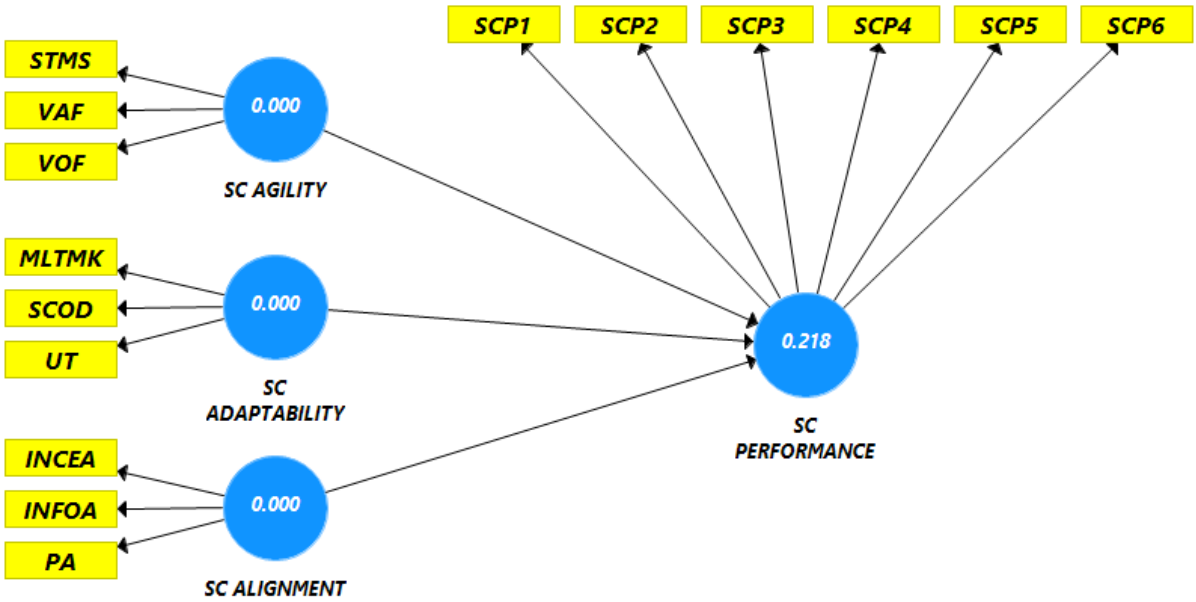

Figure 3. PLS-SEM results of predictive relevance Q^2 -output for Supply Chain Performance

For this study, the above second-order structural model indicates that SC performance has a Q^2 -value of 0.218. This shows a medium predictive relevance (q^2) -effect size.

Assessment of the Structural Model (Hypothesis Testing)

SC Agility, SC Adaptability, and SC Alignment on SC performance (H1, H2, &H3)

As H1 shows that SC agility has a significant & positive effect on SC performance. The outcome fully supported the study's expectation of the significant and positive impacts of supply chain agility on supply chain performance, in particular, the path coefficient depicted in figure 4 shows that β-value of 0.247 and the critical t-value of 2.216 and assure p-value (0.027) and the related lower bootstrap confidence interval (2.5%) and upper confidence interval (97.5%) was $0.051;\ 0.48$ respectively which is comprised no absolute zero value. This implies that an improvement in supply chain agility by one unit will improve supply chain performance by 0.247 units. This result was consistent and demonstrated by a previous study (Qrunfleh & Tarafder, 2014) that the greatest of agility in its SC, the better the supply chain performs, agile supply chain requires a dynamic, context-specific, and aggressively changing short term supply chain that allows the supply chain to interface with customers and quickly adapts to future changes. Meanwhile, the results of the study were consistent with the finding of Sufian (2013) mentioned as agile strategies are positively correlated with supply chain performance. This works also supported that successful implementation of agility could enhance a firm's supply chain performance and help them to stay competitive and gain market share over their competitors. **Hence, *Hypothesis 1* was supported.**

The path analysis figure 4 also depicts a strong positive association between supply chain adaptability and supply chain performance. As can be observed, the value of path coefficients $(\beta) = 0.320$ with (t) value of 4.867 at p=0.000 which is p<0.001. Meanwhile, just like other hypotheses, the bootstrapping technique shows the non-inclusion of zero within the lower and upper confidence interval $(0.184;\ 0.438)$ respectively. The founding of the study was consistent with several previous empirical studies including Rameshwar et al., (2015); Lee (2004); Dwayne et al., (2012) were stated as supply chain adaptability can improve supply chain performance. Dubey et al.,(2015); Chan & Chan (2010), Eckstein et al.,(2015) also added supply chain adaptability has a positive effect on supply chain

performance in terms of cost-saving, customer demand fill rate, adjust any kinds of structural forms of organization within the changing environment. Additionally, it was exactly consistent with the theoretical viewpoints of Lee (2004) mentioned as firms can foster adaptability to improve supply chain performance by using intermediaries to develop fresh suppliers and logistics infrastructure, evaluating the need of customers to create a flexible product design. Furthermore, this study was also added that companies will benefit themselves and improve supply chain performance through successfully implementing those adaptability strategies to adapt to an ever-changing environment. ***Therefore, the study's result strongly supported Hypothesis 2.***

With respect to supply chain alignment on supply chain performance, the results strongly demonstrate a positive impact on supply chain performance. In particular, at (β=0.311) the path coefficient that connects supply chain alignment and supply chain performance, statistics(t) $= 2.757, p = 0.006$ and the lower &upper percentile confidence interval $(0.09; 0.538)$ in which the bootstrapping technique incorporates non-zero value. This result of the study is also consistent with the result of prior studies (Rameshwar et al., 2015; Tan et al., 2010) more importantly the result indicates the benefit of aligning and coordinating the interest of all firms using information, process, and incentive alignment, particularly to share information and knowledge, establishing partner's role, task, and responsibilities and to share risks, cost as well as a reward (Solares et al., 2015; Simatupang & Sridharan, 2005). Further, the study's result demonstrates that the collective benefits of information, process, and incentive have a substantial positive impact on a firm's successful improvements of the supply chain. It was also consistent with the theoretical viewpoint of Tang &Tomlin (2008); Lalonde and Pohlen(1996); Lee(2004) indicates that firms benefit themselves using SC alignment by clearly exchanging information, clearly laying out roles and responsibilities, looking at the holistic view and sharing risk, cost and rewards equally. Once again, this study argues that firms coordinating the interest of all channel members through sharing relevant information and rewards equal to the whole members of the supply chain can foster supply chain performance. **Hence, *Hypothesis 3* was supported**.

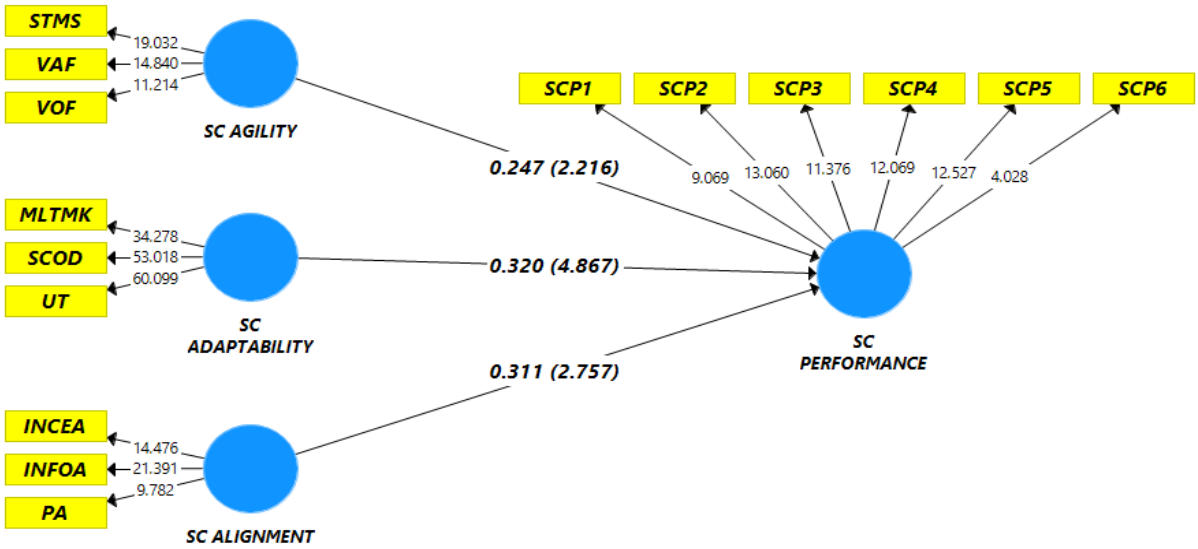

Figure 4. PLS-SEM Outputs for the effects of SC-Ag, SC -Ad &SC-Al on SCP

Triple-A Supply Chain and Supply Chain Performance (H4)

Finally, the significant effects of the joint triple-A supply chain on supply chain performance were affirmed. As a result, the path from triple-A supply chain to supply chain performance was the strongest positive and significant with the standardized coefficient value at (β=0.760), (t) =21.702, and significant at the($p = 0.000$). The result was also supported by previous studies Dwayne et al., (2010); Attia (2016) & Luque et al., (2018) in which the cumulative impacts of triple-A SC has a tremendous effect on the performance of the supply chain (Baker, 2008; Swafford et al., 2008); coping the

environmental dynamics by maintaining adaptability (Stevenson and spring, 2007) and aligning the interest of all firms which are working on their supply chain through exchanging information with supplier & customer; layout roles and responsibilities, equitable sharing of risk and gain (Lee, 2004). The study also supported the combined impacts of triple-A supply chain on supply chain performance in terms of that an enhanced supply chain operation using agility, adaptability, and alignment strategies will help to improved supply chain performance. **Thus, *Hypothesis 4* was fully supported.**

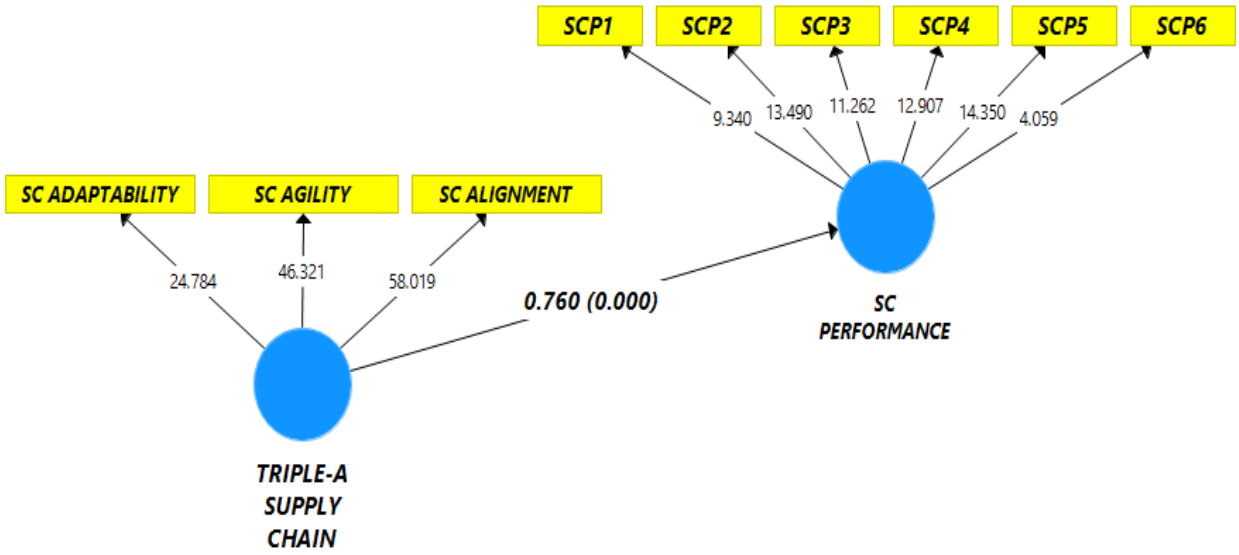

Figure 5. PLS-SEM Outputs for the combined effects of triple-A supply chain on supply chain performance

5. Conclusion

Based on partial least square structural equation model bootstrapping hypothesis testing technique results the following conclusions of this study were outlined as follows:

The main objectives of this study were to examine the effects of supply chain agility, supply chain adaptability, and supply chain alignment on a firm's supply chain performance. All of the three independent constructs have a major impact on supply chain performance in the case of companies. Additionally, the study confirmed the combined effects of triple-A supply chain on supply chain performance. To conclude, responding successfully to one-time variation in the supply chain environment would not be sufficient for the success of firms, because such a responding capability cannot always be effective in the constantly changing business environment. So their supply chain should be able to adapt itself to the structural change and trends in the business environment and evolve accordingly. Further, they should work on a win-win situation to align the interest of all channel members.

Implication and contributions to practice & theory

In terms of implications for managerial practice, this study helps to advance the understanding of supply chain managers by giving insights on how their firm's supply chain performance could be improved particularly using triple-A supply chain strategies as a turning point.

The finding of this study also provides implications and contributions to supply chain management theories. The first implications are concerned with the conceptualization of multidimensional constructs, this study demonstrates the benefits of conceptualizing triple-A supply chain and supply chain performance as a multidimensional construct by conceptualizing the effects of joint triple-A supply chains as consisting of three dimensions such as supply chain agility, supply chain adaptability, and supply chain alignment on supply chain performance in a combined manner. Likewise, supply chain agility, supply chain adaptability, and supply chain alignment were conceptualized from nine construct dimensions in a weighted manner. Therefore, this study allows us to comprehensively understand the joint triple-A supply chain, supply chain agility, supply chain adaptability, and supply chain alignment-supply chain performance relationship at a dimensional level. More importantly, from this study, the use of multidimensional triple-A supply chain, supply chain agility, supply chain adaptability, supply chain alignment, and supply chain performance allow developing a comprehensive research conceptual model.

Recommendation

Based on the major finding and comprehensive reviews of works of literature, case studies, journals, and articles which have been generally accepted by several scholars, the following recommendations are given by the researcher that may potentially help to improve their intended supply chain performance from three comprehensive viewpoints as follows:

Recommendation to improve supply chain performance through supply chain agility

- It is advisable that they have responded rapidly to the short-term changes in demand and supply, uncertainty, and unpredictable business environment through promoting synchronous flows of real-time information among their own supply chain partners. Particularly this helps them in improving responsiveness to the changing, unexpected and volatile customer demand. Companies must have to work on the agility to be effective, quick, and flexible in an ever-changing environment. Once again, to reduce the high cost of production and high cost of transportation due to delays from ports, they should have to follow mass production to enjoy the benefits of economies of scale and use groupage/consolidation strategies that can reduce transport costs.

Recommendation to improve supply chain performance through supply chain adaptability

- To cope and be consistent with the dynamic environment, Bahir Dar Textile Share Company & Kombolcha Textile Share Company should adjust supply chain design to meet the structural shifting in the market and modify networks, strategies, technologies, products, and making changes in the market positions and upgrading skills of the company's employees. Furthermore, they should go hand in hand with the situation in terms of technology and product life cycles. To end, to overcome the problem associated with shortening product and technological cycles, it is crucial they must have a dynamic instead of a static supply chain. Moreover, to overcome the problems of limited availability of input such as chemicals, the government should have to build the capacity of home-based chemical producers and foster the relationships between firms.

Recommendation to improve supply chain performance through supply chain alignment

- To reduce problems such as unwillingness to share information, lack of trust among supply chain members, minimal coordination across other subsectors, and unwillingness to share risks, rewards, and incentives those companies should imperatively create a close relationship that cultivates trust among partners, creating synergy in collaboration and ensures operational efficiency and enhance integration among value chain stakeholders, thereby they can improve the whole supply chain instead of sub-optimization.

Lastly, in order to survive the supply chain complexity & dynamisms of the current business environment, the researcher recommends both firms to establish and based on triple-A supply chain that helps to improve the supply chain. Undoubtedly an improved supply chain performance will lead to improved organizational performance. Therefore, companies should work based on the indisputable triple-A supply chain**.**

Limitation and suggestions for further research directions

Following the recommendation of Magutu et al., (2016), Dubey et al., (2018); Dwayne et al., (2012) this study was coming to end and investigating the joint effects of triple-A supply chain on supply chain performance. Despite the study's contribution, some limitations have been found regarding this study. To start, the first limitation of this study was considering triple-A supply chain as an antecedent of supply chain performance and this study couldn't include all dimensions of triple-A supply chain and only focused on some unidimensional constructs. Thus, there is a need to suggest further studies exclusively to focus on those other factors that contribute to fostering supply chain agility, adaptability, and supply chain alignment. To illustrate a few concerning to supply chain alignment: relational alignment, organizational alignment, internal and external alignment to reach a more generalized and acceptable conclusion. To add to supply chain agility the researcher once again suggests looking at customer sensitivity, virtual and process integration, and network-based. Secondly, this study focused on two textile share companies in Ethiopia and it does not include other companies in the country. Hence, there is a need to examine this issue by even repeating this study on the textile industry level in Ethiopia to reach a more generalized conclusion.

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