
ISSN (Online) : 2279-0667
Published by:-
www.tarj.in
TRANS Asian Journal of Marketing
&
Management Research (TAJMMR)

TAJMMR ISSN (online) : 2279-0667

Editor-in-Chief : Dr. Karun Kant Uppal

Impact Factor	:	SJIF 2021 = 7.263
Frequency	:	Monthly
Country	:	India
Language	:	English
Start Year	:	2012

Published by : www.tarj.in

Indexed/ Listed at : Ulrich's Periodicals Directory, ProQuest, U.S.A.

E-mail ID: tarjjournals@gmail.com

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TAJMMR: Trans Asian Journal of Marketing Management Research
ISSN: 2279-0667 Vol. 13, Issue 7-8-9 July- Aug-Sep, 2024 SJIF 2021 = 7.263
A peer reviewed journal

PRIMARY AGRICULTURAL CREDIT CO-OPERATIVE SOCIETY - A SYSTEMATICRE VIEW OF LITERATURE

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ABSTRACT

Co-operation is a worldwide movement. It is the backbone of economic activities and social progress. Co-operative Societies play a vital role in bringing about socio-economic transformation and agricultural development in any country. This study reviews the current status of Primary Agricultural Credit Co-operative Services, especially short-term crop loans. The secondarydata wascollectedfromsources like scholarly literature, internet sources, books, journals, proceedings, magazines, newspapers, personal resources, libraries, websites, government records, and documents. Agriculture is still the primary source of livelihood for the majority of people in India. Credit is an important input in the development of agriculture. There are many reasons which motivate the crop cultivators to get a crop loan from Primary Agricultural Credit Co-operative Societies. The important reasons are less time-consuming procedure, government subsidy, self-interest, low-interest rate, and reliability. Primary Agricultural Credit Co-operative Societies' contribution increases the productivity in agriculture and improves the standard of living of the rural people. Through the present study, the current status of co-operative society credit practices and operations were identified. The goal of the present study is to examine the research gap in the Primary Agricultural Credit Co-operative Society through advanced literature review and analysis; hence the gap identified was customer attitude towards agricultural credit.

KEYWORDS: *Agricultural Credit, Development, Operations, Short-Term, Beneficiary, Customer Attitude, Crop Loan.*

INTRODUCTION

Finance is the lifeblood of any business same way credit is the lifeblood of agriculture. Without finance, farmers cannot do farming activities. Hence the Primary Agricultural Credit Co-operative Societies provide credit to farm and non-farm activities in rural areas to improve agriculture, Shanmugharaj, C.G. (2014), identified in his study, for a long period, moneylenders have been operating in rural areas. They were exploiting the poor farmers by charging a high rate of interest. So the small and medium farmers were struggling to get the required credit at an affordable rate of interest. Bankar, et al. (1987), in this background, the study has been taken up to analyze the Primary Agricultural Credit Co-operative society's contribution to rural agricultural and economic activities. Singh, et al. (1982), found society's credit increases the productivity in agriculture and decreases the problems faced by the farmers in the rural areas and the study also recommends suitable strategies for improving the socio-economic conditions of the rural farmers. Rao, S. (1980),examined the main objective of the village co-operative credit societies was to grant loans to members at low rates of interest to replace the moneylenders in the long run. Shiv Karan Singh(1982),stated that agriculture forms the backbone of the Indian economy. Agriculture occupies a place of pride after Industrialization in the last sixdecades. Kalyankar, S.P. (1983), Agriculture is an unorganized profession. Indian economy is largely dependent on rural resources specifically agricultural output. Verma, S. et al.(1983),the agricultural sector has a significant role to play in the economic development of a country. Sathyanarayana, E. (1984), Agriculture provides livelihood to about 65% of Indianlabor and contributes to nearly 22% of India's Gross Domestic Product (GDP). After the Government of India's new policy of liberalization, privatization and globalization we have found a way for modern cultivation through the latest technology. Prabhakaran, P. V. et al. (1985), the recent technological changes in Indian agriculture have brought about intensive use of capital and other farm resources with the result that the demand for credit has increased. Satya Bhama (1985),there are different agricultural development banks like Regional Development Bank of India, National Bank of Agricultural and Rural Development, and Regional Rural Bank, which are leading in the market to offer crop loans to needy people. In the Cooperative sector, State Co-operative Bank, District Co-operative Bank, and Primary Agricultural Credit Co-operative Societies have been offering crop loans. Among the three, the Primary AgriculturalCredit Co-operative Societies have been extending crop loans only to crop cultivators.

The objectives of the paper

1. To examine the structure and nature of Primary Agricultural Credit Co-operative Societies.
2. To study exhaustive research on Primary Agricultural Credit Co-operative Society.
3. To identify the research gap in customer attitude.

Research methodology

The present paper includes secondary data derived from scholarly literature, internet sources, books, journals, proceedings, magazines, newspapers, personal resources, libraries, websites,

government records, and documents. The data was analyzed to identify the gap in Primary Agricultural Credit Co-operative Societies.

Related Work

A study review of literature on Primary Agricultural Credit Co-operative Society by Satya Bhama (1985), has highlighted that there was an increase in loans taken from Institutional sources, & it has helped to increase their crop production & income, this was because of the small farmers use their land more intensively compared to large farmers. Rao (1987), explains, that owing to successive crop failures, the repayments were very less and most of the credit from both institutional and non-institutional sources was overdue. Natarajan, M. (1987), inhis study, has given the importance of the collection of loans by the sample primaries and identifies the factors influencing such collection, and suggests measures for improving the collection of loans by the societies. Baviskar et al.(1987),have examined the factors for the success or failure of the cooperatives and assed the impact of various cooperatives on the rural poor, with the help of Case studies from Maharashtra, West Bengal, Uttar Pradesh, Haryana, Tamil Nadu, Gujarat, Karnataka, and Kerala. According to this study, the cooperatives had a positive effect on improving the standard of living of rural masses. Reddy C.R. (1988), in his article Co-operative Agricultural Finance, collected that the recommendation of various Committees and Commissions based on the Co-operative Societies Act, 1904, produced the result at a later date. The judicious flow of crop loans is very helpful in accelerating the economic improvement of the farm sector. Radhakrishnan et al. (1988), constructed a study on the supply and utilization of Short term Co-operative agricultural credit in Palakkad district in Kerala after collecting data from a sample of 15 borrowers farmers, and an unequal number of non-borrowers. It was found that around 50 percent of the holdings of borrowers, as well as non-borrowers. Ahmed (1989), compared the transaction costs of borrowing from both formal and informal sources in Bangladesh. The study revealed that transaction costs of loans from formal lenders were higher than those of loans from informal lenders. Transaction cost per loan decreased with the loan size which was higher for a formal loan than for an informal loan. Sarap (1990), discussed in detail the interrelationship between the borrowing cost and demand for credit in Orissa among different landholdings. The significant conclusion was the decrease in average transaction cost with an increase in the size of holdings. Kittur A. (1990),constructed in his article that marginal and small farmers tended to use diverted funds to meet the necessities of life, whereas large and well-to-do farmers used the funds for useful and conspicuous consumption. Whenever the loans were made in cash, the chances of misuse were higher as compared to a loan made in kind. Vaikuntha (1991), collected the pattern of utilization of Co-operative credit in selected taluk and the repayment performance of the borrowers which was based on 180 borrowers of Karnataka Central Co-operative Bank. The study unveiled that all the size groups of farmers in the irrigated area utilized the credit for productive purposes. Mahfoozur Rahman (1992), astudy regarding Jammu and Kashmir. It analyzed the working of the Primary Agricultural Credit Societies, Central Co-operative Banks, State Co-operative Bank, Land Development Bank, and the role of a nationalized bank in the provision of agricultural finance in Jammu and Kashmir. Desai et al.

(1992), compiled the performance of institutional finance for agricultural development at a national level. They considered three-tier co-operative financial institutions, Co-operative Land Development Bank, Commercial Banks, Regional Rural Banks, and Rural Electrification Corporations as the sources of institutional finance and observed that the relative importance of institutional credit has shown an increasing trend not only in the institutional share of rural credit but also in its share in the number of farmers services. Siddique A.Q. (1993), in his study, stated that the crop loan disbursement had low coverage for the small farmers who constituted about 50 percent of the rural households, in 1993, nearly 85 percent of the small farmers had no access to institutional sources of credit. Shiva Maggi (1994), constructed the conditions behind the success of Rural Cooperatives by addressing questions like what organizational principles are involved in promoting Rural Financial Institutions (RFIs) and what is the performance of Rural Finance Institutions (RFIs).Pantulu (1994), evaluated the role of Cooperative credit institutions on agricultural finance and found that to a small extent, productive credit dispensed by the societies doubtlessly benefited the agriculturists though it only provided another source of borrowing. Kulwant Singh S.K. (1996), in his work, analyzed and found that in recent years, the requirement for crop loans has assumed significant dimensions due to the increasing thrust for the development of new technology in the agricultural sector. Maji et al. (1996), have made an investigation into small farm diversification in the state of West Bengal. The study has investigated how the income of the farmers can be raised by switching the emphasis from low-value subsistence cereal crops to high-value subsistence cereal like Fruits (Grapes) and vegetables (like Tomato, Onion & Potato) Llanto et al.(1996), examined the components of transaction costs of lending to the poor by taking two non-governmental organizations in the Philippines. Arutselvam et al. (2000), in their study entitled "Agricultural credit-A Study in Villianur Block of Pondicherry Region" concluded that the repayment is regular for crops since the farmers need the credit for the next season. Hence, the payment is regular and complete. But in the case of the long-term loan, huge amounts are outstanding. From the discussion with the farmers, it was observed that they are not interested in repaying because it will get canceled at the time of the election. Vincely Jebakar S. (1997), in his study, found that co-operatives are the significant institutional agencies, and the other institutional agencies consider the financial requirements of the farmers. Razak (1998), conducted a study on the analysis of the utilization of Cooperative credit by marginal, small, and large farmers with references to a case study of Bantwala Taluk in Karnataka. The main finding of this study was that the marginal farmers brought more percentage of their land under cultivation when compared to small farmers. In the case of marginal farmers, which was 75.3 percent of their total landholding whereas 67.68 percent in the case of small farmers. Satyasai et al. (2000), examined the performance of rural credit cooperative institutions in India. They observed that growth in lending has been cramped by the decline in the growth of the resources. Amuthasurabi et al. (2001), in their article, stated that the policy formulations should arise in a new way to achieve the goal of food security through sustainable agriculture and rural development coupled with environmental extension. Choyal (2002), reported that the Agricultural Credit Co-operative societies are giving less importance to providing long-term advances to agriculturists. But for the long-term improvement

in the agricultural sector, like land development, development of irrigation facilities, and purchase of machinery much importance could be given to long-term Agricultural Co-operative advances so that, it could be adequately available to the needy agriculturists. Anandteerth P. et al.(2003), in their study nearly 20 micro-level studies were conducted in various parts of India from 1967 to 1991 on defaults of crop loans. They concluded that crop loans have been defaulted by all categories of farmers, both wilfully and non-wilfully. Datta (2003), constructed the transaction cost incurred by small farmers in India by collecting the data from a sample of 700 borrower households across the country. Remji D. (2005), in his study entitled Crop Planning and the Performance of Primary Co-operative Credit Societies, revealed that the over dues of Co-operative Societies had increased mainly because of the weak and poor financial condition of the farmers and the farmers are not utilizing the sanctioned amount for that particular purpose. Sivanappan R.K. (2006), in his article, collected the flow of institutional credit for agriculture and industry in India from 1997-to 98. Agricultural credit was only 34,375 crore compared to industrial credit of about 4, 00,000 crores. Ranade et al. (2006), evaluated the transaction cost of lending in rural finance and found out that the high transaction cost coupled with the cost of delivery and risk of loss provisions was a major constraint for banks and other lending institutions. Akram et al. (2008), identified agricultural credit restraints and borrowing behavior of farmers in rural Punjab and reported that the majority of the farmers could not avail of credit because of needed collateral. Goswami D. et al. (2021),constructed the six reasons why members join the Primary Agricultural Credit Co-operative Society, to get a fair price for agricultural products, to avail of loans at the cheapest rate, to get the benefit of government schemes, to get a concession from co-operative, to get a fair return for investment and to support certain political party.

Consumer Attitude, Satisfaction, and Employment Generation

Prashant et al. (2014), analyzed the credit utilization through the Co-operative Society in Bhind district of Madhya Pradesh by collecting data from Agricultural Credit Co-operative Societies from 12 villages. The results revealed that 48 percent of the farmers had completely utilized the availed credit. Innocent et al. (2014), assessed the effects of Farmer's Co-operatives on agricultural development in Kwali area council, Nigeria by collecting data from 80 executive members and 200 non-executive members of registered Co-operatives. From the study, it was obvious that there was a significant impact of Cooperatives on agriculture in terms of creating employment generation and raising the living standards of farmers. Shejal, S.S (2013), in his study entitled Role of Commercial and Cooperative Credit in Agriculture and industry in Sangli reveals that credit is required to purchase the inputs. Fertilizers and irrigation share 40 percent of agriculture production. Sankaroiya et al. (2012), in their study, found the status of rural credit in Andhra Pradesh: An Assessment discloses that Cooperative Banks in Andhra played an important role in financing the agricultural and allied activities.Devi et al. (2012), examined the role of Credit Cooperatives in the agriculture development of Andhra Pradesh. From the study, they established that Co-operatives provided not only credit facilities to farmers but also provided agriculture inputs, fertilizers, and pesticides. Therefore, farmers benefited to the

maximum through an increased level of output which in turn increased the employment and income of the farmers.

Anil S. Memane (2012), in his study found, the performance of Primary Agriculture Credit Co-operative Societies during 2000-01 to 2009-10 in India, concluded that Agriculture Co-operative Credit Societies are working positively. Though there is negative direction found in the establishments in several societies the total numbers of members are increased during the ten years of 2000-01 to 2009-10. Farmers are depositing their money in society and they have a faith in the process and working pattern of Primary Agriculture Credit Co-operative Societies. Chughtai (2012), estimated the impact of utilization of agricultural credit on production based on primary data collected from 285 farmers who borrowed from Zaria Tara qi bank in the study area of Rawalpindi Tehsils from Pakistan. From the study, it was found that the borrowed amount was mainly utilized for agricultural inputs, especially for the purchase of seeds, fertilizer, and pesticides. Chandrasekhar S. et al. (2011), in their study, constructed that the borrower achieved a comparatively rise in crop productivity. There is an improvement in irrigation facilities because the good use of fertilizers and other inputs were the decisive forces. Ganesan (2009), collected the progress information of Primary Agriculture Credit Co-operative Societies in India. The study covered three years (2002-04). According to the findings of the study, Primary Agriculture Credit Co-operative Societies directly interfaced with individual farmers and provided short-term and medium-term credit. It was observed that the viability of Primary Agriculture Credit Co-operative Societies was essential for the development of agriculture and the rural economy of our country. Nidhesh K.B. (2009), in his study, has explained the importance of primary co-operative banks in providing credit to rural poor and he suggested improving the service and performance of Co-operative Banks. He has observed the role of cooperative Banks in the fulfillment of the credit needs of the financially poor farmers and beneficiaries in the rural areas.Oladeebo et al. (2008), examined determinants of loan repayment among smallholder farmers in the Oyo state of Nigeria. The study revealed that the number of loans availed by farmers, their experience in farming with credit use, and their education were the major factors that positively and significantly influenced loan repayment. Yadav (2008), assessed the credit flow to agriculture in Rajasthan, to find out the progress of the implementation of the Farm Credit Package. It has also been observed that farmers are not aware of the benefit of the Kisan Credit Scheme. Raghavan E. (2008), in his article, made a strong plea for the role of co-operative in removing rural poverty in India. He stressed that the cooperative can reduce poverty only through agricultural development. He also stated that agricultural development requires several inputs like credit, marketing, and processing. Amuthasurabi J et al. (2001), in their article entitled Sustainable Agricultural Development has stated that the policy formulations should arise in a new way to achieve the goal of food security through sustainable agriculture and rural development coupled with environmental extension. Subrahmanyam et al. (1996), based on 62 farmers from Chickbalapur and Malur Taluk in the Kolar district of Karnataka have examined the current status of cultivation of horticultural crops by small cultivators, in the light of liberalization. Ramesh Chand's study (1996), deals with the possibility of increasing employment and income

with high-value horticultural crops in this region. It increased the income by 2 to 23 times as compared to other crops in irrigated areas, and 3 to 40 times in un-irrigated areas. The study states that infrastructure, access to road, marketing, and irrigation determines, the success and profitability of diversification. Jeevanandam J. (2019), identified how women's self-group supports the socio-economic development of women insociety. Primary Agricultural Credit Co-operative Society gives particular attention to women because they comprise half of the country's population and they remain the most disadvantaged sector among the poor. Yet it is the women who prove to be most effective in fostering change in their families and communities.

Technology and the Green Revolution

Shiv Karan Singh et al. (1981), in their study, examined the role of credit and technology in increasing income and employment on Small and Large farms in the western region of Hyderabad District of Andhra Pradesh. They constructed that the adoption of modern technology has led to a marked rise in incomes over and above the attainable levels of income with the use of adequate credit at the currently practiced advanced technology and the use of family members for cultivation work increased substantially.Kalyankar S.P. (1983), in his study, constructed that the introduction and widespread use of new and advanced technology involving intensive application of modem inputs has given rise to increasing demand for credit from the agricultural sector. Oladeebo et al. (2008), examined determinants of loan repayment among smallholder farmers in the Oyo state of Nigeria. The study recommended that for effective farm management and an increase in agricultural production, disbursal of loans should be targeted at young and better-educated farmers who were more likely to adopt innovations in agricultural production than their predecessors.Anandaram et al. (1999), studied the role of Co-operatives in the social development of the Indian economy and showed that the financial need of the farmers was taken care of by the PACS through lending activities. It was estimated that about 65 percent of the rural credit was being taken care of by Co-operatives. Besides these Rural Cooperatives have also been involved in the procurement and distribution of the inputs required for agricultural purposes. Through these activities, quality inputs were made available to the farmers at optimum prices. The study also suggested that good leadership and willpower of the concerned authority were required to strengthen the Cooperative movement. Devi et al. (2012), found the role of Credit Cooperatives in the agriculture development of Andhra Pradesh. From the study, they established that Co-operatives provided not only credit facilities to farmers but also provided agriculture inputs, fertilizers, and pesticides. Suryakumari L. (1999), revealed that credits had a significant impact on output. Hence, it is evident that the borrower farmer achieved a rise in crop productivity and the institutional credit has a significant impact on output.Verma et al. (1983), estimated the demand for bank credit in the agricultural sector in India as part of credit planning based on the level of output and prices. The study disclosed that the demand for bank credit was positively related to the adoption of new technology and the cost of production in the agricultural sector of the economy. Rao S. (1980), observed that crop loan utilization took place only due to effective and efficient training of the bank staff. However, within the target group, the distribution of gains was positively associated with the assets. Zhang, S. et al. (2020),found

separate analyses on the adoption of production and post-harvest technologies. These technologies revealed that cooperative membership has an insignificant impact on the number of adopted production technologies, but it significantly increases the number of post-harvest technologies adopted. These empirical findings were in line with the new institutional economics theories and their observations on the ground.

Recovery and Repayment Performance of Primary Agricultural Credit Co-operative Societies

Singh et al. (1982), in their study, constructed that the magnitude of over dues was lowest with landless laborers. The less recovery and dues in the case of small and marginal farmers could be described as the diversion of funds for consumption purposes.Gupta et al. (1984-1985), evaluated the working of the District Central Cooperative Bank, Kutch, and (Gujarat). They have concluded that the bank should strengthen its recovery process and train the staff, impart an effective member's education program, and increase its business of loaning, deposit mobilization, and branch banking if the District Central Cooperative Bank has to play the role of a catalyst of rural transformation.Balwant Singh et al. (1986),in their study, revealed that deposits mobilized by the Co-operative Societies were mostly advanced as loans. There was a drastic increase in over dues. They also stated that the test of business success is profitability. Rengaraj V. (1987), in his work entitled Over dues of Primary Agricultural Credit Co-operative Societies with particular reference to Madurai district, has suggested the maintenance of up-to-date land registers in societies and fixing of due dates for a loan based on seasonality. Satyasai et al. (2000), examined the performance of rural credit co-operative institutions in India. They observed that growth in lending has been cramped by the decline in the growth of the resources. Lending by Primary Agricultural Credit Co-operative Societieshas been more seriously disabled because the resources of Primary Agricultural Credit Co-operative Societies have decelerated at a faster rate than that of the higher tiers. These trends may be partly due to the entry of Commercial Banks and Regional Rural Banks into the rural credit business, which must have led to laxity in the Co-operative sector. The poor recovery of loans coupled with high transaction costs and lower level of loan business resulted in losses worth a large amount and thus, low financial viability. Balishter et al. (1989), made a study on Crop Loan Over dues of the State Bank of India in Agra intended to examine the reasons for non-payment of crop loans by defaulters. They have observed that low crop yield, inadequate finance, crop failure due to natural calamities, delay in disbursal of loans, and lack of supervision of loan utilization were the reasons for the non-repayment of dues.Patnaik U.C. et al. (1991),in their article empirically examined the effectiveness of recovery management practices of rural banking institutions. They observed that the emergence of the write-off concept has encouraged the borrowers towards non-repayment of loans.Mruthynjaya et al. (1992),in their article on Credit utilization and over dues on marginal and small farmers in the Aligarh district of U.P. stated that nearly 70 percent of crop loan was diverted for crop production and the rest was diverted for other purposes.Pantulu (1994), evaluated the role of Cooperative credit institutions on agricultural finance and found that to a small extent, productive credit dispensed by the societies doubtlessly benefited the

agriculturists though it only provided another source of borrowing.Arutselvam et al. (2000), in their study, concluded that the repayment is regular for crop loans since the farmers need the credit for the next season. Hence, the payment is regular and complete. But in the case of a long-term loan, huge amounts are outstanding. Petrick et al. (2003), investigated credit access and borrowing costs in Poland's agriculture credit market and reported that the main determinants of borrowing costs were the nominal interest rate and additional transaction costs faced by farmers. Prasad (2006), conducted a study on recovery performance and volume of overdue of nine selected Primary Agricultural Credit Co-operative Societies working in the West Godavari district of Andhra Pradesh. The study revealed that a quite interesting and debatable feature of the societies was that the volume of overdue had increased along with the quantum of credit. Onyenucheya et al. (2007), studied loan repayment and creditworthiness of farmers in Abia state by using a semi-log regression model. The result showed that farming experience, total operating expenditure-income ratio, farm size, level of education, and age of farmers made positive contributions to creditworthiness, while outstanding loan-asset ratio, operating expenditure-income ratio, the distance between home and loan source made negative contributions to creditworthiness.Oladeebo et al. (2008), examined determinants of loan repayment among smallholder farmers in the Oyo state of Nigeria. Their study revealed that the number of loans availed by farmers, their experience in farming with credit use, and their education were the major factors that positively and significantly influenced loan repayment. Nasrin et al. (2014), examined the disbursement and recovery performance of rural credit of Rupali Bank of Bangladesh in the agricultural and industrial sectors. The recovery performance of the business sector is high when compared to the agricultural sector.Tripathy, K. K. et al. (2021), concluded that participation, accountability, and transparency were the effective pillars of cooperative governance in the presence of a diversification strategy which further leads to improved competitive performance of Kerala's Primary Agricultural Credit Co-operative Societies. The competitive process led by good governance has been demonstrated as a key determinant for the growth and development of cooperatives. Good practices of Primary Agricultural Credit Co-operative Societies enhance the reputation and stakeholder value of the cooperatives in the long run.

Comparative Study

Deganokar (1994), conducted a comparative study of credit flow from different institutions and the borrowing and utilization pattern in a backward region of Gulbarga Taluk in Karnataka. The credit output relationship is studied with the help of the Correlation Coefficient.Srivastava B. (2004), in his book Crop Loan of Agriculture in India, pointed out that more than half of the crop loans and advances provided to farmers came from cooperative banks and cooperative societies. He also pointed out that over dues were high in commercial banks, the main causes being a diversion of loans from productive purposes to unproductive purposes, inadequate supervision, unsatisfactory management, political, functional, and other considerations. Kailash Sharma (2005), in his article, revealed that the share of Cooperative credit institutions in total agricultural credit had declined in the last decade whereas the share of Commercial banks and Regional

Rural Banks had increased during the same period. Akhilesh Kumar Singh et al. (2005), in their study, collected that the major financing to sample borrower farmers was contributed by Commercial banks followed by U.P. Cooperative Rural Development Bank and Primary Agricultural Credit Cooperative Societies. This was since Commercial banks have opened their branches in rural areas, which helped the borrower farmers to borrow the loans with the least difficulty. Llanto et al. (1996), examined the components of transaction costs of lending to the poor by taking two non-governmental organizations in the Philippines. They derived the conclusion that there existed an inverse relationship between an organization's transaction cost and its number of years of existence. The NGO while lending to the poor, provided very small loans, at relatively short-term maturities, and with higher collateral security.

Kalidas et al. (2014), conducted a study on the inadequacies of the institutional agricultural credit system among 130 farm households covering four blocks of the Coimbatore district. The study revealed that the flow of credit to the agriculture sector was inadequate despite the presence of a large number of financial institutions. Selvi (2014), in his studies, aimed to assess the trend in priority sector lending made by the commercial banks in India. This study supplied the information stated that nearly 47.51 percent of retail loan lending by commercial banks are in the form of housing loans, 47.94 percent are auto loans, 3.46 percent are loan lending through credit cards and 1.10 percent of loans are for the purchase of durable goods by households.Godara et al. (2014), in their study, examined the main issues and concerns of agricultural credit in India by using secondary as well as primary data collected from 90 farmers of six banks across three districts namely Jind, Sirsa, and Bhiwani of Haryana state by the method of convenient sampling. Gandhi Mathi et al. (2010), in their study entitled Determinants of Borrowing Behaviour of Farmers – A Comparative Study of Commercial and Cooperative Banks revealed that small farmers have a higher number of accounts in crop loans. However, the total amount sanctioned was higher for the medium farmers. Small farmers have been the major beneficiaries of investment loans. The cultivation of coconut and turmeric crops is higher so the commercial and cooperative banks have provided higher loans for coconut and turmeric crop cultivators.George. P.T. et al. (1985), have done case studies of the two cooperatives one successful (Mulkanoor cooperatives bank) and the other unsuccessful (Ela Karthurthi large scale cooperative society) within the same Agro-Climatic and Socio-economic environment. According to their study, committed and continued leadership, effective participation of members, sound business practices, etc. are the factors that facilitate a successful venture. On the contrary selfish leadership at the top, the indifference of the 77 members towards the cooperative activities, the absence of vertical integration of activities, etc. characterizes the unsuccessful cooperative venture. In other words, the Case studies pinpoint that the cooperatives can be effective Institutions for the development of the rural poor.Rajasekhar et al. (1990), studied a special reference to the growth of over dues in twenty-six branches of Rajasthan representing Canara Bank, Regional Rural Bank, and Primary Agricultural Credit Co-operative Societies. The study has revealed that structural problems such as complicated procedures in sanctioning loans, and inadequate and untimely loans also contribute to the problem of over dues.

Research Gap

After examining the secondary data thoroughly, the research gap identified was customer attitude and satisfaction toward agricultural credit. However, there was no research study found related to customer attitude toward agricultural credit by the Primary Agricultural Credit Co-operative Society.

CONCLUSION

This review-based research paper identifies the current status and research gap and analyses the research agendas related to possible strategies of utilizing society funds for productive purposes to fulfill the objective of the client's attitude towards agricultural credit for improving the economic status of the beneficiaries, retaining existing and attracting new customers. According to a study done by Akram et al. (2008), identifiedPrimary Agricultural Credit Co-operative Societies are double-pronged instruments designed to fight against the contagion of rural indebtedness and to improve a lot of the poor peasants. Therefore, Co-operatives worked not only for agricultural development but also for the overall development of farmers. They provide credit both for production and for other purposes on easy terms and also educate them to practice modern methods of high yielding cultivation and inculcate in them the habit of thrift, frugality, and self-help. Loans granted for debt redemption and purchase of land is declined to the bottom level over the years. On the other hand, the advances in to purchase of tractors, installation of tube wells and other land improvement programmers registered a substantial growth with time. Prashant et al. (2014), constructed,Primary Agricultural Credit Co-operative Societiesattempt to make cultivators their masters and encourage them with the necessary money and materials to increase agricultural production for their advancement and the nation's economic development. Further, misutilisation and diversification of credit by the farmers, proper supervision over the utilization of loan amount by the bankers. No attempts were made to reduce the operational cost, lack of computerization, there was no professionalism and most of all Primary Agricultural Credit Co-operative Societies were not following appropriate norms for lending and recovery of loans. Even though there are numerous co-operative societies, the current study is limited to only Primary Agricultural Credit Co-operative Societies.For a better perspective, society should also identify the changing buying behavior and encourage the customer by lending long-term loans at a low rate of interest.

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TAJMMR: Trans Asian Journal of Marketing Management Research
ISSN: 2279-0667 Vol. 13, Issue 7-8-9 July- Aug-Sep, 2024 SJIF 2021 = 7.263
A peer reviewed journal

A STUDY ON THE FACILITIES LOCATIONS AND TRANSPORTATION ACTIVITIES IN THE SUPPLY CHAIN MANAGEMENT ON FIRM'S PERFORMANCE

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DOI: 10.5958/2279-0667.2025.00006.X

ABSTRACT

Purpose

The main objective of this paper is to study the effect of facility location and transportation factors in the supply chain management practice on firms' performance.

Methodology

To realize the specified objective of the paper data were gathered from 196 respondents in seven companies operating under three different types of industries operating in Ethiopia. Before applying Confirmatory Factor Analysis in AMOS, explanatory factor analyses were made by principal components analysis in SPSS to prove whether the respondents correctly understand and filled the survey. Further, reliability and validity test were made and proved that the results are satisfactory to proceed. To answer the research objective three hypotheses proposed and tested by structural equation modelling (SEM).

Result

The result indicates that facility location and transportation factors in the supply chain management have direct and significant effects on organizational performance. Further, the result also show the existence of indirect effects of location factors on firms performance when transportation factors acts as intermediary variable between facility location and organizational performance.

Conclusions

In general, the result of this study theoretically fill the gap of literature in the specified area of study in developing countries; and practically the result allows the companies under considerations to use the result of the study to improve current performance and to use the result as inputs in planning locations decisions in case of business expansion or new business development. The novel contribution of this study is its examination of the effects of facility

locations decisions and transportation activities in integrating supply chain activities and leading to higher organizational performance; and the mediating effects of transportation between facility location and organizational performance.

1. INTRODUCTION

Supply chain management is more than efficient movement of goods from its origin to destination point. There are several types' of strategic and operational decisions to be made in supply chain management in order to serve customers better and operate efficiently than* competitors. Among the important decisions to be made is a location decision from the side of strategic decisions and transportation decisions from operational side to realize an efficient supply chain practices. Location issue is an influential decisions relating to where to locate plants, distribution and collection centers. Where to locate facilities is a strategic decision to be made by companies in the supply chain management (Van Mieghem, 2001). Location decision is also becoming important decisions with increased cost of distribution (Pishvaee et al., 2010). Similarly, as Christopher (2005) specified decisions of where to put plant is a basic determinant of profitability in international logistics. These days, decisions of facility location are more important than before due to the concern for environmental issues, and different legal impositions by government that force a firms to practice reverse supply chain; where defective products, hazardous end products, excess inventory or recycling of used products are needed to be moved in reverse flow (Jayaraman, and Patterson, 2003).

The decision of facility location is determination of the right geographic site for a firm's operations (Krajewski, 2007); and similarly facility location is the decisions of establishing proper location for a company in the supply chain (Arabani and Farahani, 2012). The decision of facility location is extremely important to achieve efficient supply chain practices to expand to the new markets, for cost minimization and for re-collection of end of life products or defective products from consumers for recycling or proper disposal (Thanh, 2009). The right facility location enables firm to serve customers' efficiently within minimum possible time and delivery cost (Harris et al., 2014). The performance of supply chain management is extremely subjected to location selection (Heizer and Render, 2006); where key decisions relating to capital allocation and service to customer are affected by facilities location decisions.

In existing dynamic and competitive globalized business environment finding the best facility locations is a difficult task for decision makers. In advance for locating a business in a specific location, there are a number of factors that needs to be considered for better customer services, cost minimization and revenue maximization. Numerous researches made around facility location decisions identified different factors to be considered in selection of right facility location. The major factors to be considered are availability of skilled labor, taxes and environmental regulations, and transportation infrastructure (Dogan, 2012); accessibility of reliable and quality modes of transport, nearness to marketplace (Bello, 2007); proximity to raw

material, and transportation costs (Hilmola et al., 2010); and costs, availability of labor and infrastructure (Acosta et al., 2010); and Costs, proximity, quality of workers, availability of infrastructure, and tax effects (Chopra and Meindl, 2010). FLD affect delivery time and flexibility (Mazzarol and Choo, 2003).

Besides, the decisions of facility location supply chain management concerned with transportation of raw materials and finished products in the distribution channels. Sustained and effective freight transport is fundamental for the economic development (Kuse, 2010); and the improvements in physical distribution can yield tremendous improved supply chain performance for supply chain partners (Kotler& Wong, (n.d.). A good transport system in logistics activities could provide better supply chain performance by reducing operation cost, and promoting service quality. Hence, transportation plays the key role in moving and integrating people and raw materials. Transportation activities have the potential to integrate and improve the overall national and international economic growth through supply chain linkages by making the products available from the surplus area to shortage area. Effective and efficient transportation also improve the perceived value of particular firm's products by making easily available everywhere, and offering faster delivery. The scope of transportation issue is comprehensive and complicated. A transportation issue includes decisions relating to selections of the right modes of transportation, minimization of transportation cost and time, shortening lead time, loading and unloading time for on time delivery, flexible delivery, and overall customer satisfaction.

Generally, this paper broadly aims to investigate the effects of facility location and transportation in the supply chain practices on firm's performance. Specifically, to achieve the stated objective of this paper, three basic questions answered by the researcher. The questions are: what is the effect of facility location in the supply chain management on firm's performance; what is the effect of transportation in the supply chain practices on firm's performance and what is the intermediary effect of transportation between location factors and firms performance. Finally, this paper is arranged in five basic sections; where the first section is introduction section, second section is review of the literature; section three is research methodology, section four is results and discussion and the last section is conclusion, limitation, and future research direction.

2. LITERATURE REVIEW

2.1 FACILITY LOCATION

The basic issues to be answered in the facility locations are where to locate and how to size facilities? How to meet customer demands from the facilities? Which facilities serve each customer? How much customer demand is met by each facility? The need for highly dealing with facility location decision in the supply chain management and considering the issue as part of the firm's strategic issue is for the long-term impact of the decision on the firm performance.

Facility location influence efficiency of supply chain management by influencing inventory level and cost, delivery cost and time, and for quick response to customer request. Research shows strong relationship between location problem and inventory (Shen et al., 2003) and the existence

of linear relationship between transportation cost and location (Shen and Qi, 2007). Generally, for right locations decisions there is a need to consider availability infrastructure, raw materials, nearness to consumer, and availability of cheap and skilled labor to offer quick service delivery at minimum cost and to offer quality service to improve supply chain performance. Therefore, for the smooth flow and cost effectiveness of all these activities locations of the networked facilities have significant impact on firm's performance (Wang, & Yang, 2014).

Facility location in forward supply chain has been extensively studied in the operation research from the angles of the quantitative aspects of cost minimization disregarding qualitative features supporting the competitive advantage. However, facility location decisions for closed loop supply chain practices is more complicated issue relative to location decisions in a traditional supply chain practices since the strategic decision makers needs to optimize the bidirectional supply chain practices. In a traditional supply chain the concern of strategic manager is only the way to minimize cost and maximize profit by focusing on the flow of raw materials and finished goods along the downstream. However, in a closed loop supply chain practices firms need to consider again the effectiveness of the locations for reverse flow of end of life products, defective products or excess inventory to be flow back in the reverse supply chain. Toni and Tonchia (2001) revealed facility location largely measured from the traditional cost based view performance than the advanced non-cost measures as quality, flexibility and time based performance; Melo et al., (2009) also measured commercial success and competitive advantage of the location advantage of the firm on the basis of distance from customer, time and costs taken in delivering the product; Achillas et al. (2010a) measured right facility location from aspects of social, economic and accessibility of the facilities.

Also large number of supply chain dimensions such as minimum lead times, flexibility of productions and delivery, and target corporate objectives are highly influenced by decisions relating to facilities locations (Koskinen and Hilmola, 2008; & Hilletofth, 2009). A right location decision enable supply chain to be responsive besides keeping associated costs low, whereas a wrong location decisions makes supply chain performance to be inefficient (Chopra and Meindl, 2010). Generally, there is a strong relationship between flexibility, responsiveness quality, and inventory turnover in the supply chain of firms with facility location (Bhatnagar and Sohal, 2005).

The studies made by different scholars on the issues of facility location identified a wide range of variables to be considered in facility location decisions. Some of the results of these studies are, the result of Badri et al. (1995) were they identified availability of transportation facilities and raw materials, industrial sites, utilities, government attitude, tax structure, community outlook, economic and political related factors; Ray (1995) pointed capacity of suppliers; proximity to suppliers' and market, transportation cost; existence of adequate facility, cost of land and labor, accessibility of skilled labor; attractiveness of the environment, government strategies relating the planned location; and Kupke and Pearce (1998) identified proximity to the market and accessibility to roads facility as two most important determinants of facility location factors.

2.2 TRANSPORTATION

Effective means of transportation make raw materials and finished goods to be available at the right place and right time for manufacturers, distributors and consumers. From variety of transportation system, freight transportation plays significant roles in coordinating and integrating all the supply chain partners from upper stream to lower stream. Freight transportation is the key component in integrating supply chain partners by extracting raw materials and moving to producers; and move finished products from production site to consumption center; and reverse back fault products, excess inventory or defective products from mass consumption to manufacturers for desired purposes. As Kuse (2010) pointed persistent and active freight transport is essential for the economic development, and efficient physical distribution in the supply chain enhance firms performance (Kotler& Wong, (n.d.). Also, freight transportation support flow of commodity in the global market and supply chain partners from extraction of raw materials to distribution of final products to market (Nijkamp 2003).

The movement of raw materials, and finished goods in the in the supply chain takes place either through private carriers or public carriers; where very carrier use different modes of transportation, including road, rail, air water, and pipe lines (Chopra &Meindl, 2004). The selection of these carriers needs to consider nature of products, cost of transportation, value of the products, availability of facilities, and distance between production and consumptions centers. Also the selection of the right mode of transportation needs the considerations of the speed of movement, regularity of services by the firms', service dependability, potential of loss and damage rate of the products by the specified modes of transportation, and convenience of service (Talley, 2006). Similarly, carriers can actually differentiate themselves by proving their ability in cost reduction, building high competitive advantage and creating strong supply chain practices (Neeraja et al., 2014).

Also, the mode of transportation is an important consideration when desiring certain target level of supply chain performance. Transportation mode compounded with uncertainties that seriously affect performance of supply chain (Sheu et al., 2005). The most important consideration in the selection of a particular mode of transport is its cost since nearly one third of the total cost of logistics operations is transportation cost (Alan et al., 2006). Similarly, another study show of dealing with transportation issue since 1/3 to 2/3 of enterprises' logistics costs are transportation cost and the cost of transportation on average account 6.5% of market revenue and a fall in transportation cost by one unit leads to inventory costs to be dropped in triple (Wilson, 2004).

The right mode of transportation is the modes that results the shortest time and minimum cost path between source and consumption point. Transportation model have a critical impact on supply chain performance since the adopted modes of transportation affect reliability and dependability on the mode, quality of service to be offered, capacity to be loaded, delivery time, and cost of transportation. Generally, the right mode of transportations are modes with minimum cost (Ben-Tal et al, 2011; & Safeer et al., 2014), minimum time (Yuan and Wang, 2009) and minimum risk of transportation (Safeer et al., 2014), and minimum loading and unloading time

(Barbarosoglu et al., 2002) that enhances the overall performance of the firms.

The other factor to be considered in transportation issue is road network. As Parmar& Shah, (2016) stated a road network shows the standard of roads, its connectivity and accessibility. Parmar& Shah also added that poor road network connectivity makes supply chain management uncertain and disrupt transportation and creates customer dissatisfaction, low customer responsiveness and low on time delivery. Road network design is determination of the routes, allocation of the resources and evaluation of its reliability (Safeer, et al., 2014). A poor and inadequate road network can creates a traffic congestion that results traffic delay (Weisbrod et al., 2001). Further, congestion can create delay and uncertainty in logistics practices that decrease customer satisfaction, increases holding cost and level inventory and make capital unproductive (Disney et al., 1997).

Further, decision of transportation needs to consider lead time. Lead time is a time between placements of an order to acceptance of product ordered. It is a function of order processing time and time to be taken by carrier on delivery. An average waiting time/ lead time minimization is creating a new means of competition between producers (Kingman, 1989). The effects of lead time variability studied by many researchers. For example, Song (1994) studied lead time effects on firm's performance; Treville et.al (2004) proved an improved in lead time enhance time of delivery; Kim (2005), and Song et al. (2010) analyze the effect of lead-time variability on optimal inventory control policies and the resulting total costs under standard inventory control policies; and Chaharsooghi and Heydari (2010) shown the significant impact of lead-time variability on performance of inventory levels, product availability and the bull whip effect. Unexpected delays at loading or unloading points, failures within the distribution network and unforeseen situations negatively affect efficiency of supply chain management (Stajniak, Hajdul, Foltynski, &Krupa, 2008).

2. RESEARCH MODEL AND DEVELOPMENT OF HYPOTHESES

The assumed model is given on Figure 1. The model portrayed on Figure 1 shows the effects of location and transportation factors in the supply chain management on organizational performance. The researcher examined both the direct and indirect effect of location factors on firms' performance and the mediating effect of transportation factors on the relationship between location issues and firms' performance. The proposed theoretical model given on figure 1 show that transportation issues mediates the effect of location factors in the supply chain activities on organizational performance. The researcher proposed three hypotheses based on the constructed model given on Figure1.

The first proposed hypothesis related location factors with supply chain performance. As discussed in the introduction section and review of related literature section, location factors are the strategic decision making in the supply chain management that can affect the financial and non-financial performance of firms. This particular paper analyzed three indicators as components of latent variable location factors. The indicators used are proximity of the location

to market, proximity to resources and availability of infrastructure in the location. The researcher proposed the first hypothesis as:

H1: Location factors are positively related to firm's performance in supply chain practices.

The second hypothesis developed related transportation facilities in the supply chain management with firm's performance. Given that the transportation is the heart and influencing factor for the success of supply chain management, it is unquestionable that favorable transportation factors fosters firm's performance in the supply chain practices. Transportation can facilitate the free flow of inputs and outputs among the supply chain partners and creates time and place utility by moving raw materials, intermediate goods and finished goods at the right time to the right place. Therefore, transportation can serve as a catalyst in integration of supply chain partners and enhancement of the overall performance of the firms.

Similar to location factors, the researcher selected five indicators for the second latent variable of transportation factors. The selected indicators are the mode of transportation, transportation cost, average lead time, average loading/unloading time and road quality. Generally, well-developed transportation facilities facilitate movement and communications that can decrease transportation cost, enables firms' to be customer responsive, and decrease firms delivery time to customer request. Thus, the second proposed hypothesis proposed as:

H2. There is a positive relationship between the transportation factors and firms' performance in the supply chain management.

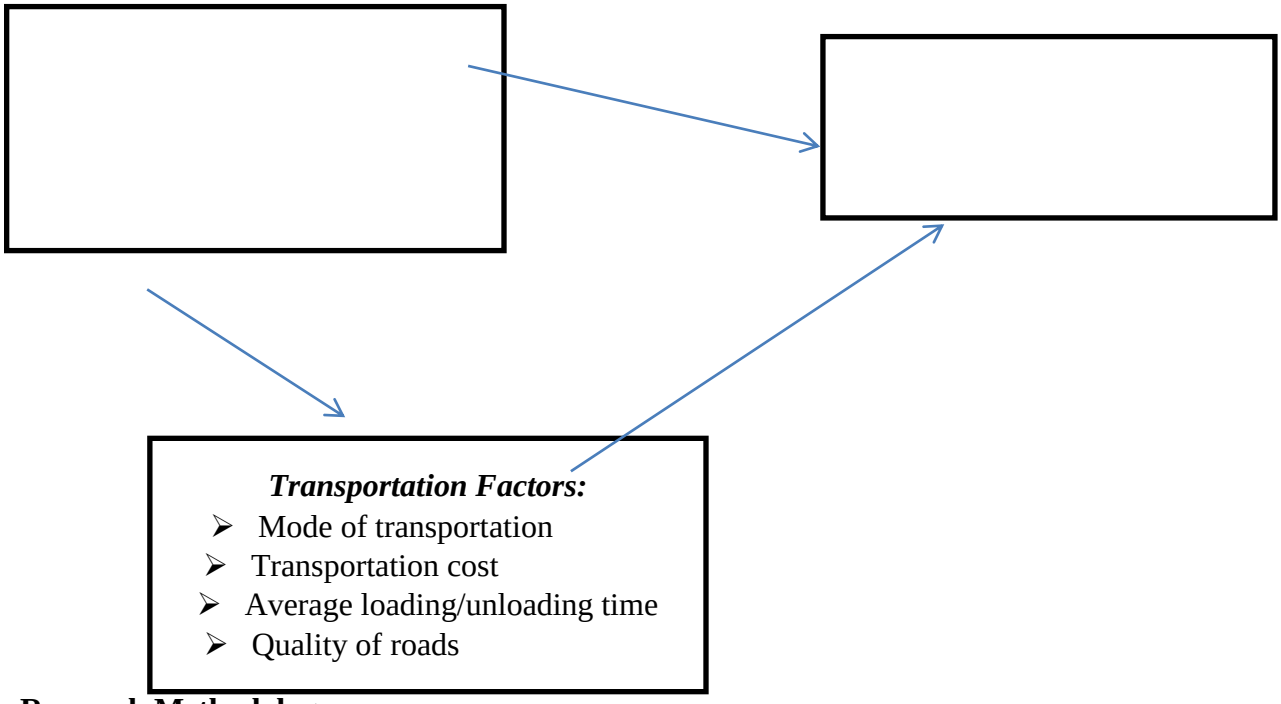
The third hypothesis developed based mediating effects transportation between location factors and firms performance. From the developed conceptual model, the transportation factors denoted as mediating variable between location factors and firms performance in the supply chain practices. The mediating effect specifies how a given variable affects the relationships that exist among other variables. In this research the researcher specified that location factors directly influence firms' performance in the supply chain practices. Also transportation factors improve the movement of resources between supply chain partners so that inputs and outputs can be easily moved to the right place at the required time; these in turn improve firms' performance. Furthermore, the model specified transportation factors as a mediating variable between location factors and firms performance. The direct and indirect effects of location factors on firms' performance in the supply chain practices is decomposed and interpreted by structural equation modelling, where the indirect effects of transportation factors are interpreted as the result of mediating effects of the variable on firm's performance. Therefore, the third hypothesis proposed as:

H3: location factors positively related transportation factors.

A framework displayed on Figure1.shows the relationship between location factors and firm's performance, the effects of location factors on transport factors, and the influence of transportation factors on firm's performance in the supply chain practices. Therefore, this

research empirically investigated the linkages between the above-mentioned four dimensions of transportation factors namely, mode of transportation, transportation cost, road quality and average loading and unloading time with the three dimensions of firm's performance namely cost, customer responsiveness, and delivery time. Similarly, the effects of location factors from the dimensions of proximity to markets, proximity to resources and infrastructure availability of the location on the firm's performance in the supply chain practices from the location dimensions. Furthermore, the paper investigated the mediating effects of transportation factors on the relationship between location factors and firm's performance in the supply chain practices.

Figure 1. Conceptual framework of the study



4. Research Methodology

To test the three hypotheses developed from the conceptual framework given on Figure 1, data were collected from seven companies operating in Ethiopia. The sample frame used for this study contained dairy, beer, and cement industries operating in Ethiopia. The organizations taking part in the survey are two dairy factories, three cement factories and three beer factories that are located in and around the capital city, Addis Ababa, Ethiopia. The companies were selected based on the criterion of their long duration they stayed in operation, capital size and the volume of their production; and 205 respondents purposively selected from seven specified companies based on their expertise on the specified issues of the paper to be used as a sample of the study.

To test the hypotheses a survey questionnaire of five-point Liker scales of responses ranged from (1) strongly disagree to (5) strongly agree were designed based on extensive literature review. The total survey questionnaires initially distributed to the target respondents to be used for this study is 205 respondents, however only 196 or around 96% of response rate of survey questionnaires were collected back from the respondents.

5. Results and Discussions

The collected data analysed using SPSS Version 20 and AMOS software package version 23 to test the proposed hypotheses. In the analysis first an Exploratory Factor Analysis (EFA) of a Structural Equation Modelling (SEM) was used to test the proposed model. Structural Equation Modelling consists of two basic components as structural model and measurement model. In order to test the accuracy of the conceptual model, the most common method encountered in the literature on structural equation modelling is a two-stage method consisting of measurement model and structural model. In the first stage, the measurement model is tested; in the second stage the structural model is tested. The measurement model measure how well hidden variables are represented by the observed variables. It is mainly confirmatory factor analysis (CFA) and indicates the construct validity of scales. Therefore, if the measurement model fit indices are low, it will not make sense to test the structural model (Dursun & Kocagöz, 2010).

In order to test the proposed hypotheses and answer the research objectives, the researcher used two steps to investigate the collected data. The first action taken is selection of important measurement items to be used for the measurement, and the second is to confirm the structure of the structure of the measurement model by the confirmatory factor analysis as explained by (Mulaik& Millsap, 2000).The analysis of collected data started by testing the validity of questionnaire used for data collection. In this analysis even though the adopted method is confirmatory factor analysis from structural equation modelling, before running CFA the result of EFA applied to confirm whether the survey fillers correctly perceive the questions. As Mustafa (2018) briefed it is necessary to see the results of explanatory factor analysis (EFA) in practice before applying confirmatory factor analysis (CFA) even though scales generally accepted in the literature are used.

Before analysis of collected data, the necessary test for evaluation of the validity and reliability of the scale used were made. Then, the internal consistency and convergent validity of data were measured. The need for these tests is to confirm whether a scale designed is consistent and measuring what we really want to measure. For this the principal factor analysis (PFA) results given on Table 1 show the results of reliability and validity of the questionnaire used under all the constructs used. Several tests were conducted to evaluate measurement validity. First, internal consistency and convergent validity were assessed. The results displayed in Table 1 are the factor loadings, average variance extracted, construct reliabilities, and Cronbach's alpha of 19 indicators. The results of the factor loading ranges from 0.62 to 0.94 for each item selected and statistically significant ($p< 0.000$) for all loadings. The Cronbach's alpha values for all the constructs are above the minimum acceptable value of 0.70 and the average variances extracted

for all the constructs exceeds 0.5, which are acceptable (Fornell and Larcker, 1981). Generally, the resulted Cronbach α values and reliability values indicating the reliability of the scales used.

Table I. Results of Construct reliability and validity from principal factor analysis using SPSS

Indicators	Factor loading	Cronbach's α	Construct reliability	Average variance extracted (AVE)
Location Factors:				
Proximity to large market	0.94	0.92	0.83	0.75
Proximity to cheap labour	0.71			
Proximity to adequate labor	0.86			
Proximity to skilled labor	0.90			
Proximity to raw materials	0.72			
Availability of adequate utilities	0.78			
Transportation Factors				
Right mode of transportation	0.80	0.83	0.72	0.71
Transportation cost	0.83			
Average loading/unloading time	0.74			
Road quality	0.62			
Minimum lead time	0.65			
Price/cost:				
Offer competitive prices.	0.88	0.86	0.78	0.66
Offer prices lower than competitors	0.73			
Quality				
Compete based on quality	0.71	0.74	0.76	0.61
Offer products that are highly reliable	0.78			
Offer high quality products	0.68			
Delivery dependability				
Deliver the kind of products needed	0.84	0.92	0.86	0.76
Deliver customer order on time	0.93			
Provide dependable delivery	0.82			

Structural equation modelling using AMOS

In the receding section explanatory factor analysis (EFA) were made by principal components analysis in SPSS Version 20 to look the results prior to use confirmatory factor analysis (CFA) in AMOS. This is due to the need to prove if the survey fillers correctly understand the questions even if the scales used are not new in the literature. Once the results of reliability and validity test are proved that the results are satisfactory, the next step is testing the proposed hypotheses using structural equation modelling (Anderson and Gerbing, 1988).

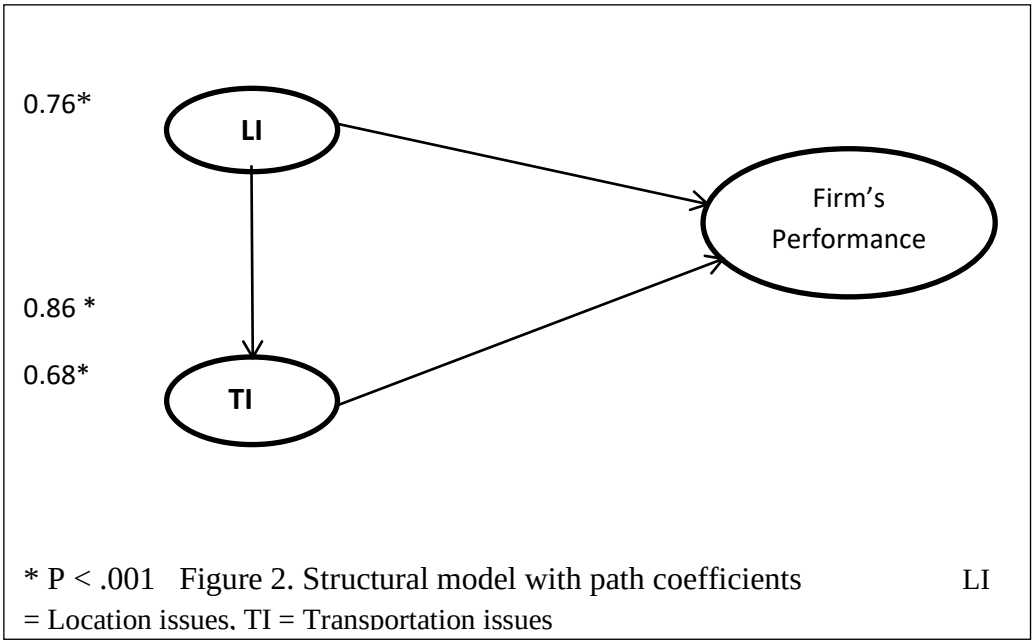
The three proposed hypotheses that were derived from the conceptual model built in structural equation modelling were tested in AMOS version 23. Different test for model fit indexes were made in the analysis in Table 2. The results of these tests were made by x^2statistics at significant significance level of $p < 0.05$; and used other fit indexes including the normed fit index (NFI) that takes values from 0 to 1 and where higher values indicate better fit (Bayram, 2013);comparative fit index (CFI)values that can range from 0 to 1, and values beyond 0.90 and close to 1 show good fit (Schermelleh-Engel, Moosbrugger, & Müller, 2003);root mean square error of approximation (RMSEA)value of 0.05 or less than 0.5 for the RMSEA indicates good fit (Bayram, 2013) and values from 0.05 to 0.08 show acceptable fit (Byrne, 2010) and goodness-of-fit index (GFI) , where GFI value ranges from 0 to 1 and values above 0.90 show that the fit is good (Bayram, 2013). The results of all these tests satisfied the minimum required criteria summarized by Bayram, (2013) as the standard for acceptable CFI index is between $0.95 < CFI < 0.97$; for GFI $0.85 < GFI < 0.90$; for NFI $0.90 < NFI < 0.95$; and for RMSEA $0.05 < RMSEA < 0.08$.

To further assess the discriminant validity tested for each dimension of constructs used. It reflect the degree to which a structure or the questionnaires used in a given measurement model can vary from other questionnaires under the other constructs as proposed by Fornell and Larcker (1981).Then the discriminant validity calculated for each dimension based on the value of Average Variance Extracted (AVE) for each dimension. In order to determine discriminant validity, it is also desirable that the values of the AVE for each construct in the data set are larger than the correlation coefficients of that construct with the other constructs and the acceptable AVE value must be greater than 0.50 or 0.50. Hence, the measured values of discriminant validity given in Table 2 shows that the results are beyond the acceptable threshold. Generally, the results of Confirmatory Factor Analysis (CFA) reveal satisfactory reliability and validity for the three in analysis.

Figure 2 show the used portion of the standardized results estimated by Maximum Likelihood in AMOS 23.0 for the structural regression model. The standardized results displayed in Figure 2 indicate the level of significant relationships at $p < 5\%$ level between the three latent variables under investigations. From the standardized path coefficient displayed on Figure 2 the significance of the path coefficient from location issues (LI) to transportation issues (TI), from location issues (LI) to Firm's Performance (FP); and from transportation issues (TI) to firm's performance (FP) was determined by analysing their respective unstandardized results and standard error. In the paths model the statistical significance of the parameter can be estimated

by dividing the unstandardized results of the parameter by their respective standard errors; and if the critical values (t values) are more than 1.96, they are significant at the .05 level as suggested by (Schumacker and Lomax, 2004). Although significance between the respective latent variables determined by estimating from the results of the critical ratio (i.e., z score) automatically calculated with AMOS program. For this particular paper, to test the significance of the values in the paths coefficients the researcher based on the results automatically estimated by AMOS program and displayed in the last column of Table showing the results of confirmatory factor analysis.

Therefore, from the Figure 2, the significance of the path coefficient from location issues (LI) to transportation issues (TI) was determined by examining0.540the unstandardized result, and 0.069the standardized error of the paths. The results show that whether the coefficient displayed is significant (i.e., $z \geq 1.96$ for $p \leq .05$) at a given alpha level. To check the significance between LI and TI, thecritical ratio is 7.826, which is larger than the critical z value (at $p = .05$) of 1.96, indicating that the relationship between location issue and transportation issue is significant. Similarly, the significance of the path coefficient between TI and FP is 5.65 which are greater than the critical Z value of 1.96 at 5% probability level, showing that the relationship between LI to FP is significant. Finally, the significance of the relationship between location issue and firm's performance show that the critical ratio is 7.65 which are greater than the critical Z value of 1.96 at 5% probability level, showing that the relationship between LI to FP is significant.



* P < .001 Figure 2. Structural model with path coefficients LI = Location issues, TI = Transportation issues

Table 2.The Descriptive Statistics, Correlation Coefficient, Reliability Results and Discriminant Validity

Factors	Mean	SD	LF	TF	P/C	Q	DD
LF	3.42	1.31	0.77				
TF	3.58	1.05	0.80*	0.84			
P/C	3.61	0.98	0.72*	0.68*	0.77		
Q	3.05	0.95	0.60*	0.71*	0.76*	0.72	
DD	3.86	1.04	0.78*	0.86*	0.56*	0.54*	0.86
AVE			0.59	0.706	0.59	0.52	0.74

* P<0.05, Note: the values on the last upper diagonal show the square root of the AVE values.

Table 2 displays descriptive statistics and a correlation matrix. The means of all the three constructs measures were between 3 and 4, with standard deviation between 0.95 and 1.31 showing significant variation to the responses of the items used. The mean value of delivery dependability which is 3.86 much higher than 3.61 mean value of price/cost, 3.05 mean value of construct quality, 3.58 mean value of transportation issues, and 3.42 mean value of location issues. The higher mean values of delivery dependability and price/ cost constructs reflect that the firms' under considerations are relatively utilizing the opportunity of favourable location and transportation issues in achieving delivery dependability and achieving minimum operation costs. Further, the minimum mean value of construct quality which was 3.05 among all constructs is an indicator of relatively minimum contributions of transportations and location issues in achieving quality of products in the supply chain performance. From Table 3 the correlations values of all the constructs ranges between 0.54 and 0.86 above 0.50 of the minimum acceptable threshold value which implies the criterion validity of the constructs' used (Nunnally, 1978). In addition to the correlation values for the determination of the discriminant validity of the scales used the values of Average Variance Extracted (AVE) are above the 0.50 acceptable margin and the square roots of the AVE values that were given on the last upper diagonal values on Table are greater than the correlation values for each dimension given in each. Hence, the discriminant validity of the scales is maintained.

6. CONCLUSIONS

The study conducted with the aims of investigating the effects of facilities location and transportation in the supply chain management on firm's performance. To answer the research objective a conceptual frame work developed with two independent variables and one dependent variable. The independent variables considered were facilities location and transportation factors; and the dependent variable is organization's performance.

The researcher tested the direct effect of facility location and transportation infrastructure in supply chain management on firm's performance; and the mediating effect of transportation on the relationship between facility location and firm's performance in the supply chain practices. The results of this study indicate that facility location and transportation infrastructure have positive and significant effects on firm's performance in the supply chain practices. Likewise, there is a positive intermediary effects transportation infrastructure between location of a facility and organization's performance.

The result of this study has two major theoretical implications to the literature on supply chain management practices besides empirically confirming a theoretical model. Among the contribution, as a novel contribution, the researcher examined the significant effects of facility locations decisions and transportation activities in integrating supply chain activities and leading to higher organizational performance. The second novel contribution of the result is that the researcher investigated the mediating effects of transportation between facility location and organizational performance.

The managerial implication of the result is that the result of this study is an indicator for manager to give critical attention in making facility location decisions in case of deciding where to locate a facility to effectively serve customers through integrating and working with supply chain partners besides the ultimate objective of an organization. Further, the managerial implications of this result is that, the result is good indicator for manager in developing countries to give considerable attention to location decisions where transportation infrastructure is poor and able to significantly influence firms performance in supply chain practices. Therefore, the strategic manager of an organization needs to consider transportation infrastructure in making location decisions in supply chain activities of developing countries where road quality and network is low, and inadequate and accessible rail road's frequently observed.

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