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ROLE OF VALUE NETWORK COLLABORATION ON MARKET VISIBILITY OF INDEPENDENT PETROLEUM MARKETERS IN RIVER STATE

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Abstract
This study examines the role of value network collaboration and its impact on the market visibility of independent petroleum marketing firms in Rivers State. Adopting a cross-sectional survey research design, the study targeted a population of 450 independent petroleum marketing firms registered with the Independent Petroleum Marketers Association of Nigeria (IPMAN). Using Taro Yamane's formula, a sample size of 212 firms was determined. Value network collaboration was treated as a one-dimensional variable, while market visibility was measured through brand awareness and brand recall. Data were analyzed using Pearson product-moment correlation. Findings reveal a strong and significant relationship between value network collaboration and brand recognition, as well as between value network collaboration and brand recall. These results suggest that collaborative networks are critical drivers of market visibility for independent petroleum marketers. Based on these findings, the study recommends that firms engage in strategic collaborations with other firms to enhance competitive advantage, expand market share, and increase revenue.

Keywords: *Value Network Collaboration, Brand Recognition, Brand Recall, Market Visibility, Independent Petroleum Marketers*

Introduction

Networks of firms are specific types of structure, created for active collaboration, which can be open-ended or focused on a specific project task. Networks are those linked organizations (e.g., firms, universities, government agencies) that create, acquire, and integrate diverse knowledge and skills required to innovate complex technologies (e.g. aircraft, telecommunication equipment) (petrescu, Rus & Negrusa 2014). The business environment is changing very dynamically, independent petroleum marketing firms need a wide network to facilitate access to information, sharing knowledge and experience. Collaborative networks by independent petroleum marketing firms have an important role to be achieved in this regard. scholars agree that collaborative networks can be done through collaboration with suppliers, competitors, customers, governments with the hope of sharing information, knowledge and experience to support company innovation (Zhou & Li, 2012; Luzzini et al., 2015; Clauss & Kesting, 2017). Collaborative networks are also designed as an innovation strategy and are developed to assess the competence of external network partners, namely universities, companies, and government (Varrichio et al., 2012). Effective collaborative networks will create cooperative relationships that are able to expand business

opportunities and company growth. Wallace and Jago (2017) described value as a preference and a principle meanwhile, Porter and Kramer (2011) described value as the perceived benefits minus the perceived costs, which reflects a one-dimensional perspective on the value. This means that value is not just benefits, but benefits relative to costs. We can thus infer that the value of networks is a function of the perceived benefits minus the perceived cost which reflect on the performance of the networks

The independent petroleum marketer is one who purchased refined petroleum Products from a supplier usually a major oil company or independent refiner or storage terminal operator and then resells the product at a wholesale or retail level. The entity is referred to as a distributor in the popular chain of Producer distributor Customer. The range of products sold by independent marketers includes just about everything that comes out of the barrel of crude oil (gasoline, heating oil, diesel, fuel, lubricants, aviation fuel, kerosene and a variety of other refined petroleum products (Empire State Energy Association, 2021). Research shows that independent petroleum marketer at the top are those who are widely visible to the market and for other petroleum marketers to do better thereby becoming more visible to the market, the alliance of the value network is one of the many strategies that can be employed. Value network collaboration is poorly understood today include Operations Managers, Marine Managers, Finance and Accounts Managers, Business Development Managers and Marine Technical Superintendents. A single disruption in the supply chain can aggregate and cause delays lasting for several days as a result of gridlock that will restrict movements of vehicles supplying petrol to the demand destinations. Hence, the fuelling stations with petrol tend to increase their price as a result of scarcity of the product that may arise. It is therefore probabilistic that the collaboration of the value network will relatively reduce the disruption in the value network hence eliminate the gridlock that may arise this research work therefore is focused on how value network collaboration in the petroleum Industry particularly to the advantage of the independent petroleum marketer can aid its visibility.

Study Variables and Research Framework

Study variables unveil the direction of the research work. They serve as the skeletal structure upon which the entire work is built upon. This study has two major variables value network collaboration which is the predictor variable and it is treated as one-dimensional variable. While, Market visibility as the criterion variable with brand recognition and brand recall as measures is depicted below in figure 1.

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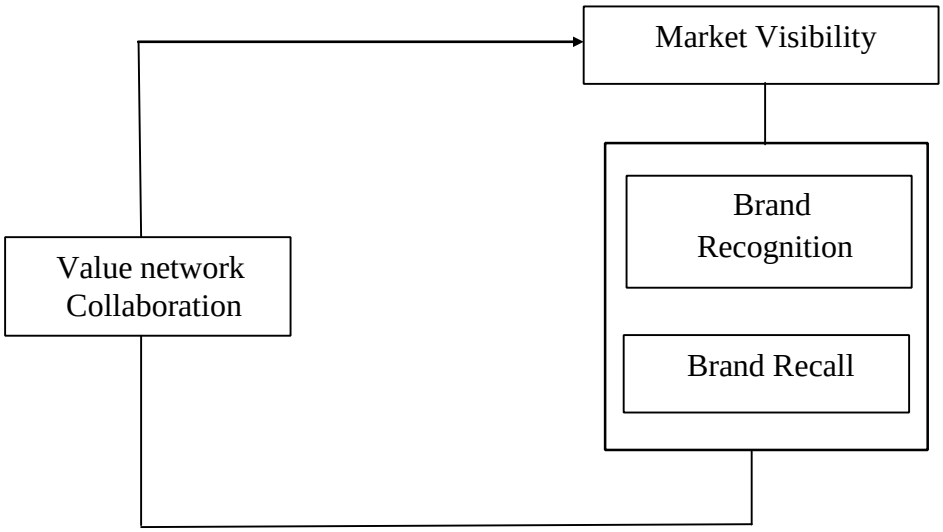

Fig 1: Conceptual Framework for Value network Collaboration and Market Visibility
Source: Desk Research 2022

The following null hypotheses were formulated to guide the study:

$H0_1$: There is no significant relationship between value network collaboration and brand recognition.

$H0_2$: There is no significant relationship between value network collaboration and brand recall.

Value Network Collaboration

Afsarmanesh and Camarinha (2006) stated that collaboration is the process in which entities share information, resources and responsibilities to jointly plan, implement and evaluate a program of activities to achieve a common goal. The usual consequence of collaboration is presented in the form of efficiency, effectiveness and profitability. The benefits of collaboration in terms of efficiency are cost reduction, reduced inventory and shortened leadtime. Derived effectiveness is reflected in customer service improvement, market share expansion (visibility) and higher revenue.

Scholars have divided and categorized different collaboration types; Kahn et al. (2007) identified four types of collaboration based on information, technology and relationship aspect. The first type is transactional based collaboration which focuses on demand and delivery between Value Network members. The second is technology collaboration which focuses and relies on information technology with information sharing between members of the value network. The third is affinity based collaboration which focuses on relationship management; Trust and commitment are the foundations of this type of collaboration. There exists the horizontal and vertical collaboration form. The horizontal collaboration is the inter-firm relationship within the same value network levels while the vertical collaboration is the inter-firm relationship at different levels within value network such as the relationship between the supplier and manufacturer or manufacturer with customer (Barratt, 2004).

Horizontal integration

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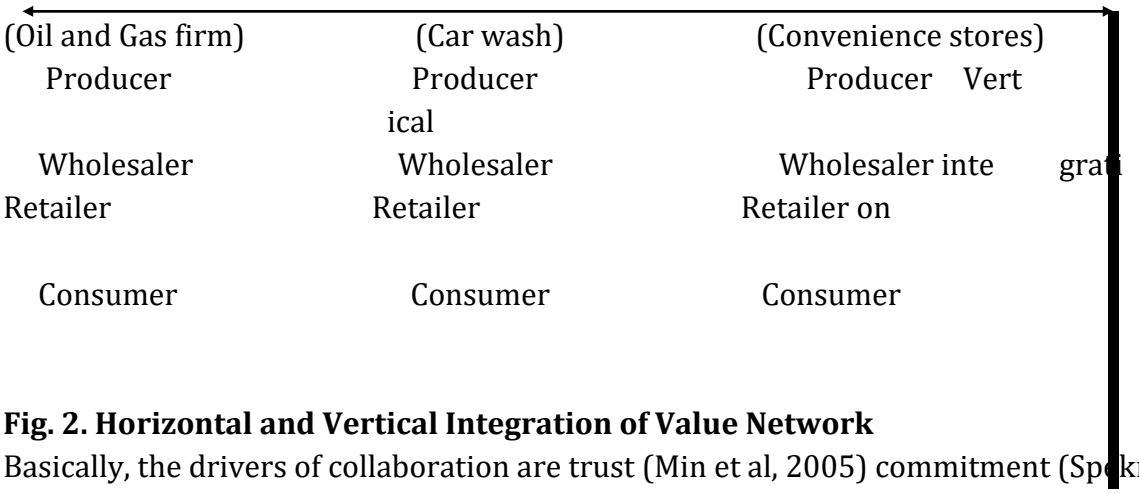

Fig. 2. Horizontal and Vertical Integration of Value Network

Basically, the drivers of collaboration are trust (Min et al, 2005) commitment (Spekman et al. 1998), decision synchronisation (Simatupang & Sridharan, 2005) and Information sharing (Barratt, 2004). All that is required for value network collaboration to succeed is a common purpose (Shimizu, 2003). Collaboration increases brand recognition, customer value and customer retention for each of the participating firms (Shimizu, 2003). It requires various organizations to work together as a realistic solution for firms that seek access to larger markets but do not have the infrastructure or resources to individuality serve such markets. In value network collaboration, several like-minded firms join resources formally to exploit a market opportunity but not necessarily under the governance or control of one partner. It is that which compels members of the value network to adjust their operations, policies and processes to accommodate the overall interest of the collaboration.

Concepts of Market Visibility

Market visibility is the ability of a potential buyer to recognize or recall that a brand us a member of a certain product category and establish a link between the product class and the brand (Travis, 2006 as cited in Horsefall et al., 2018). It is related to the strength of the brand node or trace in memory as reflected by consumers' ability to recall or recognize the brand under different conditions (Keller 2003 as cited in Horsefall et al., 2018).

Aaker (1991) categorizes market visibility using a three-layer hierarchical approach;

a. Top-of-mind business: it represents the first brand being named in an unaided recall task

b. Moderate level of awareness: The brand recall is made by asking a person to name the brand in a particular product category

c. Lowest level of awareness: The brand recognition is based on the sides recall test. According to research, there is a significant change in the world of communication today not only concerning the means that the brands use to get their messages through but also in the way they communicate. The use of this type of communication aims at strengthening the visibility and identity of the brand.

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Value Network Collaboration and Market Visibility

Collaboration has been referred to as the driving force behind effective value network management and may be the ultimate core capability. There is a fairly under-spread belief that few firms have truly capitalized on the potential of collaboration. Min et al, (2005) conducted a research on Supply chain collaboration, using survey data, personal interviews and a review of the collaboration literature as the method of study to develop a conceptual model profiting behaviour, culture and relational interactions associated with successful collaboration. He measured collaboration using information sharing, joint planning, joint problem solving, joint performance measurement, leave raging resources and skills. Min et al discovered that positive collaboration-related outcomes include enhancements of efficiency, effectiveness and market positions for the respondent's firms

In another research conducted by Wei and Wang (2010), on strategic value of supply chain visibility, they concluded that collaboration can enhance the brand value of respective brand involved in a collaboration as well as supply chain visibility which enhances firm's configuration of their supply chain resources for greater competitive advantage. They proved that co-branding reinforces brand values and reaches new target groups (market visibility). Hence, a relative collaboration of independence petroleum marketers with reputable convenience store, truck shops and restaurants, car washes, auto parts sales and home energy centres has the probability of improving its market visibility (market position)

Methodology

This study on value network collaboration and market visibility adopted the cross sectional survey research design. Data were collected through questionnaire drawn using a Likert's five-point scale, ranging from "strongly agree" to "strongly disagree". The predictor variable value network collaboration was treated as a one-dimensional variable while, the criterion variable market visibility has brand recognition and brand recall as its measures. The population of this comprised of the four hundred and fifty petroleum marketers registered with the independent petroleum marketers of Nigeria, Rivers state chapter. The sample size of the study is 212. It was determined from the Taro Yamen's (1967) formula. The sample size formula is expressed as;

$$n = \frac{N}{1+n(e)^2}$$

Where; n = sample size sort

e = level of significance which is 95 %(0.05) N = population size

Therefore, $n = \frac{450}{1+450\,(0.05)^2} = 212$

Therefore, n = $450/1+450(0.05)^2$ = 212

The Taro Yamen's sampling technique was used to determine the sample size because the study population is above the benchmark of 30units. Therefore, along size the use of a sampling technique enabled the researcher to carry out the research with ease

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The hypotheses were tested using the Pearson Moment Correlation Coefficient with the aid of the Statistical Tool for Social Science (SPSS version 25.1).

Result and Discussion

Table 1: Description on Levels of Relationship between Variables

Ranges of r with positive and negative	Descriptive level relationship of r Sign values
+ .7 to 1.0	Very Strong
+ .6 to .69	Strong
+ .4 to .59	Moderate
+ .1 to .39	Weak

Source: Mangiafico, (2016)

The positive (+) sign in the values of r implies a direct/positive relationship, whereas the negative (-) of r implies an indirect/negative or inverse relationship between the two variables. This section continues by testing the hypotheses raised in section one of this study with the aim of determining the strength and direction of the relationship (if any) amongst the predictor variable and the criterion variable.

Table 2: Questionnaire Distribution, Retrieval and Usage

S/N	Questionnaire	Quantity	Percentage (%)
1	Produced Copies	212	100
2	Distributed Copies	196	92.5
3	Retrieved Copies	192	90.6
4	Copies not retrieved	4	1.9
5	Invalid Copies	10	4.7
6	Valid Copies	182	85.9

Source: Research Desk, 2022

The Statistics on table2 indicate that a total of 212 copies (100%) of the questionnaire were produced but 196 copies (92.5%) were distributed by the researcher to the target audience. Also, only 192 copies (90.6%) were retrieved and 4 copies (1.9%) were not retrieved. Furthermore, out of the 196 copies (92.5%) distributed, 10 (4.7%) copies were invalid and 182 copies (85.9%) were valid so the researcher used the 182 copies (85.9%) for the analysis.

Table 3 Descriptive Statistics on all the Study Variables

		N	Sum	Mean	Std. Deviation
Value Collaboration	Network	182	3615	4.75	3.603

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Brand Recognition	182	2082	3.0	3.206
Brand Recall	182	2226	3.0	4.163
Valid N (list wise)	182			

Source: SPSS Output, 2022.

Table 2 explains the descriptive statistics on the dimension of the explanatory variables (Value Network Collaboration). The table showed the descriptive statistics on the measures of the criterion variables (Brand recognition and Brand Recall).

Specifically, Table 2 revealed that Value Network Collaboration has a mean of 4.75 and a standard deviation of 3.603. Brand Recognition has a mean of 3.0 and a standard deviation of 3.206. Brand Recall has a mean of 3.0 and a standard deviation of 4.163.

Decision Rule

Reject the null hypothesis (H0) if PV < 0.05 for 2-tailed test and conclude that significant relationship exists

Table 4 Correlation Analysis on Value Network Collaboration and Brand Recognition

Pearson Correlation	Value Network Collaboration	Correlation Coefficient	1.000	.954**
		Sig. (2-tailed)	.	.000
		N	182	182
	Brand Recognition	Correlation Coefficient	.954**	1.000
			Value Network Collaboration	Brand Recognition
		N	182	182

**. Correlation is significant at the 0.01 level (2-tailed).

Source: Researchers data, 2022 (SPSS Output).

Table 4 above shows that the Pearson Correlation Coefficient (r) = 0.954**, this value is high, implying that a strong relationship exists between value network collaboration and brand recognition. The positive sign of the correlation coefficient indicates a positive relationship. That is to say that increased brand recognition is associated with the adoption of value network collaboration in the studied independent petroleum marketers. As shown in Table 4, the probability value is (0.000) < (0.05) level of significance; hence the researcher rejects the null hypothesis and concludes that there is a significant relationship between value network collaboration and brand recognition.

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Table 5: Correlation Analysis on Value Network Collaboration and Brand Recall

			Value Network Collaboration	Brand Recall
Pearson Correlation r.	Value Collaboration	Network Correlation Coefficient	1.000	.970**
		Sig. (2-tailed)	.	.000
		N	182	182
	Brand Recall	Correlation Coefficient	.970**	1.000
		Sig. (2-tailed)	.000	.
		N	182	182

**. Correlation is significant at the 0.01 level (2-tailed).

Source: Researchers data, 2022 (SPSS Output).

Table 5 above shows that the Pearson Correlation Coefficient (r) = 0.970**, this value is high, implying that a strong relationship exists between value network collaboration and brand recall. The positive sign of the correlation coefficient indicates a positive relationship. That is to say that an increased brand recall is associated with the adoption of value network collaboration in the studied independent petroleum marketers. As shown in Table 5, the probability value is (0.000) < (0.05) level of significance; hence the researcher rejects the null hypothesis and concludes that there is a significant relationship between value network collaboration and brand recall.

Discussion

The findings of this study showed that value network collaboration has a strong influence on brand recognition. This is indicated by the Pearson Correlation Coefficient of 0.954, at a significant level of probability value (PV) = 0.000 < 0.05 (2-tailed). This implies that there is a relationship of 95.4% of value network collaboration with brand recognition of independent petroleum marketers in Rivers State.

This is in agreement with the research conducted by Wei and Wang (2010), which showed that value network collaboration has a strong relationship with brand recognition, as collaboration can enhance the

brand value of respective brand involved as well as supply chain visibility which enhances firm's configuration of their supply chain resources for greater competitive advantage and co-branding reinforces brand values and reaches new target groups (market visibility)

The second result from the analysis of the study showed that value network collaboration has a strong influence on brand recall. This is indicated by the Pearson Correlation Coefficient of 0.970, at a significant level of probability value (PV) = 0.000 < 0.05 (2-tailed). This implies that there is a relationship of 97.0% of value network collaboration with brand recall of independent petroleum marketers in Rivers State.

This position is supported by Min et al. (2005) who conducted a research on Supply chain collaboration, using survey data, personal interviews and a review of the collaboration literature as the method of study to develop a conceptual model profiting behaviour, culture and relational interactions associated with successful collaboration.

Conclusion and Recommendations

Based on the findings of this study and the consistency with results of similar studies, we conclude that value network alliance is an important driver of market visibility of Independent Petroleum Marketers in River State.

Since the petroleum industry is becoming competitive, and operates in a complex and dynamic environment almost monopolistic where price and some other factors are controlled by the government which leaves only a slim chance for organizations to have a competitive advantage over competitors in its product positioning, independent petroleum marketers can adopt collaboration of its value network to achieve market visibility

The study recommends that Independent Petroleum Marketers in Rivers State should make healthy collaborations with other firms to have a competitive advantage over competitors.

Also, those Independent petroleum marketers in rivers state should know that the collaboration of their firm with other firms results in market share expansion and higher revenue generation.

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