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DECODING THE DNA OF CUSTOMER RELATIONSHIPS: THE ROLE OF MARKETING DIAGNOSTICS IN THE DIGITAL AGE

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JEL: M31

Abstract

As businesses increasingly recognize the importance of effective customer relationship management, building a rich database and managing it sustainably becomes a crucial factor for success. Digital transformation has altered consumer behavior, necessitating the transformation of strategic frameworks for managing customer relationships and precise management of customer data. To implement effective marketing approaches, it is necessary to conduct a CRM system diagnostics that identifies critical customer interaction areas through adequate metrics. This paper examines the main aspects of marketing diagnostics and their contribution to customer relationship management. The research focuses on the nature and development of three main diagnostic tools as fundamental to the diagnostic process in customer relationship management: the RFM-method, the customer lifetime value (CLTV) and the Customer churn prediction model. The possibilities of using machine learning and artificial intelligence in marketing diagnostics and their impact on customer relationship management are discussed. The purpose of the present study is to contribute to a better understanding of the importance of marketing diagnostics for customer relationship management and to highlight the importance of the effective application of diagnostic tools in organizations.

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Key words:
CRM system, marketing diagnostics, customer relationship management


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Introduction

Customer Relationship Management (CRM) has come a long way and today it is a complex business philosophy that combines technology, processes and people to help companies build and maintain long-term and sustainable relationships with their customers. In parallel with technological developments, such as machine learning and artificial intelligence, the potential of CRM grows significantly as new technologies transform the way companies integrate a customer relationship management strategy. Modern technological solutions make it possible to analyze huge amounts of customer data in real time, to identify patterns and trends and to predict consumer behavior. This, in turn, provides an impetus to develop and upgrade hyper-personalization based on individual customer preferences.

Effective implementation of these technologies, however, is not always easy. Companies need to have the right database storage infrastructure, adequate analytics capacity and, last but not least, organizational culture to achieve their effective implementation. CRM diagnostic tools are essential in this process. Traditional marketing diagnostic metrics are evolving technologically through the ever-widening integration of machine learning and artificial intelligence. This enables organizations to make a realistic assessment of their readiness for digital transformation, to identify gaps and opportunities, and to develop a roadmap for the implementation of up-to-date CRM solutions.

Within this study, the main aspects of marketing diagnostics and their contribution to customer relationship management are considered. The research focuses on the nature and development of three main diagnostic tools as fundamental to the diagnostic process in customer relationship management: the RFM-method, the customer lifetime value (CLTV) and the customer churn prediction model. This paper discusses the possibilities of using machine learning and artificial intelligence in marketing diagnostics and their impact on customer relationship management. The objective of this study is to enhance our comprehension of the significance of marketing diagnostics for managing customer relationships and to emphasize the crucial role of implementing diagnostic tools effectively within organizations.

2. Limitations of the study

The concepts of relationship marketing and customer relationship management are not entirely equivalent, although they are associated with the creation of long-term and fruitful relationships with customers. Relationship marketing focuses on personalization and a one-to-one approach, while customer relationship management is a broader approach that includes technologies and processes for managing customer information. These concepts are often used together to achieve better results in customer relationship management.

3. From relationship marketing to CRM: evolution of customer knowledge

New technologies are facilitating new forms of interaction between consumers and business organizations by providing various types of data, such as geographic, demographic, psychographic, and behavioral characteristics (Kotler et al., 2021). The rapid development of technology is radically transforming the marketing decision-making process (Hoffman et al., 2022). Over the past thirty years, the concept of customer relationship management has evolved from a refined subspecies of relationship marketing, which focused on examining interactions in networks of relationships (Gummesson, 2008), to a business philosophy with enriched functionality that involves a set of technological solutions critical to effective business management and digital transformation, supporting sustainable innovation in the organization's business model (Gil-Gómez et al., 2020) (see Table 1).
Table 1.

Selected definitions that reveal different aspects of customer relationship management

<table>
<thead>
<tr>
<th>Source</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jackson (1985a:165)</td>
<td>“Relationship marketing is marketing to win, build and maintain strong lasting relationships with industrial customers”.</td>
</tr>
<tr>
<td>Morgan &amp; Hunt (1994:22)</td>
<td>“Relationship marketing refers to all marketing activities directed to establishing, developing, and maintaining successful relational exchanges.”</td>
</tr>
<tr>
<td>Porter (1993:14)</td>
<td>“Relationship marketing is the process whereby both parties – the buyer and provider – establish an effective, efficient, enjoyable, enthusiastic and ethical relationship: one that is personally, professionally and profitably rewarding to both parties”.</td>
</tr>
<tr>
<td>Ballantyne (1994:3)</td>
<td>“An emergent disciplinary framework for creating, developing and sustaining exchanges of value, between the parties involved, whereby exchange relationships evolve to provide continuous and stable links in the supply chain.”</td>
</tr>
<tr>
<td>Lusch &amp; Vargo (2006a:xvii–xviii)</td>
<td>“Marketing is the process in society and organizations that facilitates voluntary exchange through collaborative relationships that create reciprocal value through the application of complementary resources.”</td>
</tr>
<tr>
<td>Groenross (2007:29)</td>
<td>“(The purpose of) … marketing is to identify and establish, maintain and enhance, and when necessary terminate relationships with customers (and other parties) so that the objectives regarding economic and other variables of all parties are met. This is achieved through a mutual exchange and fulfilment of promises.”</td>
</tr>
<tr>
<td>Gummesson (2008)</td>
<td>“Relationship marketing is interaction in networks of relationships”.</td>
</tr>
<tr>
<td>Stanimirov (2013:32)</td>
<td>“Customer relationship management can be seen as a comprehensive strategy and process of attracting, retaining and partnering with pre-selected customers, the purpose of which is to create added value for both the company and the customers.”</td>
</tr>
<tr>
<td>Alam et al. (2019)</td>
<td>“Customer Relationship Management (CRM) is the process of creating and maintaining long-term relationship between a company and its customers for a positive sum game.”</td>
</tr>
<tr>
<td>Gil-Gomez et al. (2020)</td>
<td>“CRM is a set of technological solutions, key to effective business management, the benefits of which are critical to the success of the organization. These solutions can be seen as “green” information technologies, oriented towards digital transformation and supporting sustainable innovation in the organization's business model.”</td>
</tr>
</tbody>
</table>

Source: Adapted by Gummesson (2008:329)

After 2020, relationship marketing, and in particular, permission marketing, evolve into experience marketing. Customer Relationship Management is focused on hyper-segmentation and hyper-personalization. Green technologies, artificial intelligence and machine learning are used to process and analyze vast arrays of customer databases that are collected through omnichannel marketing and social networks. Stanimirov (2013) considers customer relationship management as both a large-scale methodology and technology in three main directions: as database marketing, marketing process and as a technological solution. This methodology is also a key tool for business model innovation, directing the efforts of small and medium enterprises towards economic, social and environmental sustainability (Gil-Gomez et al., 2020). This requires interconnected integration of people, activities and processes through appropriate technology, namely - the customer relationship management system (CRM-system).
4. Role of organizational and marketing diagnostics in customer relationship management

Organizational diagnostics is a method used to analyze the organization in order to identify organizational deficiencies and possible solutions (Janičević, 2010); an intervention that provides information about the various subsystems and processes of the organization in order to improve performance (Beckhardt 1975, Lundberg 2008); but also a management tool used to promote organizational development and change in order to achieve desired sustainability (Zhang, Schmidt, & Li, 2016). Organizations use the information obtained to improve organizational effectiveness and sustainability. Without a good and effective mechanism for performing diagnostics, organizations become information processing units, with the risk that it may not be applicable to the basic needs of the organization (Muriithi, 2020).

While organizational diagnostics focuses on the internal structure of the organization to detect problems and propose solutions, marketing diagnostics analyzes the external market and customers to determine their competition, needs and preferences. In the context of customer relationship management, marketing diagnostics is part of organizational […] and is necessary to determine the needs and preferences of customers, and through organizational diagnostics, problems in the functioning of the organization are identified that may affect the interaction with customers. Uzunova (2012) defines marketing diagnostics as ”a process of dynamic planning activities and operations for changes, signaling and protecting the scope and duration of violated business interests of the company by product-markets” (Uzunova, 2012:76). In the short term, marketing diagnostics performs a function of timely identification of conflicts in the organization horizontally and vertically and their resolution. In a long-term aspect, it helps to specify priority elements of the organization’s marketing architecture and direct resources for their improvement and/or transformation.

Marketing diagnostics answers the questions of what needs to be changed and why (Spector, 2007) by collecting data, feedback and institutionalizing the decisions made, providing the basis for determining and evaluating possible future courses and resources to improve performance. Through the diagnostic approach, management can quickly, clearly and comprehensively identify the tools for implementing strategic decisions. The skillful and effective determination of the strategic direction in conditions of changes in the dynamic business environment is a key factor for the success of organizations. In the conditions of over-consumption and fierce competition, the timely adaptation of the customer relationship management strategy requires a methodical diagnosis of business processes, as well as a qualitative analysis to suggest practical mechanisms for adaptation and structural improvements. In some cases, even customization is unable to help properly diagnose the CRM system, which can lead to wasted resources, reduced productivity (Muriithi, 2020) and general organizational inefficiency. Diagnosing allows organizations to assess their readiness for change (Meaney & Pung, 2008), as well as implement the necessary corrective measures to ensure the organization's stability and growth potential.

5. Specifics of the diagnostic process in customer relationship management

The diagnostic process of the CRM system needs to examine and measure the degree of integration and implementation of the principles of the adopted CRM strategy. This represents the macro framework of the diagnostic process in customer relationship management. Stanimirov (2017) proposes a conceptual model for tracking the effectiveness of the CRM-strategy, which integrates and dynamizes the descriptive model of the CRM-diamond of Mack, Mayo and Khare (2005). By following the macro framework of the diagnostic process as a navigation map through micro-level processes, possible deviations from the general line of strategic development caused by subjective factors are minimized.
For the successful diagnosis of the customer relationship management system in an organization, it is necessary to answer the question of how adequate the adopted CRM strategy is for the target market. For this purpose, it is necessary to examine the management of customer knowledge and establish its effectiveness. Customer knowledge management systems store a large volume of databases that help profile and segment an organization's customers. A key objective of customer knowledge management is their profiling and identification of strategically important customers or groups of customers. Through customer relationship diagnostics, one can predict the possible actions they are likely to take based on their past behavior patterns. This metric is useful to the marketing team in developing strategies to improve consumer purchase index, customer satisfaction, and enables flexible offers for a specific customer in real time.

The micro-framework of the diagnostic process involves diagnosing all contact points with the customer through customer journey mapping, which is a critical first step in implementing a customer-centric CRM strategy. To select the right metrics for diagnostics, it is essential to identify the critical customer interaction points that align with the organization's business model. Alam (2022) proposes a "customer interaction cycle," which facilitates the definition of key interaction areas, depending on the adopted business strategy (Figure 2). From the graphical representation of the customer interaction cycle, it is evident that customer retention is a function of the feedback received, which should be proactively sought by the organization. Obtaining customer feedback is a challenging process because customer opinion is typically gathered about the product as a whole and cannot be readily translated into a quantitative value. Organizations should design their customer relationship management strategies to measure customer satisfaction continuously and improve their product based on the feedback received. For instance, opening a hotline to encourage customers to provide their opinion about specific products based on a pre-prepared questionnaire, which may also be available in paper form in the company's front offices, are useful tools for obtaining feedback (Mourtzis et al., 2018).
Handling continuous customer feedback is a key indicator of the health of the relationship between the parties. The satisfaction check should not be considered as the last element of the customer interaction cycle, but should be carried out periodically at each point of contact, using adequate tools according to the specific communication channel. Regardless of the number of touchpoints identified in the customer interaction cycle, organizations must focus on transforming each touchpoint into a step in the customer journey (Lattuch et al., 2023).

6. Key diagnostic methods in customer relationship management

The RFM (Recency, Frequency, Monetary) user profiling method was implemented in the 1990s and is still functional. The parameters on which the method is based are: 1) how much time has passed since the customer's last order; 2) frequency of purchases for a selected period of time; 3) average value per transaction. The general idea of the RFM-method is to group customers based on their RFM scores. The resulting customer groups are related to their purchasing behavior. The method traces in detail the pattern of behavior of a specific customer or group of customers for a given period, taking into account a change in its characteristics or the transition from one profile to another (Patel et al., 2017). The higher the value of the RFM indicator for a particular customer, the more valuable it is to the organization. Lee (2012) recommends combining the RFM method with positioning strategy and using data mining to segment and classify loyal customers. Zhang et al. (2013) suggest adding a new parameter when applying the RFM-method and transforming it into RFMC, where C stands for clumpiness. Data clustering is typically defined as an unusual cluster of activities clustered together or the degree of discrepancy in the frequency of a parameter (e.g. purchase frequency) that is considered a marker in identifying a profitable customer. Ignoring data aggregation can lead to misinterpretation of customer information. Accounting for data aggregation increases the predictive value of the method and assists the marketing team in identifying potential customers of high value to the organization. In addition, the proposed update of the RFM-method helps to adapt and optimize loyalty programs.

The concept of customer lifetime value (CLTV) can be defined as the present value of the customer,
based on the expected cash flows from the interaction with him (Gupta et al., 2006; Krstevski and Manceski, 2016). Calculating this parameter through various machine learning calculation models provides organizations with a deep understanding of each customer that helps allocate resources to retain high-value customers and increase their lifetime value. According to recent studies, the deep neural network (DNN) model outperforms other models with 71% accuracy (Kumaran et al., 2022; Mandal, 2023). The improved CLTV and segmentation forecasting model helps businesses plan and implement relevant CRM strategies such as customer profitability analysis, cross-selling and hyper-personalization.

The customer churn prediction model is another important indicator in CRM system diagnostics. By analyzing specific factors affecting customer churn and ranking them by importance, various metrics may be created to evaluate customer behavior. Based on them, a model for predicting the outflow of customers may be developed, which is implemented further in the CRM system. Ahn et al. (2006) derive several determinants of customer churn that are measured and evaluated in forecasting. These are: customer satisfaction, switching costs, product usage patterns (by frequency, duration) and customer status. A change in customer status, for example, may explain the relationship between the determinants of churn and the likelihood of churn. Therefore, some churn determinants may directly or indirectly affect customer churn by changing customer status (Baron & Kenny, 1986). Moreover, the degree of customer loyalty is equivalent to the difference between a unit and the churn rate (Hosseni & Tarokh, 2011).

Machine learning and artificial intelligence are deeply embedded as technologically-diagnostic methods for CRM-system verification and improvements. New technologies provide companies with the opportunity to get a more detailed picture of their customers and optimize customer interaction. For example, AI-powered chatbots can improve customer service by providing round-the-clock support, while machine learning algorithms can analyze vast amounts of customer data to identify trends and patterns that might not otherwise be apparent at first glance (Krstevski, 2016; Kumaran et al., 2022; Zhang, 2016). By utilizing the capabilities of machine learning and artificial intelligence, organizations can efficiently calculate crucial customer experience metrics like the net promoter score (NPS) (Schmidt-Subramanian, 2019), customer satisfaction score (CSAT), and Customer Effort Score (CES). This approach not only reduces the processing and analysis time of customer data but also yields accurate predictions of consumer behavior with minimal bias.

7. Conclusion

Global business trends, including digitization, are accelerating the transition to a service economy in developed markets. This reinforces the role of sustainable customer relationships as a source of competitive advantage for companies. Customer database management is the most important strategic resource and an essential element of sustainable competitive advantage (Gil-Gomez et al., 2020). Both innovation and competitiveness require effective data management through sustainable and regular diagnostic methodology. Innovation and accumulation of customer knowledge are irreversible and inseparable (Mothe et al., 2010) as they are part of the process of continuous improvement of the customer experience, which is at the core of the customer interaction cycle in the relationship management system.

Effective diagnostics of customer relationship management is a key success factor for organizations. It needs to be a continuous process to enable the organization to capture all relevant data necessary to improve financial performance in a long run. The study highlights the importance of a holistic approach to customer relationship management that includes both internal and external diagnostic methods. Implementing key diagnostic methods - RFM, CLTV and the churn forecasting model - is essential for successful customer relationship management. These diagnostic tools are fundamental in customer relationship diagnosis and analysis and help identify problems and opportunities for improvement. Future research could focus on the development and implementation of new diagnostic methods to enhance customer relationship management practices. Further exploration of the relationship between organizational and marketing diagnostics and their impact on customer satisfaction and loyalty would be valuable. It would also be useful to investigate the effectiveness of different diagnostic methods in different organizational contexts and industries. It would also
be of interest to explore how new technologies can be used to improve diagnostic methods in customer relationship management.

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BRAND IMAGE, CUSTOMER SATISFACTION AND CONSUMER PURCHASE INTENTIONS IN THE BANKING SECTOR OF NIGERIA: CAN SERVICE QUALITY STRENGTHEN THE RELATIONSHIP?

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JEL: M30, M31, M37

Abstract

The marketing concept holds that the key to realizing the goals of the organization lies in the ability of the organization in creating, delivering and communicating customer value to the target market more effectively compared to the competitors. This research examined brand image, and customer satisfaction as determinants of purchase intention with the moderating role of service quality. A quantitative research which employed both survey and cross-sectional research designs. The study has an infinite population with a sample size of 422. Purposive sampling techniques were employed in the process of administering the copies of questionnaires to respondents. Partial Least Square Structural Equation Modelling (PLS-SEM) was utilised to ascertain the hypothesised relationship. The findings of the study suggested that brand image, customer satisfaction and service quality have a positive and significant effect on purchase intentions. In addition, service quality significantly moderated the relationship between brand image and purchase intentions and customer satisfaction and purchase intentions. The study recommends that managers should improve service quality in clients' views, such as improving banking facilities, commitments to the customer, the interaction between the staff and the client, being ready to listen to the concerns of customers, and being prepared to solve the problems of customers.

Key words:
Brand Image, Customer Satisfaction, Service Quality and Purchase Intention

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Introduction

In today's competitive business world, firms are constantly on the lookout for effective practices that will help them establish a strong brand and increase purchasing intention towards profitability. To obtain consumer purchases in the current harsh competitive environment, competing organisations need to consistently supply a higher level of service and a good perceived brand image. Meanwhile, in recent years, the service industry in Nigeria has emerged as one of the primary drivers of economic expansion, accruing billions of naira in generated revenue annually. As the service sector continues to grow in importance, businesses aim to understand how customers perceive service quality, brand image, and customer satisfaction to impact their purchasing intentions, achieve competitive advantage and profitability (Dam and Dam, 2021).

According to Oledepo and Odunlami (2015), brands play a variety of critical functions in improving consumers’ lives and increasing a company’s financial value. Customers learn about brands based on their previous interactions with their products and marketing activities. The brand has an impact on consumer satisfaction, which ultimately determines the purchase decision. Corporate image has been identified as a significant predictor of consumer satisfaction, and corporate brand is critical because favourable corporate brands assist businesses in achieving greater performance, such as increased sales and profitability (Te-Tu et al., 2012).

This relationship between brand image and purchase intention creates a one-of-a-kind connection with customers, which is critical for retention as well as increasing purchase intention (Schiffman and Kanuk, 2010). The projected image drives the brand's uniqueness, which is critical in a competitive environment where businesses provide comparable products or services. Indeed, several researchers have discovered that a favourable association between brand image and consumer self-image influences customers’ behavioural intentions toward that brand (Paul, 2019). The entire impression of a brand in the minds of consumers is referred to as a brand image. Brand image refers to a brand's real and imagined features in the mind of the consumer (Soltani et al., 2016). Brand image may be produced via the use of media such as advertising. A strong brand image, thus, aids a brand in gaining customer trust and acceptance, which impacts their purchasing decisions (Kumar, Paul and Unnithan, 2020). A consumer will buy brands with a strong reputation and increased brand image increases purchasing intention.

Customer satisfaction is a comparison of expectations with experience perceptions. Customer satisfaction is a measure of how well a product or service satisfies the expectations of the customer. Customer Satisfaction is a statistic or indicator of how satisfied consumers or users of a company's products or services are with those items or services (Chimed-Ochir and Tumurbaatar, 2019). The firm's competitive edge is superior client satisfaction, exceeding clients' demands and desires better than competitors (Minta, 2018). According to Kotler and Keller (2016), customer satisfaction is described as customers' feelings of delight or irritation as a result of a comparison between the performance of a product/service and clients' expectations.

Purchase intention is the likelihood that a consumer will buy a product or service in the future (Alharthey, 2019). A positive purchase intention motivates the buyer to take action, whereas a negative purchase intention discourages the consumer from doing so. According to Nodira and Přemys (2017), purchase intention may be viewed as a pre-determined desire to acquire services in the future; it is also seen as a predictor of customer purchasing behaviour. Purchase intention shows that buyers will keep an eye on mental requirements, examine facts from the external world, evaluate alternatives, make a purchase choice, and grasp the post-purchase experience (Naderibani, Adibzade and Ghahnavihe, 2016). Purchase intention, according to Kotler and Keller (2016), may be described as the consumer's likelihood of purchasing a certain brand or switching from one brand to another. According to Kazmi and Mehmoood (2016), purchase intention is an essential component in consumer buying behaviour since it leads customers to choose between different options in the market depending on their preferences. Customers are more likely to acquire items or services if their purchasing intent is strong. However, purchase intention is affected by a variety of factors, including the customer's preparedness and interest in purchasing the product or service, social influences from others, the general sense.
of what the consumers perceive, their emotions and feelings (Vahdati and Nejad, 2016; Arslan, 2014). However, based on previous research, the impact of brand image and customer satisfaction on purchase intention has been inconsistent.

For brand image, many previous research works found that brand image is positively related to purchase intention (Benhardy et al. 2020; Charo, Sharma, Shaikh, Haseeb and Sufya, 2015). Also, Mehmood and Shafiq (2015) stated that brand image affects the company’s profits due to the fact that high brand image of a product or service could drive customers to purchase products or services even at higher prices. Additionally, Nazarani and Suparna (2021); Razy and Lajevardi (2015) found that brand image influences purchase intention significantly. However, Vigripat and Chan (2007) found that brand image does not affect purchase intention.

Customer satisfaction is a determinant of purchase intention, this positive impact is demonstrated by Lamai et al. (2020), Tran and Le (2020); Banjarnahor (2017), Nodira and Přemysl (2017), Murwanti and Pratiwi (2017), Putri and Astuti (2017), and Alharthey (2019). Conversely, other studies, Octaviana and Nugrahantingsih (2018), and Prastiwi (2016) reported a nonsignificant influence of customer satisfaction on purchase intention. These inconsistencies informed the decision to introduce service quality which may strengthen the relationship that already exists as recommended by Baron and Kenny (1986).

The gap between expected and actual service quality is defined as service quality (Chimed-Ochir and Tumurbaatar, 2019). Service quality is a comparison of how well the services provided match consumers' expectations (Gaberamos & Parasibu, 2022). Ultimately, service quality is basically the extent to which delivered service meets customer expectations and beliefs (Alharthey, 2019). Simply put, service quality is a company's capacity to please consumers or reach the level of their expectations. The link between service quality and purchase intention is obviously illuminated; exceptional service quality gives an upper degree of favourable customer purchasing intention of banks (Wiyadi and Ayuningtyas 2019). Improved service quality leads to more positive behavioural intentions, which boosts consumers' purchasing intentions as well as their frequency of visiting and patronising such institutions (Soltani et al., 2016). For instance, when a bank delivers greater service quality, consumer satisfaction rises, as does product purchase intention. In other words, when consumers are satisfied with the service quality, their intentions to purchase are enhanced.

Plethora of studies have confirmed service quality as an antecedent of purchase intention, Aptaguna and Pitaloka (2016), Banjarnahor (2017), Murwanti and Pratiwi (2017), Widjastuti et al. (2017), Octaviana and Nugrahantingsih (2018), Alharthey (2019), Wiyadi and Ayuningtyas (2019), and Naveed et al. (2019) confirm its positive presence. Unfortunately, other scholars found no impact (Maharsi et al., 2021; Mambu, 2015; Widjanti and Suprayitno, 2017; Wonggotwarin and Kim, 2017) of service quality on purchase intention.

Although there have been several studies on brand image, consumer satisfaction and purchasing intention (Dam and Dam, 2021; Maharsi et al., 2021; Saputra and Ekawati, 2020; Buyugdagi, 2021; Mehmood and Shafiq, 2015), there is - to the best of our knowledge - no research investigating brand image, customer satisfaction and moderated by service quality in the banking industry and also in Gusau township. Consequently, the focus of this study is to investigate the moderating role of service quality on the relationship between brand image, customer satisfaction and purchase intention in the context of banks in Gusau township. Similarly, based on the research objective, the following hypotheses were formulated to guide the study:

H01: Brand image does not have significant effect on purchase intention of selected banks in Gusau township.

H02: Customer satisfaction does not have significant effect on purchase intention of selected banks in Gusau township.

H03: Service quality does not have significant effect on purchase intention of selected banks in Gusau township.

H04: Service quality does not moderate the relationship between brand image and purchase intention of selected banks in Gusau township.

H05: Service quality does not moderate the relationship between customer satisfaction and purchase intention of selected banks in Gusau township.

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Theory of Planned Behavior

Fishbein and Azjen developed the theory of reasoned action in 1975. According to this theory, a consumer's behaviour is characterised by his or her purpose to execute the behaviour, and this intention is influenced by his or her approach to the behaviour and specific practice. Intention is the best predictor of behaviour (Otori, 2018). Intention is essentially a conceptual representation of a person's willingness to do a specific behaviour (Ojeleye et al., 2021). Furthermore, if customers are eager and pleased to acquire a specific product, it indicates that they have purchasing intentions.

According to the theory of reasoned action, a person's purpose to conduct or not execute a given activity is the primary predictor of behaviour (Wu and Chen, 2019). Mokhtar et al., (2018) define intention as the amount of work one is willing to put in to attain a goal. Along similar lines, purchase intention might be defined as a consumer's long-term propensity to engage in a specific action (i.e. purchase) in a specific situation. Before making a purchase choice, the consumer will be directed by their prior experience, preferences, and external environment to acquire information, assess alternatives (brand image, customer satisfaction, and service quality), and eventually make a purchase decision.

Research Model

![Research Model Diagram]

Source: Developed from Previous Studies, 2022

The model in figure 1 represents the research framework. The predictor variables are brand image and customer satisfaction predicting the criterion variable which is purchase intention while service quality is moderating the relationship. The model was developed from the review of previous studies. However, the moderator introduced a literature gap based on the assertion that service quality can strengthen the relationship between brand image and purchase intentions and customer satisfaction and purchase intention.

Research Methodology

The research used a quantitative approach to gather and analyse numeric data, applying statistical methods to analyse the relationships between two or more variables (Ojeleye et al., 2022). This study included survey and cross-sectional research designs. The survey research approach was utilised since the study asked for responses from respondents who are representative of the population using a well-structured questionnaire (Ojeleye et al., 2021). In addition, the procedure through which the respondents were contacted was a one-shot or cross-sectional approach; defined as a type of research design where data are collected from different individuals at a single point in time. The current investigation was conducted in Gusau township, Zamfara.
State. The predictor variables are brand image and customer satisfaction, the moderating variable is service quality, and the criterion variable is purchase intention. The respondents are the customers of selected banks (Access Bank, Sterling Bank, Keystone Bank and First Bank) in Gusau township. The respondents’ perceptions were sought over two weeks of data collection. Customers of selected banks in Gusau township, Zamfara state, comprise the study’s population. As a result of the customer’s pervasiveness, the population is infinite, because the population is greater than 50,000 and according to Eseoghene, Joseph, Samson and Stephen, (2020) any population greater than 50,000 can be considered infinite. The study used the formula for an infinite population to arrive at a sample size of 384. However, due to the constant nature of low response rate in survey studies, Groves, (2006) supports the notion that a researcher needs to take all necessary measures to mitigate the non-response rate as much as possible. In this regard, Israel (2013) supports between 10-30 per cent increment in the sample size. Hence, in this study, the sample size was increased by 10 per cent to account for non-response which brings the sample size to 422. The sampling technique that was used is purposive sampling technique. Purposive sampling was employed because it allows the researcher to utilise their discretion when selecting individuals of the population to participate in their surveys. This technique was used to distribute copies of questionnaires to respondents. A total of 422 copies of the questionnaire were returned and analysed.

Measures

With four items, the factors assessing the influence of brand image were adopted from Lien, Wen, Huang, and Wu (2015). The sample item is "This bank has a good brand identity" with a plausible answer range of 1 (strongly disagree) to 5 (strongly agree), and the Cronbach alpha is 0.739 which demonstrates the consistency of the scale and its appropriateness for this study. For this study, the Cronbach alpha is 0.855. Also, four questions were adopted from Orel and Kara (2014) to measure the influence of customer satisfaction. The sample of the question is "This bank meets my expectations", [it] has a potential answer range of 1 (strongly disagree) to 5 (strongly agree), and the Cronbach alpha is 0.805, demonstrating the consistency of the scale and its suitability for this study. The Cronbach alpha for this study is 0.789. The service quality measurement scale was adapted from Shpetim (2012) and included five items. A sample of the item is: "Bank personnel are always ready to handle potential problems” with a probable answer range of 1 (strongly disagree) to 5 (strongly agree), and the Cronbach alpha is 0.783, demonstrating the consistency of the scale and its suitability for this study. The Cronbach alpha for this study is 0.812. Yoo, Donthu, and Lee (2000) developed three (3) item purchase intention measurement scales. "I am willing to recommend that others buy this brand or product," with a potential answer of 1 (strongly disagree) to 5 (strongly agree) and Cronbach’s alpha ranging from 0.89 to 0.94, demonstrating the consistency of the scale and its applicability for this study. Cronbach’s alpha for this study is 0.807.

Data Analyses

To perform preliminary analyses such as the test of normality, non-response bias, and common method bias, the data were analysed using Statistical Software for Social Sciences (SPSS) version 27. Furthermore, the study looked for collinearity and found no link between the predictor variables. As a consequence, the data was confirmed to be clean and appropriate for further analysis. The measurement model and the structural model of PLS path modelling were analysed and computed using SmartPLS.
The measurement model analysis comprised testing for the reliability and validity of the data gathered for this study. For convergent validity, the study employed average variance extracted (AVE), while Cronbach's alpha and composite reliability (CR) were utilised for the test of reliability. Finally, Heterotrait-Monotrait (HTMT) ratio was used to measure discriminant validity. The item loadings, extracted average variance, Cronbach's alpha, and composite reliability scores of the latent constructs were calculated and shown in Table 1. Hulland (1999) recommends a minimum threshold of 0.5 for item loading. As a result, items loading less than 0.5 (i.e., SQ2) were removed from the model. Furthermore, Hair et al., (2021) recommended Cronbach's alpha and composite values of 0.70 for the test of internal consistency of the latent construct. For the study, the lowest composite reliability is 0.865 and the highest is 0.902, and the lowest and highest Cronbach's alpha are 0.789 and 0.855 respectively. With regards to the convergent validity, AVE values of all the latent constructs were all above 0.5 thresholds ranging from 0.619 to 0.719.

### Table 1

<table>
<thead>
<tr>
<th>Study (n=422): Loadings, Reliability and Convergent Validity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Construct</strong></td>
</tr>
<tr>
<td>---</td>
</tr>
<tr>
<td>Brand Image</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Customer Satisfaction</td>
</tr>
<tr>
<td></td>
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<tr>
<td></td>
</tr>
</tbody>
</table>

The measurement model is shown as a figure with the following key:

- **BI**: Brand Image
- **CS**: Customer Satisfaction
- **SQ**: Service Quality
- **PI**: Purchase Intentions

The figure illustrates the relationships between the constructs and the indicators, with item loadings shown on the arrows connecting the indicators to the constructs.
A discriminant validity test is performed on all constructs to examine the extent to which they do not replicate themselves in the model’s analysis. The HTMT ratio was utilised in the study to assess the discriminant validity of the latent constructs. Henseler, Ringle and Sarstedt (2015) found that when the indicator runs between 0.65 and 0.85, the Fornell and Larcker criterion does not identify a lack of discriminant validity. Thus, Hair et al. (2021) proposed that when the constructs are conceptually similar, the HTMT criterion is used, and when they are conceptually distinct, the HTMT threshold is used. Because the predictor variables brand image, customer satisfaction, and service quality are conceptually diverse, the study used HTMT. As a result, the investigation validated the discriminant validity of the latent variable since the values in Table 2 below are less than 0.85.

<table>
<thead>
<tr>
<th>Construct</th>
<th>BI</th>
<th>CS</th>
<th>PI</th>
<th>SQ</th>
</tr>
</thead>
<tbody>
<tr>
<td>BI</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CS</td>
<td>0.524</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PI</td>
<td>0.618</td>
<td>0.658</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SQ</td>
<td>0.622</td>
<td>0.702</td>
<td>0.577</td>
<td></td>
</tr>
</tbody>
</table>

**Table 2**

**Heterotrait-Monotrait (HTMT) Correlations Discriminant Validity**

**Assessment of the Structural Model**

The 5000 bootstrapping approach was used to do direct relationship and moderation analysis. Using this approach, the researchers calculated the $R^2$, path coefficient ($β$), corresponding t-statistics, and p-values of the model. Furthermore, the predictive relevance ($Q^2$) and effect sizes ($f^2$) were calculated to determine the study model’s relevance.

**Table 3:**

**Test of the direct and moderating effect**

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Relationship</th>
<th>Beta</th>
<th>Standard Error</th>
<th>T-value</th>
<th>P-value</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>$H_{01}$</td>
<td>BI $\rightarrow$ PI</td>
<td>0.205</td>
<td>0.081</td>
<td>2.652</td>
<td>0.008***</td>
<td>Rejected</td>
</tr>
<tr>
<td>$H_{02}$</td>
<td>CS $\rightarrow$ PI</td>
<td>0.259</td>
<td>0.075</td>
<td>3.350</td>
<td>0.001***</td>
<td>Rejected</td>
</tr>
<tr>
<td>$H_{03}$</td>
<td>SQ $\rightarrow$ PI</td>
<td>0.240</td>
<td>0.057</td>
<td>4.448</td>
<td>0.000***</td>
<td>Rejected</td>
</tr>
<tr>
<td>$H_{04}$</td>
<td>SQ*$BI$ $\rightarrow$ PI</td>
<td>0.262</td>
<td>0.079</td>
<td>1.977</td>
<td>0.048**</td>
<td>Rejected</td>
</tr>
</tbody>
</table>
Table 3 presents the model's path coefficients, p-values, and t-statistics for the direct relationships. Figure 3 equally presents the various path coefficients of the variables. From Table 3, brand image had a positive and significant effect on purchase intention with a path coefficient (β)=.205, t-statistics=2.652, and p=0.008 and p<0.01 therefore H₀₁ is rejected. Likewise, customer satisfaction had a significant positive effect on purchase intention with path coefficient (β)=.259, t-statistics=3.350, and p=0.001 and p<0.01 therefore H₀₂ is rejected.

Also, service quality had a positive and significant effect on purchase intention with a path coefficient (β)=.240, t-statistics=4.448, and p=0.000 and p<0.01 therefore H₀₃ is rejected. The model's path coefficients, p-values and t-statistics were measured in H₀₄ and H₀₅. First, service quality significantly moderated the relationship between brand image and purchase intention with a path coefficient (β)=.262, t-statistics=1.977, and p=0.048 and p<0.05 therefore H₀₄ is rejected. Lastly, service quality significantly moderated the relationship between customer satisfaction and purchase intention with a path coefficient (β)=.247, t-statistics=2.012, and p=0.044 and p<0.05 therefore H₀₅ is rejected. Meanwhile, $Q^2$ was used to determine the predictive relevance of the exogenous variable. Garson (2016) believes that the $Q^2$ value of 0 or negative showed that the model is irrelevant in predicting the endogenous variable. $Q^2$ value of 0.210 depicted in Table 3 above suggests the study’s model has predictive relevance. Meanwhile, The R-square shown in the measurement model in Figure 2 and Table 3 above is $R^2=0.378$ showing that the predictor variables jointly account for 38% variance in the endogenous variable; purchase intention while the remaining 62% is explained by other variables not included in the model. Based on Chin's (1998) $R^2$ threshold, an $R^2$ value of 38% is considered moderate.
The Effect Size

Effect size estimates the exogenous construct on the endogenous construct using the $f^2$ advocated by (Cohen, 1988). Table 4 displays the model's $f^2$ assessment. Cohen's Small, Medium and Large coefficients are represented by the minimum estimates values of 0.02, 0.15, and 0.35. So, from Table 4 brand image had no effect size of 0.019, customer satisfaction and service quality had small size effect sizes of 0.028 and 0.099. The moderating role of service quality between brand image and purchase intention had a small effect size of 0.054. Finally, the moderating role of service quality between customer satisfaction and purchase intention had a medium effect size of 0.239.

<table>
<thead>
<tr>
<th>Construct</th>
<th>$f^2$</th>
<th>Effect size</th>
</tr>
</thead>
<tbody>
<tr>
<td>BI</td>
<td>0.019</td>
<td>None</td>
</tr>
<tr>
<td>CS</td>
<td>0.028</td>
<td>Small</td>
</tr>
<tr>
<td>SQ</td>
<td>0.099</td>
<td>Small</td>
</tr>
<tr>
<td>SQ*BI-&gt;PI</td>
<td>0.054</td>
<td>Small</td>
</tr>
<tr>
<td>SQ*CS-&gt;PI</td>
<td>0.239</td>
<td>Medium</td>
</tr>
</tbody>
</table>

The Importance-Performance Map Analysis

![Importance-Performance Map Analysis](image)

Figure 4: Importance-Performance Map Analysis

The important-performance map analysis was used to determine which of the three predictor variables should be prioritised by management when making decisions. In plain terms, Tailab (2020) stated that the analysis is intended to identify areas for improvement that management should prioritise. Meanwhile, Hair et
al. (2014) proposed that importance should take precedence over performance when making these decisions. Based on the importance shown in Table 5 and Figure 4, First, the final target construct (i.e., purchase intention) and service quality have high importance with a path coefficient of 0.295 at 38.8%. Therefore, should be the number one priority in management decisions. Second, purchase intention and customer satisfaction have relatively high importance with a path coefficient of 0.283 at 41.2%. Thus, should occupy second place in management decisions. Lastly, final target purchase intention and brand image have the lowest importance with a path coefficient of 0.238 at 38.4%. Thus, should occupy the least importance in management decisions.

<table>
<thead>
<tr>
<th>Construct</th>
<th>Importance</th>
<th>Performances</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>SQ</td>
<td>0.295</td>
<td>38.823</td>
<td>1st</td>
</tr>
<tr>
<td>CS</td>
<td>0.283</td>
<td>41.200</td>
<td>2nd</td>
</tr>
<tr>
<td>BI</td>
<td>0.238</td>
<td>38.382</td>
<td>3rd</td>
</tr>
</tbody>
</table>

### Discussion

The result of the structural equation model in Table 3 for the first hypothesis showed that brand image has a positive significant effect on purchase intention of selected banks in Gusau township. It simply means that an increase in brand image strategies will lead to an increase in consumer purchase intention. The finding is in tandem with previous studies by Benhardy, Hardiyansyah, Putranto and Ronadi 2020; Charo, et al., 2015 which established that brand image significantly predicts purchase intentions. However, the study contradicts the findings of Vigripat and Chan (2007) who found that brand image does not necessarily drive consumers' purchase intentions.

Again, Table 3 showed the finding of the second hypothesis which found that customer satisfaction has a positive and significant effect on purchase intention of selected banks in Gusau township. The positive relationship depicts a direct effect between customer satisfaction and purchase intention. It simply means that the more customers are satisfied with the products they purchase, the more likely they are going to nurse the intention to repurchase in the nearest future in Gusau township. The finding is in congruence with Lamai et al. (2020) Tran and Le (2020), Banjarnahor (2017), Nodira and Přemysl (2017), Murwanti and Pratiwi (2017), Putri and Astuti (2017), and Alharthey (2019), who all reported a positive significant effect of customer satisfaction of purchase intention. Nonetheless, this finding refutes that of Octaviana and Nugrahaningsih (2018), and Prastiwi (2016) who found that customer satisfaction does not have a positive link with consumer purchase intention.

In addition, the structural equation model result in Table 3 for the third hypothesis revealed that service quality has a positive significant influence on the purchase intention of selected banks in Gusau township. It means that the better the quality-of-service delivery experienced by consumers, the more likely they are to repurchase the goods in the near future in Gusau township. The finding is consistent with previous studies (e.g., Alharthey, 2019; Soltani et al., 2016; Chimed-Ochir and Tumurbaat, 2019; Abbas, Akbar and Ali, 2020) who found that service quality positively predicts consumer purchase intentions.

The fourth hypothesis found that service quality significantly moderated the relationship between brand image and purchase intentions. This result suggests that an increase in service quality causes a rise in brand image and purchase intention. Gardner et al., (2017) referred to this type of moderation as an accentuating effect. The accentuating moderator explains a strengthening effect which occurs when both the predictor variable and criterion variable have the same coefficient (positive or negative). Consequently, since both service quality and brand image have positive coefficients (see: table 3), service quality strengthens the relationship between brand image and purchase intentions. Furthermore, Sharma (2003) called this type of
moderation a quasi-moderator used to explain moderating effect when both the direct and indirect relationships are significant. In other words, since the direct relationship between brand image and purchase intention is significant and also the moderating relationship between the variables is significant, then quasi-moderation has occurred. This is a novel finding in the banking sector of Nigeria as no previous study analysed the possibility of service quality strengthening the relationship between brand image and purchase intentions. Literally, when the management of these financial institutions undertakes a brand image-service quality marketing mix strategy customers’ purchase intentions are likely to be activated.

Finally, the fifth hypothesis revealed that service quality moderated the relationship between customer satisfaction and purchase intentions significantly. This finding implies that an improvement in service quality leads to an increase in customer satisfaction and purchase intentions. Gardner et al. (2017) referred to this moderation as having an accentuating impact. The accentuating moderator describes the strengthening effect that arises when the coefficients of the predictor and criterion variables are the same (positive or negative). As a result, because both service quality and customer satisfaction have positive coefficients (see table 3), service quality strengthens the link between customer satisfaction and purchase intentions. In addition, Sharma (2003) referred to this sort of moderation as a quasi-moderator, which is utilised to explain the moderating effect when both the direct and indirect relationships are significant. In other words, because the direct association between customer satisfaction and purchase intention is significant, as well as the moderating relationship between the variables, quasi-moderation has transpired. Similarly, understanding the modalities through which service quality moderated the relationship between customer satisfaction and purchase intentions is another novel finding of this study in the context of Nigerian banks. Although prior studies have established inconsistencies in findings in the relationship between customer satisfaction and purchase intention, the introduction of a moderator as recommended by Baron and Kenny (1986) justified employing service quality as a possible moderator to strengthen the relationship between customer satisfaction and purchase intention. Consequently, when the emphasis is placed on customer satisfaction and service quality, customers are likely to make a purchase.

**Conclusion and Implications**

Brand image, customer satisfaction, and service quality all play critical roles in corporate sustainability. According to theory, consumer intention determines real purchasing behaviour. As a result, client purchase intentions are predicted by brand image, customer satisfaction, and service quality. Furthermore, the association between brand image and purchase intention, as well as customer satisfaction and buy intention, was reinforced by service quality.

This study has taken a new look at purchase intention, which receives continuous attention from academic researchers and managers. Marketing managers of these banks must focus on increasing the brand image, customer satisfaction and service quality.

The first is that marketing managers should concentrate their efforts primarily on increasing service quality in the eyes of consumers by enhancing banking facilities, detailed product information, display of most recent and updated brands, commitments to the customer, frequent contact between employees and the client, ready to assist customers and ready to address customer issues and reduction in customer’s wait-time.

Marketing Managers should provide communication plans such as advertising, word of mouth, public relations, and other promotional methods, among other things, to boost customer awareness of the brand image. On the contrary, if customers are not aware of your brand products, then it is very unlikely for them to select the brand.

Customer satisfaction implications may be utilised through bank management’s dedication to attaining management competency and delivering quality assurance service implementation. Sales staff also play an important role in enhancing customer satisfaction by aggressively monitoring customer needs and making all necessary efforts to meet them promptly.

Marketing managers should implement a marketing strategy mix that aims to improve both brand image
and service quality. This is since improved service quality will boost brand image and likely lead to the purchase of the Company's product.

Marketing managers should improve customer satisfaction by providing high-quality service. The moderating role of service quality between customer satisfaction and purchase intention demonstrates that the procedure by which products are delivered to customers is very important to them.

In sum, the study provides a model by which consumer purchase intention can be enhanced and also gives critical implications for improved strategic brand management.

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Garcia-Salirrosas et al. (2022) ‘Purchase intention and satisfaction of online shop users in developing countries during the COVID-19 pandemic’ Sustainability, 14(10), https://doi.org/10.3390/su14106302


THE INTERNATIONAL TRADE OF NON-EURO CEE COUNTRIES DURING THE PERIOD 2014-2021. A MULTIPARAMETER ANALYSIS

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JEL: F14, F43

Abstract

On their development path the Central and Eastern European (CEE) countries partially overcame the gap to the developed countries by means of the external trade, acquiring the needed goods and services and satisfying the foreign demand for their products which otherwise was lacking on their territory or seizing an opportunity. In the current paper the authors aim at analysing the evolution of the trade flows of the countries they thought to be the most similar in this aspect, which are the ones belonging to the non-euro area of the European Union (EU) during the period 2014-2021. The research used the Eurostat database, the products being classified after the Standard International Trade Classification (SITC) main categories in order to find out the sectors with the largest contribution to the total surplus or deficit. Moreover, there were identified the main partners of every analysed country and calculated the evolution of respective trade balances at the start and the end of the selected period of time. The authors findings reveal an increasing dependency on exports to Germany, imports from China, decreasing imports of mineral fuels from Russia and also important similarities and differences in the group. The novelty of the manuscript resides in comparing the most profitable sectors during the analysed period and identifying the partners’ contribution to the surplus or the deficit. The current research might be extended with a more in-depth level of multinational enterprises and also in the case of services.

Key words: international trade, external trade, balance of trade, trade partners, CEE trade

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1. Introduction

All countries use exports and imports in order to benefit from an identified opportunity on the global market or to satisfy the need of goods and services they cannot produce due to the lack of production factors or efficiency. External trade is the traditional way and first step of internationalisation of a company, being complementary with and might leading to a foreign direct investment (FDI) eventually (Albulescu and Goyeau, 2019).

Internationalization can be defined as the extension of a production process (understood as the evolution of some resources or raw materials from the initial to the final stage of consumption) across a political border. If people don't want or are not allowed to move from one territory to another, then it is important that the final goods are moved to the destinations where they are required for consumption. The primary material resources also not being distributed evenly on the Earth's surface, explain the trend of an increasingly economic globalization. This expected evolution is recorded also in the case of Central and East European (CEE) countries, which increased their share in the international trade from 2.2% to 4.6% during the period 2000-2016 (Bierut and Kuziemska-Pawlak, 2017; Voronina et al., 2018), as a consequence of the EU membership and the increase of multinational corporations’ activity in host economies.

In the current paper the authors will try to analyse both flows of the external trade of EU non-Euro CEE countries during the period 2014-2021 by comparing the volumes, the trade balances, identifying the main destinations and sources and finding the most profitable sectors. According to the European Commission's Convergence Report (European Commission, 2022), Croatia is ready to adopt the euro starting with 1 January 2023 and therefore we will exclude it from the group and will draw the primary data for Bulgaria, Czechia, Hungary, Poland and Romania even if Bulgaria has its national currency pegged to EUR. Data is drawn from the EUROSTAT databases using the Standard International Trade Classification (SITC). During our research we will try to answer the following questions: whether we have either an homogenous or heterogenous group of countries (Q1), which are the most successful and unsuccessful countries in terms of trade profitability if the case is depending on the balance of trade (Q2), which are the sectors with the largest contribution to the external trade of the selected countries in the analysed period (Q3) and, last but not least, what is the trend of the international relations with the most important partner countries after the financial and global crisis of 2008-2012 (Q4). Using data from the years 2020 and 2021 makes our research more useful, as seizing the effect of the pandemic on the previously established connections of non-euro CEE countries with the foreign entities and on the evolution of their external trade in general. Given the services share in total trade is still pretty small, the authors proposed to analyse for the moment only the external trade evolution with goods for the selected countries and period.

The paper is organized as follows: in the second section we will reveal the most recent articles regarding the economies and especially the external trade of CEE countries, the third section will cover the methodology and data used in our research, the forth section includes our results and the last section makes conclusions.

2. Literature Review

The economies of CEE countries have undergone major structural transformations over the past 33 years from a planned or centralized type to market economies. In response to the creation of the Committee of European Economic Cooperation in western Europe, the Eastern European countries (Bulgaria, Czechoslovakia, Hungary, Poland, and Romania) founded COMECON (by name of the Council for Mutual Economic Assistance or CMEA) in 1949 under the coordination of the Union of Soviet Socialist Republics. Unfortunately, Comecon was only an imitation of internationalization, as all decisions regarding the production and trade were made politically and especially after consulting the Soviet Union. Therefore, the COMECON member states were faced an unrealistic perspective as what they understood by international trade was first the abolition of any type of trade carried out by private actors (Apăvăloaei et al., 2019). After meeting the pre-accession criteria and a successful negotiation, the Visegrad group (the Czech Republic,
Slovakia, Hungary, Poland), the Baltic countries, Slovenia, Bulgaria, Romania and Croatia joined the EU and its single market, leading to a higher standard of living for their citizens, stronger national and EU institutions or ensuring the respect of fundamental rights.

The CEE countries accession into the EU has increased the exports and imports in both parts and final goods between the two parts of the European continent; it stimulated not only the exploitation of the existent comparative advantages but also the production of intermediate goods, created previously in the home countries of MNCs (Martinez-Zarzoso et al., 2015). Using the gravity model and aiming at analysing the trade integration of the previous countries, (Bussière, Fidrmuc and Schnatz, 2005) found out that the flows volumes between the newer and older members had been very dynamic and although they were significantly behind than the standard, gravity forces would suggest particularly in the first years of the transition process, converged to a more normal level over time. CEE economies are widely open (compared to the international average) and thus very dependent on external developments, mentioning the small and medium economies are the most open as they need exports as much as possible in order to generate the needed financial support for the acquisition of materials, resources or capital. Ekonomicznego Katowicach and Sobański (2015) reached to interesting results regarding the openness, which ranges from 80-100% in case of Romania, Poland and Ukraine to 170% in case of Hungary, the Slovak Republic and the Baltic Countries in 2013. The author shows also, that after the financial and global crisis the share of exports and imports in GDP for the CEE region surpassed even that of the group of major exports among the developing countries in Asia. The correlation analysis performed by Vaida Pilinkienė, 2016 demonstrates that trade openness positively and significantly correlates with GDP per capita as well as with a series of indicators of competitiveness, such as the research and development expenditure, industry added value and labour productivity. This result reveals that the high-degree trade openness of CEE countries provides the relevant conditions for economic growth and competitiveness increase in the respective countries.

There are also authors (Zaman et al., 2011; Mencinger, 2013) who identified some negative implications of the accession to the EU and the increasing role of the MNCs in the economy. Among the related effects generated in a vulnerable or a transition economy we can enumerate as follow: a large current account deficits and the corresponding increase of indebtedness, large trade account deficits, the cheap sale of the best productive assets to foreign companies (with the exception of Slovenia), a growing gap between the gross domestic product and gross national product, the avoiding or lowering taxes on profits by manipulating the transfer prices through subsidiaries, reducing competition where local companies went bankrupt as the MNCs turned into a powerful monopoly, foreign banks with twice the rate of returns on equity in their home countries in case of financial crisis.

Miron and Holobiuc (2020) studied the main trends within 3 geographical clusters of countries: Central Eastern, North Western and Southern Europe and their findings show that economies which had lower initial GDP increased faster than the countries with higher performances and also with the increase of GDP, the gap reduces. Although the North Western countries had important increases of GDP per capita, the group is still diverging. As far as the Southern Europe countries are concerned, in the analysed period they recorded more modest economic performances or even negative. The authors argue that countries from Central and Eastern Europe had the most significant performances in terms of enhancing their GDP per capita and especially reducing the disparities. The same conclusion has been drawn by Vrh, 2018 who discovered a decline in the domestic added value gap between the CEE-10 countries and EU-15 starting with 2003, even if the latter group still had a systematically larger share of added value in their exports. In order to perform better on the international market and maximize the added value, companies need to position at the two ends of the smile curve proposed by Shih, the founder of Acer (Meng, Ye and Wei, 2020), meaning that research & development and marketing activities add the largest added value and the fabrication process is the smallest. Covering the years following the accession of CEE countries into the European Union, from 2004 until 2018, Dobrzanski and Grabowski (2019) demonstrated that all the analysed member states improved in terms of both pure and structural productivity, due to price liberalisation, removal of most of tariff barriers, strict fiscal policy,
competitive exchange rates, privatisation of state companies or deregulation.

The results of Kordalska and Olczyk (2022) validate the success of some Asian countries (Vietnam, Philippines or Malaysia), which have changed the production structure from an assembly hub for global value chains (GVC) for Japan and Korea to the leading exporters of high technology intermediates to advanced economies. Therefore, the authors recommend that the CEE countries should be oriented towards changing their role within GVCs, especially with the leader, or they should look after new chains or even create regional chains of their own.

Together with economic growth, international trade is one of the main factors influencing a country competitiveness. Compared to the innovation driven economies, where the relationship between trade and competitiveness is at the 1% level, in case of efficiency-driven economies the influence is significantly larger, at a 10% level (Rusu and Roman, 2018). Besides the export volumes, what countries export can count more in the equation of economic growth (Burciu et al., 2020) being the proponents of the restructuring of industries aiming more sophisticated outputs even if their comparative advantage (abundance of resources, cheaper labor, etc.) would rather indicate a specialization in low tech manufacture products and eventually medium tech manufactures. As the authors remind, in the 1980s, Poland, Hungary, Romania and Yugoslavia tried to develop import-based growth strategies, starting from the idea of developing competitive domestic industrial sectors by importing Western technology, but it did not produce the expected results. The effect is known as the “Polish disease”, which describes the inability to overcome the technological gap to the Western economies through imports and the negative impact of this policy on the ongoing deficit. During the period 2008-2017, the share of high-tech products in the EU export decreased to 16,2% from 17,2%; but inside the Union the CEE countries performed better than the EU-15, a good compound annual growth rate being reported by Poland (9,8%), Latvia (7,9%), Romania (7,7%) and Slovakia (7,0%) (Braja and Gemzik-Salwach, 2020).

3. Material and Methods

In the current paper the authors propose a phenomenological research trying to capture and analyse the recent evolution of the international trade of the non-euro CEE economies. Following the European Commission's Convergence Report 2022, we decided to download the customized raw data for 5 countries from EUROSTAT, namely Bulgaria, Czechia, Hungary, Poland and Romania. In order to identify the most important sectors we have used the one-digit codes of SITC nomenclature, resulting the following products:

- food and live animals;
- beverages and tobacco;
- crude materials, inedible, except fuels;
- mineral fuels, lubricants and related materials;
- animal and vegetable oils, fats and waxes;
- chemicals and related products;
- manufactured goods classified chiefly by material;
- machinery and transport equipment;
- miscellaneous manufactured articles;
- commodities and transactions not classified elsewhere in the SITC.

The comparison is made taking into consideration the share in total trade and the balance of trade for each category, which is a very good indicator for finding out the sectors which contribute to a country surplus or a deficit. Finally, we identified the main 5 sources and destinations standing out at the start and the end of the analysed period for every non-euro CEE country and calculated the balance of trade of each of them during the period 2014-2021.

4. Results and Discussion

The proximity to the home countries of MNCs (on which the gravitational models base on) and the EU membership quality coming with all advantages, especially the tariff or non-tariff barrier removal, determined
the CEE countries to redirect and acquire goods to/from another EU member states. With the exception of the evolution of intra-EU imports share starting with 2017, all analysed economies follow a trade pattern which reveal a very high dependence on the European market (Tables 1, 2).

Table 1

<table>
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Source: authors calculation based on Eurostat, [TET00037], last update 15.09.2022, extracted on 21.09.2022.

Table 2

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</table>

Source: authors calculation based on Eurostat, [TET00037], last update 15.09.2022, extracted on 21.09.2022.

Table 1 shows that inside this quasi-homogenus group of countries, the newest EU members, Romania and Bulgaria have the smallest intra-EU share of exports, but they nevertheless recorded the highest increase in the analysed period (10.7 p.p. in case of Bulgaria and 9.3 p.p. in case of Romania). Poland and Czechia increased their shares moderately, 5.2 p.p. and 4.3 p.p. respectively and Hungary, although not having the largest share of intra-EU exports registered a modest increase, of 2.6 p.p. Czechia had the highest share (80.4% of intra-EU exports in total in 2021), while the lowest is held by Bulgaria (60.2% in 2014). During the analysed period, the share of intra-EU imports had practically the same evolution for all 5 CEE countries, with a continuous increase until 2016, peaking at 75.9% in case of Czechia and 75.7% for Hungary and then decreasing until 2021. Bulgaria holds the smallest share of intra-EU trade also for imports as the indicator values ranged between 60% and 64.1% and Romania is the most constant, its share ranging between 72.4% and 74.8%. An interesting gap between the export and import intra-EU share occurs in cause of Poland, as although the average is at a level of 73.4% of exports towards the EU member states, the average share of intra-EU imports reaches only 67.6%. It is also worth mentioning the difference between a more static intra-EU share of imports compared to a dynamic share of exports of the CEE-5 countries.

Depending on every country territory and population, product competitiveness, the degree of openness, decision factors or private actors etc., the CEE-5 states perform differently on the international market. These factors influence the total production or the plenitude of resources, either human or land (territory and population), the purchase decision (product competitiveness), the know-how transfer and opportunities
capitalization (the degree openness) and also the institutional or human capital education (public and private actors), which will finally lead to a different weight in the European trade. We have calculated each country share in the intra- and extra-EU trade flows and we found out a significant improvement of the relative indicator in the selected period, which is determined mainly by Poland. Bulgaria increased its share in total UE export by 40%, but, starting from a low level, the improvement in the total share is only of 0.2 p.p. As both tables reveal, the analysed group of countries contribute to the total trade of the EU with an average of more than 14 p.p. during 2014-2021 which is already an important share given the development stage and size of the other UE member states.

Table 3

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Source: authors calculation based on Eurostat, [Intra and Extra-EU trade by Member State and by product group], last update 16.08.2022, extracted on 04.09.2022.

Table 4

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</tbody>
</table>

Source: authors calculation based on Eurostat, [Intra and Extra-EU trade by Member State and by product group], last update 16.08.2022, extracted on 04.09.2022.

The balance of trade of the non-EURO CEE countries reveals important differences inside the group:
I. Czechia has a trade surplus which rose from 15.6 billion in 2014 until 19.94 billion EUR in 2020. Probably due to the pandemic situation the increasing slowed down in 2020, thus the trade balance reached 18.03 billion in 2020 and then it registered a significant decrease until 12.24 billion, which is 3.36 billion less than the level registered in 2014;
II. Hungary, after a 3-year uptrend, started to register a decline of the trade balance reaching even a negative value in 2021 (-1.12 billion EUR);
III. The most sinuous values are recorded in case of Poland, which reaches a first peak in 2016 (3.89 billion EUR), a minimum in 2018 (-4.58 billion EUR), in 2020 the second peak, which is considered the highest ever trade surplus (10.56 billion EUR), for changing it the next year for a deficit (-0.58 billion EUR);

IV. Bulgaria holds the most constant balance of trade, starting from -4.07 million EUR in 2014 and reaching -4.41 billion EUR in 2021 and values ranging between -4.58 billion EUR (in 2018) and -2.14 billion EUR in 2016;

V. The most unfavourable and alarming balance of trade is that of Romania, which increased its deficit by more than 4 times during the selected period, reaching a record in 2021 (-24.44 billion EUR) and showing a chronical evolution which might negatively impact the economy (Figure 1).

![Figure 1. Balance of trade of non-EURO CEE countries (bil. EUR)](image)

*Source: authors calculations based on Eurostat, [DS-018995], last update 15.09.2021, extracted on 20.09.2022.*

Table 5 illustrates the most important sectors grouped according to SITC for the CEE-5 countries trade: the machinery and transport equipment, which hold an average share ranged between 21.9% (Bulgaria) and 56.8% (Czechia) in case of exports and 27.1% (Bulgaria) and 48% (Hungary) in case of imports; the manufactured goods classified chiefly by material with shares between 10.6% (Hungary) and 22.2% (Bulgaria) in case of exports and 14% (Hungary) and 19.7% (Romania) in case of imports; miscellaneous manufactured articles, with shares between 9.1% (Hungary) and 16.6% (Poland) in case of exports and 9% (Hungary) and 12.8% (Poland) in case of exports; chemicals and related products, which ranged between 4.8% (Romania) and 12.1% (Hungary) in case of exports and between 11.5% (Czechia) and 14.4% (Bulgaria). Other sectors own shares less than 10% with only a few exceptions, food and live animals (Bulgaria and Poland in case of their exports) and mineral fuels, lubricants and related materials (Bulgaria in case of its imports). The authors findings are in line with previous researches (Burciu et al., 2020), showing the propensity of all CEE-5 countries to engage in medium-tech manufactures trade.
Table 5
Average share of main categories in total exports and imports during the period 2014-2021 (p.p.)

<table>
<thead>
<tr>
<th>Country</th>
<th>Bulgaria</th>
<th>Czechia</th>
<th>Hungary</th>
<th>Poland</th>
<th>Romania</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food and live animals</td>
<td>11.1%</td>
<td>7.8%</td>
<td>3.4%</td>
<td>6.8%</td>
<td>10.9%</td>
</tr>
<tr>
<td>Beverages and tobacco</td>
<td>1.4%</td>
<td>1.6%</td>
<td>0.8%</td>
<td>0.7%</td>
<td>0.5%</td>
</tr>
<tr>
<td>Crude materials, inedible, except fuels</td>
<td>6.9%</td>
<td>8.7%</td>
<td>2.2%</td>
<td>2.1%</td>
<td>1.9%</td>
</tr>
<tr>
<td>Mineral fuels, lubricants and related materials</td>
<td>8.6%</td>
<td>13.5%</td>
<td>2.1%</td>
<td>5.8%</td>
<td>3.1%</td>
</tr>
<tr>
<td>Animal and vegetable oils, fats and waxes</td>
<td>1.2%</td>
<td>0.4%</td>
<td>0.2%</td>
<td>0.2%</td>
<td>0.5%</td>
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<tr>
<td>Chemicals and related products</td>
<td>10.4%</td>
<td>14.4%</td>
<td>6.5%</td>
<td>11.5%</td>
<td>12.1%</td>
</tr>
<tr>
<td>Manufactured goods classified chiefly by material</td>
<td>22.2%</td>
<td>17.1%</td>
<td>15.1%</td>
<td>16.4%</td>
<td>10.6%</td>
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<tr>
<td>Machinery and transport equipment</td>
<td>21.9%</td>
<td>27.1%</td>
<td>56.8%</td>
<td>46.6%</td>
<td>55%</td>
</tr>
<tr>
<td>Miscellaneous manufactured articles</td>
<td>13.5%</td>
<td>8%</td>
<td>12.5%</td>
<td>11.6%</td>
<td>9.1%</td>
</tr>
<tr>
<td>Commodities and transactions not classified elsewhere in the SITC</td>
<td>2.6%</td>
<td>1.4%</td>
<td>0.3%</td>
<td>0.3%</td>
<td>0.4%</td>
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</table>


As previously stated and as table no. 6 shows, Czechia, Hungary and Poland with mature and functional market economies and a higher GDP per capita register a positive balance of trade, while Bulgaria and Romania - a negative one, with the mention that Romania averages -14.18 billion EUR, which is already a huge drawback for the current account and domestic capital, especially in crisis periods when all foreign investors transfer the amounts in order to help the GVC leaders, usually located in developed countries.

We identified the most important products contributing to the balance of trade of every analysed country by annual average:
I. Bulgaria records a surplus for miscellaneous manufactured articles (1,196.31 million EUR), manufactured goods classified chiefly by material (825.12 million EUR), food and live animals (671.92 million EUR)
and a deficit in the trade of machinery and transport equipment (-2,314.46 million EUR), mineral fuels, lubricants and related materials (-1,784.25 EUR), chemicals and related products (-1,533.25 million EUR).

II. Czechia records a very large surplus for machinery and transport equipment (23,933.96 million EUR) and miscellaneous manufactured articles (3,231.73 million EUR) and high deficits for chemicals and related products (-6,132.09 million EUR), mineral fuels, lubricants and related materials (-4,950.5 million EUR), food and live animals (-1,411.94 million EUR).

III. Hungary records a high surplus for machinery and transport equipment (9,027.48 million EUR) and food and live animals (2,272.08 million EUR) and deficits in case of mineral fuels, lubricants and related materials (-5,015.39 million EUR) and manufactured goods classified chiefly by material (-2,906.14 million EUR).

IV. Poland records a high surplus for miscellaneous manufactured articles (8,443.03 million EUR), food and live animals (7,895.65 million EUR) and machinery and transport equipment (5,320.34 million EUR), and very large deficits for chemicals and related products (-10,509.25 million EUR) and mineral fuels, lubricants and related materials (-9,878.55 million EUR).

V. Romania records a high surplus only in case of miscellaneous manufactured articles (1,150.05 million EUR), while high deficits are recorded for chemicals and related products (-7,545.75 million EUR), manufactured goods classified chiefly by material (-4,694.77 million EUR), mineral fuels, lubricants and related materials (-2,764.09 million EUR) and food and live animals (-1,679.61 million EUR).

### Table 6

<table>
<thead>
<tr>
<th>Product / Country</th>
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<th>Hungary</th>
<th>Poland</th>
<th>Romania</th>
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</thead>
<tbody>
<tr>
<td>Food and live animals</td>
<td>671.92</td>
<td>-1,411.94</td>
<td>2,272.08</td>
<td>7,895.65</td>
<td>-1,679.61</td>
</tr>
<tr>
<td>Beverages and tobacco</td>
<td>-98.74</td>
<td>257.64</td>
<td>-51.33</td>
<td>2,303.04</td>
<td>411.06</td>
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<td>Crude materials, inedible, except fuels</td>
<td>-795.02</td>
<td>536.56</td>
<td>-49.01</td>
<td>-1,590.17</td>
<td>361.32</td>
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<td>Mineral fuels, lubricants and related materials</td>
<td>-1,784.25</td>
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<td>-5,015.39</td>
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<td>Animal and vegetable oils, fats and waxes</td>
<td>219.59</td>
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<td>Chemicals and related products</td>
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<td>-10,509.25</td>
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<td>Manufactured goods classified chiefly by material</td>
<td>825.12</td>
<td>440.19</td>
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<td>2,820.16</td>
<td>-4,694.77</td>
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<td>Machinery and transport equipment</td>
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<td>9,027.48</td>
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<td>Miscellaneous manufactured articles</td>
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<td>-3,332.37</td>
<td>15,992.80</td>
<td>4,009.74</td>
<td>1,342.40</td>
<td>-14,183.96</td>
</tr>
</tbody>
</table>


The authors have also tried to analyse the source and destination countries of all selected non-EURO CEE member states and the tables below (Tables 7-11) show similarities but also large differences inside the group, together with interesting evolution of their partners’ share or balance of trade. Thus, Germany is identified as...
the main partner by far, regarding both trade flows for all countries except Bulgaria, which imported mostly from the Russian Federation in 2014 (15.2%). However, in 2021 Bulgaria changed the main source into Germany (12.3%) as well (Table 7). As to the balance of trade, all countries except Romania record a raise in trade relations with Germany, Czechia even registering an important result of 12,662.8 million EUR. The United Kingdom share in Czechia’s and Poland’s trade has decreased significantly between 2014 and 2021, especially for imports, due to Brexit but both CEE countries managed to record an important surplus growth: 1429 million EUR in case of Czechia (increase of 38.2%) and 5284.23 million EUR in case of Poland (increase of 88.0%). Although not a member of the EU, Turkey made use of the its proximity to Bulgaria and Romania for being an important partner of both countries and also improving its balance of trade from a deficit to a surplus between 2014 and 2021. Very large deficits are recorded by Bulgaria, Hungary and Poland in their international trade with the Russian Federation; although the dependence is reduced by almost half (in terms of import shares), there remain a minimum of 2546.2 million EUR in case of Bulgaria in 2021 (Table 7), while in the same year Poland records a deficit of 8721.2 million EUR (Table 10). China’s dominance in the world trade - 13% of world’s exports in 2014 and 14.7% in 2020 (Nicita and Razo, 2021) might be the explanation for the huge raise of the surplus in 2021 compared to 2014 in relation with Czechia (10,487 million EUR, 186.8% increase), Hungary (4,843.5 million EUR, 142.44% increase), Poland (19,182.2 million EUR, 216.1% increase) and Romania (3,502.8 million EUR, 196% increase), becoming the second large supplier country for Czechia, Hungary and Poland and 4th largest supplier for Romania in 2021. Basically, the same situation applies also for Netherlands, which registered a surplus with Czechia (4457 million EUR in 2021 starting from 2986.3 million EUR in 2014) and Poland (6022.4 million EUR in 2021, starting from 2576.4 million EUR in 2014). Other important partners for the CEE-5 countries are Italy (2nd largest partner for Romania), France, Slovakia and Austria as traditional partners of Czechia and Hungary respectively and it is also worth mentioning Greece in case of Bulgaria and inevitably the trade inside the analysed group.

Table 7
Share of main partners of Bulgaria in its total export and import and the related balance of trade in 2014 and 2021 (p.p., million EUR)

<table>
<thead>
<tr>
<th></th>
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<th></th>
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</thead>
<tbody>
<tr>
<td>Germany</td>
<td>12</td>
<td>14.9</td>
<td>2,655.2</td>
<td>5,181.2</td>
<td>12.3</td>
<td>12.3</td>
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<td>14.9</td>
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<td>5,181.2</td>
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<td>12.3</td>
<td>3,213.1</td>
<td>4,800.5</td>
<td>-557.9</td>
<td>380.7</td>
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<td>2,143.6</td>
<td>5.6</td>
<td>7.7</td>
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<td>9.3</td>
<td>6.2</td>
<td>2,058.4</td>
<td>2,143.6</td>
<td>5.6</td>
<td>7.7</td>
</tr>
<tr>
<td></td>
<td>7.7</td>
<td>7.7</td>
<td>1,468.1</td>
<td>3,017.9</td>
<td>509.3</td>
<td>-874.4</td>
</tr>
<tr>
<td>Italy</td>
<td>9</td>
<td>7.6</td>
<td>1,981.4</td>
<td>2,621.6</td>
<td>7</td>
<td>6.6</td>
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<td>1,981.4</td>
<td>2,621.6</td>
<td>7</td>
<td>6.6</td>
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<tr>
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<td>6.6</td>
<td>7.6</td>
<td>1,840.8</td>
<td>2,589.9</td>
<td>140.5</td>
<td>31.7</td>
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<td>10.1</td>
<td>1,748.1</td>
<td>3,510.4</td>
<td>6.8</td>
<td>7.6</td>
</tr>
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<td></td>
<td>7.9</td>
<td>10.1</td>
<td>1,748.1</td>
<td>3,510.4</td>
<td>6.8</td>
<td>7.6</td>
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<td>7.6</td>
<td>1,784.0</td>
<td>2,957.5</td>
<td>-35.8</td>
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<td>Greece</td>
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<td>5.3</td>
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<td>2,072.2</td>
<td>144.7</td>
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<td>526.8</td>
<td>433.9</td>
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<tr>
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<td>2.4</td>
<td>1.3</td>
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<td>7.6</td>
<td>3,963.2</td>
<td>2,980.1</td>
<td>-3,436.4</td>
<td>-2,546.2</td>
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Table 8
Share of main partners of Czechia in its total export and import and the related balance of trade in 2014 and 2021 (p.p., million EUR)

<table>
<thead>
<tr>
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<td>Germany</td>
<td>32</td>
<td>32.5</td>
<td>42,176.3</td>
<td>62,263.4</td>
<td>30.1</td>
<td>27.7</td>
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<td>32</td>
<td>32.5</td>
<td>42,176.3</td>
<td>62,263.4</td>
<td>30.1</td>
<td>27.7</td>
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<td>30.1</td>
<td>27.7</td>
<td>34,952.5</td>
<td>49,600.6</td>
<td>7,223.9</td>
<td>12,662.8</td>
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134
<table>
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<th></th>
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</thead>
<tbody>
<tr>
<td>Germany</td>
<td>28.1</td>
<td>26.9</td>
<td>23,398.8</td>
<td>32,230.2</td>
<td>19,982.7</td>
<td>28,379.4</td>
</tr>
<tr>
<td>Austria</td>
<td>5.6</td>
<td>4.7</td>
<td>4,695.6</td>
<td>5,679.4</td>
<td>5,800.0</td>
<td>7,290.8</td>
</tr>
<tr>
<td>Romania</td>
<td>5.6</td>
<td>5.5</td>
<td>4,639.8</td>
<td>6,538.0</td>
<td>2,531.6</td>
<td>3,558.8</td>
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<tr>
<td>Slovakia</td>
<td>5</td>
<td>5.2</td>
<td>4,195.8</td>
<td>6,284.2</td>
<td>4,257.6</td>
<td>7,003.8</td>
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<tr>
<td>Italy</td>
<td>4.7</td>
<td>5.8</td>
<td>3,899.2</td>
<td>6,980.7</td>
<td>3,500.1</td>
<td>5,267.2</td>
</tr>
<tr>
<td>Poland</td>
<td>3.9</td>
<td>4.3</td>
<td>3,261.7</td>
<td>5,158.4</td>
<td>4,078.6</td>
<td>6,750.7</td>
</tr>
<tr>
<td>Russian Federation</td>
<td>2.5</td>
<td>1.4</td>
<td>2,069.5</td>
<td>1,702.5</td>
<td>5,404.1</td>
<td>4,284.7</td>
</tr>
<tr>
<td>China</td>
<td>1.7</td>
<td>1.4</td>
<td>1,408.2</td>
<td>1,639.4</td>
<td>4,813.1</td>
<td>9,892.8</td>
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</table>


Share of main partners of Poland in its total export and import and the related balance of trade in 2014 and 2021 (p.p., million EUR)

<table>
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<tr>
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</thead>
<tbody>
<tr>
<td>Germany</td>
<td>26.3</td>
<td>28.7</td>
<td>43,599.7</td>
<td>81,934.0</td>
<td>45,444.5</td>
<td>75,274.3</td>
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<tr>
<td>Czechia</td>
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<td>5.9</td>
<td>10,715.0</td>
<td>16,848.6</td>
<td>6,837.0</td>
<td>10,730.5</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>6.4</td>
<td>5.1</td>
<td>10,562.1</td>
<td>14,528.1</td>
<td>4,555.9</td>
<td>3,237.7</td>
</tr>
<tr>
<td>France</td>
<td>5.6</td>
<td>5.7</td>
<td>9,242.8</td>
<td>16,247.1</td>
<td>6,822.5</td>
<td>11,022.8</td>
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<td>4.6</td>
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<td>9,232.4</td>
<td>14,332.7</td>
</tr>
<tr>
<td>Russian Federation</td>
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<td>2.8</td>
<td>7,006.4</td>
<td>8,003.5</td>
<td>17,060.2</td>
<td>16,724.7</td>
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</table>

5. Conclusions

During the period 2014-2021 the CEE-5 countries have generally had a positive evolution of their international trade, both quantitative and structural, increasing their share in the total trade of the European Union and trading more sophisticated products. Trying to answer the first research question (Q1), the authors found out that there are many similarities but also big differences among the non-EU group of countries within the EU. We can enumerate for the first label the increasing share inside the EU trade, a very high dependence on the single market of the EU, a relative low share of raw materials and high share of machinery, transport equipment and manufactured goods in total trade, large deficits in trading mineral fuels and the high-tech trade of chemicals, very large volumes of trade with Germany, the increasing deficits in the balance of trade with China. Significant differences are in the results of the balance of trade of every country, where the high surplus of Czechia, the sinuous evolution of Poland and the chronical deficit of Romania stand out, which is also the case for some products (food and live animals, crude materials, inedible, except fuels, manufactured goods classified chiefly by material and machinery and transport equipment), the high dependence of Bulgaria and Hungary on the mineral fuels supplied by the Russian Federation, the deficit recorded by Romania in its trade with Germany compared to the other countries in the group.

The balance of trade could be an indicator of the country or a product competitiveness; therefore the answer to our Q2 question could be that the most profitable trade in the analysed period is performed by Czechia, Hungary and Poland in this order, Bulgaria and especially Romania needing targeted measures in order to stimulate exports for counteracting the huge increase in the imports volumes.

The most important sectors for the CEE-5 trade (Q3) are the machinery and transport equipment and manufactured goods classified chiefly by material as shares in countries trade but there are also other sectors which register important surplus or deficit in some cases: food and live animals (an annual average of 7,895.65 million EUR surplus, Poland), mineral fuels, lubricants and related materials (high deficits for all countries, peaking at -9,878.55 million EUR average, Poland), chemicals and related products (annual averages -6,132.09 million EUR for Czechia, -10,509.25 million EUR for Poland, -7,545.75 for Romania).

The main partners of the selected countries remain mostly the same at the end of the analysed period

---

Table 11

<table>
<thead>
<tr>
<th>Romania</th>
<th>Export</th>
<th>Import</th>
<th>Balance of trade</th>
</tr>
</thead>
<tbody>
<tr>
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<td>19.2</td>
<td>20.8</td>
<td>10,100.7</td>
</tr>
<tr>
<td>Italy</td>
<td>11.9</td>
<td>10.6</td>
<td>6,243.7</td>
</tr>
<tr>
<td>France</td>
<td>6.8</td>
<td>6.5</td>
<td>3,551.0</td>
</tr>
<tr>
<td>Hungary</td>
<td>5.1</td>
<td>5.7</td>
<td>2,672.1</td>
</tr>
<tr>
<td>Turkey</td>
<td>4.5</td>
<td>3.5</td>
<td>2,361.3</td>
</tr>
<tr>
<td>Poland</td>
<td>2.5</td>
<td>4</td>
<td>1,316.4</td>
</tr>
<tr>
<td>China</td>
<td>1.1</td>
<td>1.2</td>
<td>566.7</td>
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</tbody>
</table>

Izvestiya 2023  
Ion Pănescu, Dumitru Miron. The International Trade of Non-Euro Cee Countries During the Period 2014-2021. A Multiparameter Analysis

compared to 2014 and keep their places among the first ones (Q4), with several exceptions:

- Bulgaria – Romania climbs to the 2nd position in 2021 starting from the 4th in 2014 with Turkey falling to the 4th in case of exports, while in case of imports the Russian Federation and Germany change places; it is worth mentioning that before 2019 the share of Russian Federation in Bulgaria’s imports has been decreasing already from 15.2% until 9.9%.
- Czechia – United Kingdom falls from the 4th position in 2014 until 7th position in 2021 in case of exports, probably because of the Brexit, China and the Netherlands go up to the 2nd and 4th positions respectively in case of imports, confirming the above-mentioned high competitiveness of their exports.
- Hungary – Italy is ranked on the 2nd position in 2021 starting from the 5th, changing positions with Austria, while in case of exports China goes to the 2nd place and the Russian Federation falls to the 9th position; just like in the case of Bulgaria, the decrease in demand has been already happening before the global demand of mineral fall along with the pandemic crisis.
- Poland – France and United Kingdom change places and about 0.8 p.p. of shares in total exports between 2014 and 2021 in case of exports, while China and the Netherlands go up one position and the Russian Federation falls to the 4th position in case of imports.
- Romania – Poland comes from the 11th place in 2014 to the 5th in 2021 and Turkey goes to the 7th place in 2021 from the 5th in 2014 in case of exports, while in case of imports China climbs to the 4th position in 2021 starting from the 6th in 2014.

The current research may be extended further with identifying and following the evolution of the MNCs which extended their lucrative activities on the CEE-5 countries territories in the recent years, analysing the evolution of trade with services or more in-depth analysis of the goods subcategories (more SITC digits) weight in the total trade.

References


CRUDE OIL PRICE FLUCTUATIONS AND MANUFACTURING SECTOR PERFORMANCE IN NIGERIA (1981 - 2019)

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Email: goluwo@gmail.com

JEL: O44, O55

Abstract

Nigeria’s high import of manufactured products and the weak export of processed goods are indications of the palpable weakness of the sector. The paper examines the response of manufacturing performances to crude oil price fluctuations in Nigeria and considered annual data in Nigeria from 1981 to 2019. The paper evaluates fluctuation in crude oil price in relation to manufacturing sector performance in Nigeria. Hence, the need to find solution to the crude oil price fluctuations becomes inevitable. The data set was estimated using dynamic ordinary least square (DOLS) as the series is a mixture of me (0) and me (1). However, ex post facto research design was employed to realize the first objective. Phillips Perron and Bounds test were carried out to evaluate the F-statistic against the critical values. The results show that physical investment had negative value (-0.0466) and was significant at (1\%) on manufacturing performance; also oil price fluctuations had negative value (-0.1399). Therefore, policy makers need to engage the Governments to create enabling environment and regulate the distortions in the crude oil price for manufacturing sector.

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INTRODUCTION

The economic activities of the manufacturing sector of Nigeria are greatly influenced by the international crude oil price fluctuations particularly, in the area of production of goods and services. However, when increase in the crude oil fluctuations occurs at the international market, there is always a concomitant effect on the domestic selling price, which undermines the effectiveness and efficiency of production of the sector. Hence, the spillover effect causes adverse outcome culminating in inflation, unemployment, unfavorable balance of payment and other macro-economic problems (Aleksandrova, 2016).

The high rate of import of goods and services becomes an option since the international price mechanism cannot be endogenously determined leading to having export in excess over import of locally produced goods. Nigerian Government needs to resuscitate the refineries that have been in the oblivion, encourage local industries through various means i.e loan facilities, tax reduction, subsidy etc. If the aforementioned are adequately addressed, the sector will contribute in no measure to the Gross Domestic Product and generate high rate of employment opportunities in the country (Oyetunji, 2013).

Manufacturing that generally been described as a critical tool for accelerating economic growth and development. It provides medium to produce goods and services, facilitates good jobs and also earn the economics agents' lucrative rewards (Hamilton, 2013). The manufacturing sector is viewed as the production of merchandise for sale or use through the application of tools, machine, labour chemical and biological formulation and it involves handicraft of human activities and high tech by transforming of unfinished goods to finished goods (Omojolaibi, 2013). The Nigerian economy suffered series of problems ranging from excessive dependence on oil, revenue, socioeconomic infrastructure decay, capacity underutilization in the industrial sector, poor management strategies and institutional framework (Bolaji and Bolaji, 2010).

Despite the numerous vast crude oil wealth of the country, the word bank development indicators indicated that greater number of Nigerians suffer from abject poverty living below $2 per day. In the same vein, Nigeria was ranked 156 out of 179 in human dependent indexes, representing a significant reduction in human development ranking of 151 of the countries of the world in 2004. As a result, the nation has been placed among the 47th poorest countries in the world.

The economic structure of Nigeria reflects generally that an under-developed nation trait, where more than 50% of the total GDP is being contributed by a single primary section of the economy. Statistics have shown that capacity utilization of the manufacturing sector has been overtime slow and very low compared to other strong economies of the world (Ibrahim, 2018). For example, the capacity utilization of the Nigeria’s manufacturing sector in 1990 was 40% and stood at 53.9% in 2008. By 2009, the manufacturing sector capacity utilization was 55.88% and later increased to 60.50% in 2015.

In spite of numerous studies on crude oil price fluctuations in developing countries like Nigeria, no study has addressed the link that actually exist between crude oil price fluctuations and manufacturing sector in Nigeria. Hence, the need to examine the relationship between crude oil price fluctuations and manufacturing sector in Nigeria is the central focus of this study.

In the light of the above, this paper has considered the need to revitalize the domestic manufacturing sector to withstand the crude oil price fluctuations emanating from the international market. This would create awareness for the government, policy makers and stakeholders in the sector to be proactive in dealing with crude oil price fluctuations in the realm of local production. In addition, a vacuum exists in empirical link on how to deal or absorb the shock of crude oil price fluctuations in relation to manufacturing sector in Nigeria. This study has provided vital information to employers of labour, policy makers, governments and stakeholders in the manufacturing sector. This paper consists of several sections accordingly; section 1 deals with the introductory part, section 2 focuses on literature review, whereas section 3 presents the models specifications and econometric techniques. The findings of the empirical analysis are presented in section 4 and section 5 presents the conclusion and recommendations.
Objectives of the Study

The broad objective of this study is to investigate the response of manufacturing output to crude oil price fluctuations in Nigeria. The specific objectives are to:

i. Appraise the manufacturing output and crude oil prices in Nigeria

ii. Assess the direction of causality between crude oil price fluctuations and manufacturing output in Nigeria.

Relevance of the Study

The study is useful to the policy makers, employers of labour and the Nigerian populace. Policy makers would find this study very relevant by having a clear understanding of implications of crude oil price fluctuations. It shall also provide them with a framework within which they can initiate policies to stimulate the economy in the face of oil price boom and burst cycle.

Statement of the Research Problem

Nigeria’s manufacturing sector has largely been left out of the growth process, given its low contribution to GDP and employment, over the years, Nigeria’s high import of manufactured products and weak export of processed goods are evidences of the obvious weakness of the sector, meanwhile the decline in the manufacturing performance is also reflected in the low share of non-crude oil exports to total exports earnings as well as the high share of manufactured goods in total imports.

The dependence of the Nigerian economy on oil proceeds as the major source of revenue is capable of raising suspicion about the impact of crude oil price fluctuations on economic activities in the country. It is the tendency of macroeconomic variables such GDP, inflation, exchange rate, interest rate etcetera to be unstable and weak in terms of withstanding change. In the light of this, many studies have investigated the impact of crude oil price fluctuations on macroeconomic variables in Nigeria. The consensus finding is that while crude oil price fluctuations have direct significant relationship with many macroeconomic variables, it does not significantly affect output growth (Adeniyi, 2011; Omojolaibi, 2013; Wilson, David, Inyiama, Taiwo, Abayomi, Damilare, Beatrice, 2014).

But, majority of the previous studies focused on the impact of crude oil price level fluctuations on macroeconomic variables. They failed to investigate the impact of crude oil price fluctuations on the manufacturing sector of the economy.

![Figure 2.1: Transmission channel of positive crude oil price fluctuations](Adapted from Tang et al. (2010))
Literature Review

Ogundipe and Ogundipe (2014) estimated the impact and transmission channels of crude oil price fluctuations on investment and how it affected the Nigerian economy. They have found that gross capital formation has significantly explained oil prices and this affirms the fact that GCF Granger causes crude oil price, crude oil price fluctuations not to quite explain investment which can be confirmed from the impulse response functions, variance decompositions and Granger Causality tests. Also, the results show that RGDP does not significantly respond to crude oil price fluctuations but to other variables such as exchange rate, interest rate savings which are influenced by crude oil price fluctuations.

Bayar & Kilic (2016) investigate the impact of oil price volatility on the volatility of three major macroeconomic variables in Nigeria. The findings reveal that all the macroeconomic variables considered (real gross domestic product, interest rate, exchange rate and oil price) are highly volatile; the asymmetric models (TGARCH and EGARCH) outperform the symmetric models (GARCH (1,1) and GARCH – M); and oil price is a major source of macroeconomic volatility in Nigeria which by implication, the Nigerian economy is vulnerable to both internal changes (interest rate volatility, real GDP volatility) and external changes (exchange rate volatility and oil price volatility).

Husain, Tazhibayeva & Ter-Martirosyan, (2017) investigated the impact of oil price fluctuation and oil revenue on well-being in Nigeria. An increase in oil price fluctuation (fall in oil price) has had a strong implication on reducing the wellbeing of people in Nigeria through its effect on oil revenue. The implication is that a rise in oil prices could lead to a rise in oil revenue and other sectors of the economy, especially for oil exporting countries like Nigeria.

In a study conducted by Gummi, Hassan and AsiyaMu’azu (2018), they examined the impact of petroleum price on manufacturing performance in Nigeria. Gummi, Hassan and AsiyaMu’azu (2018) found out co integration (long run equilibrium relationship) among the variables through the bound test. Oil price has positive and statistically significant impact on manufacturing performance. However, interest rate and exchange rate have negative and statistically significant influence on manufacturing performance in Nigeria.

Okoye, Mbakwe and Igbo (2018) examined the interrelationship between the construction sector, oil prices and the actual gross domestic product (GDP) in Nigeria. Okoye, Mbakwe and Igbo (2018) found that there exists linear relationship between oil prices and the total GDP output to which these linear relationships only existed for a short time. However, these relationships do not result in any direct causal influence on each other, except for the unidirectional Granger causal relationship that flows from the total GDP output to the construction sector output, which implies that economic activities of other major non-oil sectors stimulate the construction activities in Nigeria. This shows that the oil price does not directly influence the aggregate economy; rather, the other sectors’ activities stimulate the construction sector in Nigeria.

Ibrahim (2018) examined the impact of petroleum price on manufacturing in Nigeria. The DOLS instrumental estimation technique was used to estimate the impact of oil price on aggregate and sectorial outputs. The results obtained reveal that oil price impacted positively on aggregate output but negatively on agricultural, manufacturing and service sector suggesting that at the aggregate level. Oil price tends to increase the output while an increase in oil price tends to increase total output while an increase in oil price impacted negatively the outputs of productive sectors since it serves as an input factor in the production process of these sectors. This indicates that fluctuation in oil price creates uncertainty in the production capacity of the productive sectors and it also undermines the effectiveness of the government fiscal management of crude oil revenue.

Theoretical Framework

The relationship between crude oil prices and the manufacturing sector can be complex, as oil prices can affect many aspects of the economy. Here are some relevant theories that attempt to explain this relationship:

1. Cost-push theory: This theory suggests that increases in crude oil prices can lead to higher production costs for manufacturers, which in turn can lead to higher prices for consumers. This can result in reduced
demand for goods and services, which can slow down economic growth.

2. Resource curse theory: This theory suggests that countries that are rich in natural resources, such as oil, may experience slower economic growth due to the concentration of wealth and power in the hands of a few individuals or companies. This can lead to a lack of diversification in the economy, as well as corruption and political instability.

3. Dutch disease theory: This theory suggests that an increase in the export of natural resources, such as crude oil, can lead to a decline in the manufacturing sector. This is because the increase in export revenue can cause the exchange rate to appreciate, which can make exports from other sectors less competitive in international markets.

4. Demand-pull theory: This theory suggests that the demand for crude oil and manufactured goods are interlinked, and increases in demand for one can lead to increases in demand for the other. For example, if the demand for automobiles increases, the demand for crude oil may also increase as more fuel is required for transportation.

5. Input-output theory: This theory suggests that the production of manufactured goods is dependent on the availability and cost of inputs, such as crude oil. Changes in the price of crude oil can affect the cost of production, which can then affect the prices of manufactured goods and the overall level of economic activity.

These are just a few of the theories that attempt to explain the relationship between crude oil prices and the manufacturing sector. The actual relationship between these two factors may be influenced by many other factors, such as technological advancements, government policies, and global economic conditions.

Relevant literature that have studied the nexus between oil price and output employed the endogenous growth model proposed by Romer (1994) (Hsing, 2007; Malik, 2008 & Sibanda, 2018). They have contended that endogenous model suited to examine this link because it is a model that considered factors which are determining outside the model to determine output. Therefore, to establish the theoretical framework the endogenous model by Romer (1994) is presented in equation 3.1.

\[ Y = f(R, K, H) \] (3.1)

In equation 3.1, Y is the output, R is the research that can lead to further innovation to move manufacturing output, K is the physical capital employed in producing output and H is the human skill employed in production. This model was modified by Hsing (2007) which was further adapted by Malik (2008). The model in Hsing (2007) and Malik (2008) are similar to each other except that Hsing was based on Germany while Malik work was based on Pakistan. They introduced oil price and exchange rate into the model and thus examined them on output as expressed in equation 3.2.

\[ Y = f(Y, I, G, R, S, E, O_P, D, F) \] (3.2)

In equation 3.2, Y is the real GDP depending on I (interest rate), G (real government spending), R (real government revenue), S (real stock price), E (real effective exchange rate), \( O_P \) (Real crude oil price per barrel), D (real total debt) and F (Real foreign exchange reserves). Besides, Sibanda, (2018) employed the model in Malik (2008) in South Africa to study oil price on sectorial output. They further modified equation 3.2 to arrive at equation 3.3.

\[ Y = f(O_P, SR, ME) \] (3.3)

In equation 3.3, Y is the sectoral output, \( O_P \) is the crude oil price, SR denotes sector specific variables (such as intermediate input prices (IIP), real gross fixed capital formation (RS), remuneration (REM), unit labor cost (ULC), labor productivity (LP), ME represents the macroeconomic variables (which include expenditure on health (EXH), exchange rate (EI) and interest rate (IR)). Thus, this study found the above model relevant to examine crude oil price fluctuations on manufacturing output in Nigeria. Further, equation 3.3 is amended to arrive at equation 3.4 which was tested in this study.

\[ Y = f(GCF, EDU, POPR, OILP, OILR, RER, IMPMAN) \] (3.4)

In equation 3, Y is manufacturing output, GCF (Physical Investment measured by gross capita formation as a % of GDP), EDU (Human Investment measured by the % of education expenditure to the total
expenditure), POPR (the growth rate of population), OILP (crude oil price), OILR (revenue for oil as a natural resource), RER (Exchange rate) and IMPMAN (imported manufactured goods).

**Research Questions**

The following research questions will be investigated to address issues identify above
i. How does a crude oil price fluctuation affect manufacturing output in Nigeria?
ii. How does the direction of causality between crude oil price fluctuations and manufacturing output look like in Nigeria?

**Research Hypothesis**

H₀₁: There is no significant relationship between crude oil price fluctuations and manufacturing output in Nigeria

H₀₂: There is no significant relationship between direction of causality of crude oil price fluctuations and manufacturing output like in Nigeria

**METHODOLOGY AND DATA**

**Model Specification**

This work is anchored on endogenous growth model as modified by Hsing (2007) which was further adapted by Malik (2008). They both introduced oil price and exchange rate into the model and thus examined them on output as expressed in equation 3.2.

In testing the crude oil price fluctuations on manufacturing output in Nigeria, this study transformed equation 3.4 to a linear form as expressed in equation 3.5.

\[
\ln MANO_t = \beta_0 + \beta_1 GCF_t + \beta_2 EDU_t + \beta_3 POPR_t + \beta_4 dlnOILP_t + \beta_5 lnOILPR_t + \beta_6 lnRER_t + \beta_7 IMPMAN_t + u_t 
\]  

(3.5)

β₀ is constant while β₁, β₂, β₃, β₄, β₅, β₆ and β₇ are coefficients of the various independent variables which shows the degree to which an independent variable affect manufacturing output when all other independent variables are held constant. \( u_t \) is the error term.

\( lnMANO_t \) = Logged of value of manufacturing output

\( GCF_t \) = Physical Investment measured by gross capita formation as a % of GDP

\( EDU_t \) = Human Investment measured by the % of education expenditure to the total expenditure

\( POPR_t \) = Population of labour measured by the growth rate of population

\( dlnOILP_t \) = Crude oil price fluctuations

\( lnOILPR_t \) = Natural resources measured by the logged of Oil revenue

\( lnRER_t \) = Exchange rate measured by logged of real effective exchange rate

\( IMPMAN_t \) = Imported manufactured goods proxy by miscellaneous manufacturing goods as a % to total import

\[
\Delta \ln MANO_t = \alpha_0 + \beta_1 GCF_{t-1} + \beta_2 EDU_{t-1} + \beta_3 POPR_{t-1} + \beta_4 dlnOILP_{t-1} + \beta_5 lnOILR_{t-1} + \\
\beta_6 hlnRER_{t-1} + \beta_7 IMPMAN_{t-1} + \sum_{i=1}^{p} \gamma_1 \Delta \ln MANO_{t-1} + \sum_{i=0}^{p} \gamma_2 \Delta GCF_{t-1} + \sum_{i=0}^{p} \gamma_3 \Delta EDU_{t-1} + \\
\sum_{i=1}^{p} \gamma_4 \Delta dlnOILP_{t-1} + \sum_{i=0}^{p} \gamma_5 \Delta lnOILR_{t-1} + \sum_{i=0}^{p} \gamma_6 \Delta lnRER_{t-1} + \sum_{i=0}^{p} \gamma_7 \Delta IMPMAN_{t-1} + \\
\mu_t 
\]  

3.6.
Following Habibullah and Baharom (2009), this used the bound test to establish joint movement of variables in the manufacturing output and further used Dynamics Ordinary Least Square (DOLS) in estimating the coefficients (parameters).

A simple approach to constructing an asymptotically efficient estimator that eliminates the feedback in the cointegrating system has been advocated by Adebiyi & Olowookere, (2013) and Stock and Watson (1993). Termed Dynamic OLS (DOLS), the method involves augmenting the cointegrating regression with lags and leads of $\Delta X_t$ so that the resulting cointegrating equation error term is orthogonal to the entire history of the stochastic regressor innovations:

Data

This study employed annual data from 1981 to 2019 in Nigeria. These data are secondary data in nature and are based on the data used in endogenous studies on crude oil price fluctuations and manufacturing performance. These data sourced from reliable organizations like Central Bank of Nigeria of various years to 2019 annual report and statistical bulletin, World Bank report 2019 and National Bureau of Statistics 2019.

Table 3.1
The measurement of variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>Meaning of variables</th>
<th>Sources of variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>$lnMANO_t$</td>
<td>Manufacturing output measured by Logged of value of manufacturing output</td>
<td>Central Bank of Nigeria Statistical Bulletin 2019</td>
</tr>
<tr>
<td>$GCF_t$</td>
<td>Physical Investment measured by gross capita formation as a % of GDP</td>
<td>World Development Indicator, 2021</td>
</tr>
<tr>
<td>$EDU_t$</td>
<td>Human Investment measured by the % of education expenditure to the total expenditure</td>
<td>Central Bank of Nigeria Statistical Annual reports of various years</td>
</tr>
<tr>
<td>$POPR_t$</td>
<td>Population of labour measured by the growth rate of population</td>
<td>World Development Indicator, 2021</td>
</tr>
<tr>
<td>$lnOILPR_t$</td>
<td>Natural resources measured by the logged of Oil revenue</td>
<td>Central Bank of Nigeria Statistical Bulletin 2019</td>
</tr>
<tr>
<td>$lnRER_t$</td>
<td>Exchange rate measured by logged of Real effective exchange rate index (2010 =100)</td>
<td>World Development Indicator, 2021</td>
</tr>
<tr>
<td>$IMPMAN_t$</td>
<td>Imported manufactured goods proxy by miscellaneous manufacturing goods as a % to total import</td>
<td>Central Bank of Nigeria Statistical Bulletin 2019</td>
</tr>
</tbody>
</table>

Source: Authors Computation 2019

RESULTS AND FINDINGS

Pre-estimation Tests

Table 4.1
Descriptive Statistics

<table>
<thead>
<tr>
<th></th>
<th>LMANO</th>
<th>GCF</th>
<th>EDU</th>
<th>POPR</th>
<th>DLOILP</th>
<th>LOILR</th>
<th>LRER</th>
<th>IMPMAN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>7.774178</td>
<td>34.99076</td>
<td>5.568199</td>
<td>2.578367</td>
<td>0.016662</td>
<td>6.326412</td>
<td>4.760794</td>
<td>3.499551</td>
</tr>
<tr>
<td>Median</td>
<td>7.489514</td>
<td>32.51772</td>
<td>5.766155</td>
<td>2.582499</td>
<td>0.004318</td>
<td>7.244002</td>
<td>4.607766</td>
<td>3.871215</td>
</tr>
<tr>
<td>Maximum</td>
<td>8.807505</td>
<td>85.93390</td>
<td>9.207707</td>
<td>2.680914</td>
<td>0.459049</td>
<td>9.091441</td>
<td>6.285566</td>
<td>6.427742</td>
</tr>
</tbody>
</table>
In terms of descriptive statistics, the log of value of manufacturing output has a mean of 7.774, standard deviation of 0.57 and is normally distributed with a minimum of 6.52 and maximum of 8.80, the physical investment measured by gross capita formation as a % of GDP as a mean of 34.99, standard deviation of 17.17 and is normally distributed with minimum of 14.90 with maximum of 85.93, human investment measured by the % of education expenditure to the total expenditure has a mean of 5.56 and standard deviation of 2.22 and is normally distributed.

**Table 4.2**

<table>
<thead>
<tr>
<th>Correlation Matrix</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>LMANO</th>
<th>GCF</th>
<th>EDU</th>
<th>POPR</th>
<th>DLOILP</th>
<th>LOILR</th>
<th>LRER</th>
<th>IMPMAN</th>
</tr>
</thead>
<tbody>
<tr>
<td>LMANO</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GCF</td>
<td>-0.7646</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EDU</td>
<td>0.0704</td>
<td>-0.0803</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POPR</td>
<td>0.6559</td>
<td>-0.4306</td>
<td>0.3071</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DLOILP</td>
<td>-0.0209</td>
<td>-0.1431</td>
<td>0.1110</td>
<td>-0.0412</td>
<td>1.0000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LOILR</td>
<td>0.7504</td>
<td>-0.9207</td>
<td>0.1670</td>
<td>0.3510</td>
<td>0.2662</td>
<td>1.0000</td>
<td></td>
</tr>
<tr>
<td>LRER</td>
<td>-0.2309</td>
<td>0.4287</td>
<td>0.1859</td>
<td>-0.1162</td>
<td>-0.3285</td>
<td>-0.4656</td>
<td>1.0000</td>
</tr>
<tr>
<td>IMPMAN</td>
<td>-0.7133</td>
<td>0.5200</td>
<td>0.1933</td>
<td>-0.2961</td>
<td>0.1134</td>
<td>-0.4176</td>
<td>0.0573</td>
</tr>
</tbody>
</table>

*Source: Author’s Computation 2019*

Table 4.2 presents the result from the correlation matrix among the data series. It can be deduced from Table 4.2 that there was no evidence of multi-collinearity among the variables used in the model. This is because there were no strongly correlated variables in the model.

**Table 4.3**

Results of the Phillips-Perron (PP) Test

<table>
<thead>
<tr>
<th>Variables</th>
<th>Level Constant And Trend</th>
<th>1ST Difference Constant And Trend</th>
<th>Order of Integration</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Statistic value</th>
<th>Critical Value 5%</th>
<th>Statistic value</th>
<th>Critical Value 5%</th>
<th>of</th>
</tr>
</thead>
<tbody>
<tr>
<td>LMANO</td>
<td>-1.931762</td>
<td>0.6185</td>
<td>-5.715422</td>
<td>0.0002</td>
</tr>
<tr>
<td>GCF</td>
<td>-2.636312</td>
<td>0.2674</td>
<td>-5.212457</td>
<td>0.0008</td>
</tr>
<tr>
<td>EDU</td>
<td>-3.422271</td>
<td>0.0634</td>
<td>-12.83792</td>
<td>0.0000</td>
</tr>
<tr>
<td>POPR</td>
<td>-2.886656</td>
<td>0.1779</td>
<td>-4.076407</td>
<td>0.0145</td>
</tr>
</tbody>
</table>
From Table 4.3, the variables are of different order of integration. They are combination of I (0) and I (1) variables. The result justified the adoption of ARDL technique of analysis.

### 4.2.1 Autoregressive Distributed Lag (ARDL)

In this section, the data presented were transformed into testable forms. This is to mitigate the problem associated with heteroscedasticity, and also conform to the assumption of linearity which posits that all data must be in the same state Abdullahi, Aliero, & Abdullahi (2013).

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GCF</td>
<td>-0.046699</td>
<td>0.002610</td>
<td>-17.89286</td>
<td>0.0000</td>
</tr>
<tr>
<td>EDU</td>
<td>-0.004069</td>
<td>0.006757</td>
<td>-0.602213</td>
<td>0.5691</td>
</tr>
<tr>
<td>POPR</td>
<td>3.458783</td>
<td>0.134526</td>
<td>25.71083</td>
<td>0.0000</td>
</tr>
<tr>
<td>DLOILP</td>
<td>-0.647689</td>
<td>0.112280</td>
<td>-5.768502</td>
<td>0.0012</td>
</tr>
<tr>
<td>LOILR</td>
<td>-0.139967</td>
<td>0.016220</td>
<td>-8.629307</td>
<td>0.0001</td>
</tr>
<tr>
<td>LRER</td>
<td>-0.062035</td>
<td>0.013548</td>
<td>-4.578744</td>
<td>0.0038</td>
</tr>
<tr>
<td>IMPMAN</td>
<td>-0.171875</td>
<td>0.010262</td>
<td>-16.74855</td>
<td>0.0000</td>
</tr>
<tr>
<td>C</td>
<td>2.142934</td>
<td>0.443335</td>
<td>4.833673</td>
<td>0.0029</td>
</tr>
</tbody>
</table>

This table (4.4) shows that GCF (Physical Investment), POPR (the growth rate of population), OILP (crude oil price), OILR (revenue for oil as a natural resource), RER (Exchange rate) and IMPMAN (imported manufactured goods) are all significant at 5%.

### Fitness of the Model

<table>
<thead>
<tr>
<th></th>
<th>R-squared</th>
<th>Mean dependent var</th>
<th>Adjusted R-squared</th>
<th>S.D. dependent var</th>
<th>S.E. of regression</th>
<th>Sum squared resid</th>
<th>Long-run variance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.999497</td>
<td></td>
<td>0.997149</td>
<td>0.563582</td>
<td>0.030091</td>
<td>0.005433</td>
<td>0.000206</td>
</tr>
</tbody>
</table>

The result of Table 4.4 shows that -0.046 is the partial regression coefficient of physical investment. This means that 1% increase in physical investment would negatively reduce manufacturing output by 0.046%.
Result of the Bounds Test

Table 4.5

<table>
<thead>
<tr>
<th>Test statistic</th>
<th>Bounds</th>
<th>Level of Significance</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>F-statistic</td>
<td>13.08490</td>
<td>Critical value</td>
<td>10%</td>
</tr>
<tr>
<td>Value</td>
<td>I(0)</td>
<td>1.92</td>
<td>2.17</td>
</tr>
<tr>
<td>K</td>
<td>7</td>
<td>I(1)</td>
<td>3.89</td>
</tr>
</tbody>
</table>

Source: Author’s Computation 2019

The construction of the co-integration bounds test entails the evaluation of F-statistics against the critical values. The result is presented in Table 4.5.

In this case, the results in Table 4.5 revealed that the test is significant at 5% level. This warrants the rejection of the null hypothesis of no co-integration. Similarly, the results also confirm the presence of a long-run relationship between the regressors and regressant, which suggests the co-integration exists among the variables with an F statistic of 13.08, which exceeds the upper critical bound value.

Causality Test

The result of Pairwise Granger Causality test is presented in table 4.6 below

Table 4.6

<table>
<thead>
<tr>
<th>Null Hypothesis: K</th>
<th>Obs</th>
<th>F-Statistic</th>
<th>Prob.</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>GCF does not Granger Cause LMANO</td>
<td>38</td>
<td>8.95133</td>
<td>0.0051</td>
<td>Uni-directional</td>
</tr>
<tr>
<td>LMANO does not Granger Cause GCF</td>
<td></td>
<td>0.00601</td>
<td>0.9387</td>
<td></td>
</tr>
<tr>
<td>EDU does not Granger Cause LMANO</td>
<td>38</td>
<td>0.41737</td>
<td>0.5225</td>
<td>No causality</td>
</tr>
<tr>
<td>LMANO does not Granger Cause EDU</td>
<td></td>
<td>0.01403</td>
<td>0.9064</td>
<td></td>
</tr>
<tr>
<td>POPR does not Granger Cause LMANO</td>
<td>38</td>
<td>2.27966</td>
<td>0.1401</td>
<td>No Causality</td>
</tr>
<tr>
<td>LMANO does not Granger Cause POPR</td>
<td></td>
<td>0.27598</td>
<td>0.6027</td>
<td></td>
</tr>
<tr>
<td>DLOILP does not Granger Cause LMANO</td>
<td>37</td>
<td>2.69203</td>
<td>0.1101</td>
<td>No Causality</td>
</tr>
<tr>
<td>LMANO does not Granger Cause DLOILP</td>
<td></td>
<td>0.15517</td>
<td>0.6961</td>
<td></td>
</tr>
<tr>
<td>LOILR does not Granger Cause LMANO</td>
<td>38</td>
<td>5.1468</td>
<td>0.0296</td>
<td>No Causality</td>
</tr>
<tr>
<td>LMANO does not Granger Cause LOILR</td>
<td></td>
<td>1.52301</td>
<td>0.2254</td>
<td></td>
</tr>
<tr>
<td>LRER does not Granger Cause LMANO</td>
<td>38</td>
<td>1.06703</td>
<td>0.3087</td>
<td>No Causality</td>
</tr>
<tr>
<td>LMANO does not Granger Cause LRER</td>
<td></td>
<td>0.13914</td>
<td>0.7114</td>
<td></td>
</tr>
<tr>
<td>IMPMAN does not Granger Cause LMANO</td>
<td>38</td>
<td>0.01382</td>
<td>0.9071</td>
<td>Uni-directional</td>
</tr>
<tr>
<td>LMANO does not Granger Cause IMPMAN</td>
<td></td>
<td>7.32404</td>
<td>0.0104</td>
<td></td>
</tr>
<tr>
<td>EDU does not Granger Cause GCF</td>
<td>38</td>
<td>0.43958</td>
<td>0.5117</td>
<td>No Causality</td>
</tr>
<tr>
<td>GCF does not Granger Cause EDU</td>
<td></td>
<td>0.16449</td>
<td>0.6875</td>
<td></td>
</tr>
<tr>
<td>POPR does not Granger Cause GCF</td>
<td>38</td>
<td>0.02508</td>
<td>0.8751</td>
<td>Uni-directional</td>
</tr>
<tr>
<td>GCF does not Granger Cause POPR</td>
<td></td>
<td>16.3249</td>
<td>0.0003</td>
<td></td>
</tr>
<tr>
<td>Equation</td>
<td>Lag</td>
<td>p-value</td>
<td>t-stat</td>
<td>Causality</td>
</tr>
<tr>
<td>----------------------------------------------</td>
<td>-----</td>
<td>-----------</td>
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*Source: Author’s Computation 2019*
The Table 4.6 above shows that Physical investment granger caused Manufacturing output. In line with this, Mobalaji (1986) argued that there is a long time lag between physical investment and manufacturing output. He recognized there is a direct link between physical investment and manufacturing output. Therefore, it has been seen as a potential determinant for manufacturing sector performance. Imported manufactured goods also granger caused manufacturing output.

Discussion of Findings

From the study, it was found that crude oil price fluctuations affect the manufacturing output. It was found that increase in the crude oil price reduces the manufacturing output. That is, each time there is increase in the crude oil price emanating from the international oil price, it radiates to the domestic selling price since, crude oil price is exogenously determined. The first Research question states: how does a crude oil price fluctuation affect manufacturing output in Nigeria? This is corroborated by (Eksi, Izgi & Senturk 2011), investigated the effects of crude oil price fluctuations on industrial production for some oil exporting countries. The empirical findings show that, there is statistical meaningful short term effects from crude oil price to industrial production in all countries except France. What seems essential here, is for the Nigerian Government to resuscitate the dilapidated state of Nigerian refineries to compete favorably with the international price mechanism of crude oil price fluctuations.

The findings also show that, import of manufactured goods reduces the manufacturing output. However, as the import of manufactured goods exchange increases in presence of weak currency which make people to have more preference for imported goods while local manufactured production would decrease. This is supported by (Svensson, 2005), an increase in the oil price will worsen the terms of trade for an oil importing economy, which will result in lower income and a negative wealth and in turn lowers the demand. Although, an oil exporting economy like Nigeria will also experience negative production cost effects. When this happens, the local industries reduce production of goods and services. Hence, buying from other countries becomes inevitable.

The study also found that, the Real exchange reduces manufacturing output. That is, as the exchange of local currency over foreign currency, it increases the cost of local production as most of the equipment is imported. Therefore, the price of locally produced goods increases thereby reducing or weakening the manufacturing output. In a study conducted by (Gunmi, Hassan and Asiya Muazu) examined the impact of crude oil price on manufacturing performance of Nigeria. It was found out that Co integration (Long run equilibrium relationship) among the variables through the bond test. Crude Oil price has positive and statistically significant impact on manufacturing performance.

The second objective assessed the direction of causality between crude oil price fluctuations and manufacturing output in Nigeria. The result of pairwise Granger Causality test shows that Oil price granger
caused human investment. Imported manufactured goods also granger caused manufacturing output. Physical investment granger caused manufacturing output. In line with this, Mobolaji (1986) argued that there is a long run time lag between physical investment and manufacturing output.

5.2 Conclusion

The main objective of this study was to examine the crude oil price fluctuations on manufacturing sector performance in Nigeria. The empirical result affirms that although crude oil price and manufacturing sector are economic variables, their influence in determining the outcome of the Nigerian economic output is not pronounced, and growth in the GAP through activities in other major sectors of the economy will rather trigger manufacturing activities in Nigeria. Nigeria manufacturing sector performance suffered as a result of high crude oil price whereas low level of crude price did affect manufacturing performance positively due to strong economic conditions in manufacturing sector.

5.3 Policy Recommendations

Based on the above findings, the following recommendations are given:

i. The findings show that each time there is increase in the crude oil price, it influences the manufacturing output negatively. In the light of foregoing, the manufacturing sector needs to be strengthened and adequately protected from the crude oil price changes either by provision of subsidy or resuscitating the refineries already established.

ii. The result also indicates that increase in the crude oil price affects exchange rate. This means when the crude oil price increases, exchange rates also increase leading to adverse effect in the long run. The government needs to regulate domestic selling price of crude oil to stabilize exchange rate thereby making it advantageous for manufacturing sector.

iii. The findings show positive long run relationship between population of labour and manufacturing output. Hence, labour-intensive techniques of production should be highly promoted in Nigeria.

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BUSINESS NETWORKS AS A MEANS OF IMPACT ON AGRIBUSINESS ORGANIZATIONS COMPETITIVENESS

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JEL: Q10, Q13

Abstract

The business environment in the agricultural sector is rapidly changing and highly competitive in modern conditions. The need to unite farmers in business networks arises as a result of these realities. The purpose of the article is to discuss the potential of business networks to influence the strength in the competitive struggle in agribusiness in Bulgaria. In order to achieve the goal, a survey was conducted among one of the forms of business networks, which finds application on the territory of the country. The topic of research is based on the network`s characteristics noted in literature as a tool for searching for innovative solutions in order to improve the ability of business organizations to compete.

Key words:
business networks, impact, agribusiness organizations, competitiveness

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Introduction

The problem about competitiveness in the agricultural sector in recent decades is becoming increasingly relevant as a result of increased competition, dynamic business environment and a new social and market order defined by international agreements and institutions (World Trade Organization (WTO), World Bank, European Union (EU), Food and Agriculture Organization (FAO), Organisation for Economic Co-operation and Development (OECD) and etc.). The emergence of the idea of creating business networks of united farmers is a result of these circumstances. It is increasingly common that successful organizations do not rely solely on traditional routine and imposed business practices, which are characterized by stable and slow rates of adaptation to changes in the business environment and sustainability in the competitive struggle. By uniting in business networks, organizations in the agrarian sector receive advantages that help to cope with the challenges of the new realities and achieve goals that would otherwise be difficult to achieve and at a higher cost.

In recent years, networks in business communities, or so-called networks, have often been named "business networks". They bring together participants (business organizations) and what they share. They are interconnected by network-specific relationship types. Business networks are specifically tailored to facilitate communication and are intended for professional purposes. Participation in a business network could contribute to the development of an agribusiness organization and increase its competitiveness, which is actually one of the main economic challenges facing business organizations in modern conditions. For a number of reasons, business networks are understudied, which creates difficulties in distinguishing and realizing the benefits of participation in such structures. The present article is an attempt to reveal key characteristics of business networks and justify their application as a means of increasing the competitiveness of business organizations in the agrarian sector. When examining the relationship between business networks and competitiveness, the focus is on the micro level, as this allows greater insight into individual behavior.

The purpose of the article is to discuss the potential of business networks to influence the strength in the competitive struggle in agribusiness in Bulgaria. In order to achieve the goal, a survey was conducted among one of the forms of business networks, which finds application on the territory of the country. Following the results of the survey, the dynamics in development of the number of studied forms of business networks in the country, namely the groups and organizations of producers, has been traced. The period for which the trend in their development is identified is for the last four years: 2019, 2020, 2021 and as of 01.09.2022.

1. Business networks in the agricultural sector

The concept of networks in the 21st century is increasingly used in political, economic and social fields. Networks in business communities or so-called "business networks" have been increasingly mentioned in recent years. As noted by Doitchinova, Terziyska and Zaimova (2017), there is no single definition of the concept of "business networks" and the interpretation of what they are depends on the aspects in which they are considered. In studies of Öberg (2019), it is stated that the definition of "business networks" addresses issues such as: 1) whether the network is built or based entirely on business exchanges; 2) whether the network is limited to specific tasks; and 3) what is the weight and importance of the connections (between individuals and organizations in the network) to the realization of business exchange. In her research, Kirova (2017) mentions that "typically, business networks include groups of firms cooperating in the design, production and delivery of products to customers". On the other hand, Spanikova (2014) states that business networks are "forms of cooperation that allow organizations belonging to different regions, with different production capacities or working in different but complementary sectors to work towards common goals".

For the purposes of this article, a definition is used according to which a business network is accepted as "an intermediate form of organizational management in which a number of business units are interconnected through specific inter-firm interactions working together to achieve common goals" (Ford et al., 2011). Business networks define the cooperative relationships that arise between individual business organizations in the process of seeking compensation for weak market positions with the aim of sustainable development and securing a competitive advantage in agribusiness. Business networks in the agrarian sector differ, as the sector
is characterized by many actors with high specialization and exchange, and high competition at the national level. At the same time, this industry also has a number of specifics, such as the dominance of small ownership and informal management, strong dependence on natural conditions, unequal public support of participants, segmentation of markets, strict regulation by the state, the need to interact with commercial chains, etc.

The main priority of business networks of interconnected business organizations is to combine the interests of participants to achieve higher production efficiency and competitiveness. There are various types of effects of strategic importance of well-built business networks on the stability and development of agribusiness organizations, increasing their ability to compete. Such effects can be cooperation, increased competences, stimulation of innovative capacity, professional realization, easier access to resources, economies of scale, competitive strategies, reaching international markets, reduced transaction costs, etc.

Among the forms of business networks used in Bulgaria are producer organizations (PO) and non-governmental organizations (NGO). One of the main differences between them is the nature of the activity performed. Producer organizations are distinguished by the fact that they carry out their activities with an economic purpose, while NGOs are characterized with non-profit goals. The list of non-governmental organizations in the agrarian sector and the list of recognized producer organizations are published on the website of the Ministry of Agriculture. This article examines producer organizations which are recognized by the Minister of Agriculture. They can be producer groups and producer organisations. Producer groups and organizations (GP and PO) help farmers reduce transaction costs and cooperate in processing and trading their products. The Agriculture State Fund supports producer organizations by providing financial assistance under the "Operational Programs" intervention. The support provided is aimed at increasing the sector's competitiveness and market orientation, reducing fluctuations in producers' incomes due to crises and increasing the use of ecological cultivation and production techniques. The implementation of this intervention aims at uniting farmers so that they can concentrate the output they have produced, adjust to demand in terms of quality and quantity, reduce costs related to production and strengthen their positions on the market.

The participation of agribusiness organizations in collective action could lead to a number of advantages that have a potentially positive impact on their competitiveness. To substantiate this, the paper examines the ways in which business networks can affect the ability of business organizations to compete, identified in literature, and a survey of agribusiness organizations participating in one form of this type of network structure (groups and organizations of producers), examples of actual operating business networks in the country are given and the dynamics in the development of their number over a four-year period is followed.

2. Business networks and the competitiveness of agribusiness organizations

In modern conditions, the business environment in the agrarian sector is characterized by a high degree of competition and dynamism, which are part of the main challenges faced by business organizations in the sector. Competitiveness is "the ability of organizations to develop competitive advantages over their competitors by pursuing similar goals to them" (Latruffe, 2013). In recent years, research has been devoted to various aspects of the competitiveness of agricultural holdings of different sizes, in individual countries, sub-sectors, etc. (Bashev and Koteva, 2021). To date, however, there is no widely accepted and comprehensive framework for understanding the competitiveness of agricultural holdings in different market and economic environments. According to Nowak and Krukowski (2019), the complexity in increasing competitiveness is faced in the face of modern challenges in the business environment and the concept of sustainable development of agriculture. Competitiveness in this article is understood as "the internal ability (potential) of the agribusiness organization to maintain competitive advantages in a certain market, leading to high results through continuous improvement and adaptation to changes in the business environment" (Bashev and Koteva, 2021; Bachev, 2010).

Research in recent years has been devoted to various aspects of the competitiveness of business organizations in the agrarian sector and the factors that influence its increase. In the specialized literature (Leick and Gretzinger, 2020) there are claims that one of the ways to increase the competitiveness of an
agribusiness organization is through creating strategic alliances (for example business networks and clusters). As stated by Ilieva (2018), "establishing interconnections between different entities in a business network is one of the main sources of knowledge that contributes to the exchange of experience and good practices to increase competitiveness".

On the other hand, sustainable development in the European Union (EU) increasingly depends on excellence in innovation as the main drivers of competitiveness in Europe. Recognizing this fact, in 2006, the EU adopted an innovation strategy and defined the establishment of clusters in Europe as one of the nine strategic priorities for the successful promotion of innovation, leading to increased strength in the competitive struggle in business. It is important to note that the emphasis here should not be on the economy as a whole, but on specific industries. The idea of looking at competitiveness nationwide is rejected and believed to be misleading, as it is firms (including agribusiness organizations) and not countries which "compete". When reviewing the existing specialized literature (Sergaki, 2010), it can be indicated that cooperation in business networks improves the competitiveness of business organizations in the following ways:

2.1. Business networks improve the productivity and efficiency of business organizations by:

- **Easier access to resources** – business networks provide participants with easier access to existing resources. These resources can be tangible, for example capital, labor or land, or intangible, for example market information, know-how, etc. Business networks with a large number of participants attract new capital that can finance part of the activities of members in a business network, thereby maximizing profit without increasing financial risks.

- **Economies of scale** – business networks provide their members with economies of scale, reduce unit production costs as a result of increased production, which in turn leads to increased competitive strength in the agricultural sector. Participation in producer groups and organizations recognized by the Minister of Agriculture is a good example of this type of advantage that agrarian organizations receive.

- **Easy coordination and transactions among business organizations** – the effectiveness of organizations depends on the ability of participants to minimize transaction costs. Important types of transaction costs for organizations can be, for example, information acquisition costs. Thanks to trust and the principle of reciprocity, collective action reduces the risks of opportunistic behavior of individual business organizations. Examples of this type of structure in which agrarian organizations receive advantages can be clusters in the sector and producer groups and organizations.

- **Achieving complementarity between businesses** – business networks provide business organizations with the opportunity to act together through complementary skills to achieve results that they could not achieve individually because they would be less competitive. Here, marketing plays an important role within a network. Having a group of related organizations provides efficiency in joint marketing, for example, company referrals, trade fairs in the field of agriculture, etc. Here we can mention as an example the groups and organizations of producers recognized by the Minister of Agriculture, which jointly trade the manufactured products.

2.2. Business networks stimulate innovative capacity

The understandings of business networks and clusters mention that close interactions between business organizations are the main determinant of technological development and competitiveness. Innovation in the agricultural sector can be defined as a process leading to a structural change in the organization (its products, technologies, etc.) and is mostly based on the creation of new knowledge. Spatial proximity between business organizations can lead to a greater likelihood of interactions, which means that business networks can promote innovation in the agricultural sector. Business networks stimulate innovation through the flow of information between participants. In addition, they also stimulate
the rapid diffusion of improvements, allowing organizations to turn their potential opportunities into advantages.

2.3. Business networks improve competitive strategies

Business organizations achieve higher profitability through higher prices or through lower costs than competitors. A competitive advantage depends on a unique value proposition involving trade-offs different from those of competitors. The "race" for best practices is actually more difficult than reducing prices. For this reason, differences in profitability most often arise from having a distinctive strategic position. Business networks provide a number of advantages to their members in order to strengthen their position on agricultural markets. They can also provide lower barriers to market entry (for example access to information, resources, markets and technology), thereby enabling more organizations to achieve their strategic goals, providing them with information that is readily available in network space.

2.4. Business networks facilitate commercialization in two different ways:

- **Better financial status.** Agricultural cooperation can attract new capital that can finance part of the members' activities, thus enabling expansion without increased financial risk. In addition, the level of business risk also decreases, as conditions are created for stabilizing profits through the distribution of risk achieved by undertaking different activities. The reduction of financial risk and business risk favors risk-averse participants.

- **Reaching global markets.** Business networks provide organizations with the resources they need to operate in global economies. They offer safer and easier entry into unknown markets through local partners. Expanding into international markets is always made easier by local partners who know the agricultural markets, the consumers, the distribution networks and the strategies to be implemented.

In the specialized literature (Krebs and Jung, 2017), there are claims that business networks are an important economic phenomenon with increasing practical importance throughout Europe. An example of such business networks in the agrarian sector, which can lead to the advantages listed above and increase the competitiveness of agrarian organizations, are producer organizations. The European Union (EU) recognizes the special role of producer organizations as one of the main forms of business networks. There are many farmers in EU who work on small family farms. This makes it somewhat difficult for smallholder farmers to protect their interests when negotiating with other actors in the supply chain. Accordingly, to increase the collective bargaining power of farmers, EU supports them by uniting them in producer organisations. Producer organizations, in turn, strengthen producer bargaining mainly by improving marketing, information exchange, assistance in quality management, concentration of supply, etc.

Business networks in Bulgaria, however, are not widely applicable. The reasons for this could be different. As the main problems for the low spread of network structures in the agricultural sector, Terziyska (2018) found out in her research that these are insufficient information, lack of interest of relatively large farmers, lack of trust between producers, processors and traders and their lack of interest. In the author's survey, it was established that the main reason for the low spread of business networks in the agricultural sector in Bulgaria, according to 89% of experts, is the lack of trust between farmers, processors and traders. The paper states that the most important factors for the functioning of business networks are the relations of cooperation, followed by coordination and cooperation. The research leads to the conclusion that association is weak due to fragmentation, lack of traditions, lack of forms for building long-term partnerships, lack of stimulation from the legal framework in the country, etc. In order to investigate the impact of the association of farmers in business networks on competitiveness, the article conducted a survey of business organizations in the agrarian sector that participate in business networks. The target group to which the survey was distributed are farmers who participate in one of the forms of business networks found in the country, namely producer groups and organizations.
3. Results of the survey concerning the impact of producer groups and organizations on the competitiveness of agribusiness organizations

In the present survey, the emphasis is placed on the competitiveness obtained by agribusiness organizations united in business networks of the type of groups and/or organizations of producers. A questionnaire was developed, which includes a total of 10 closed questions. They are related to an assessment of the main indicators that show the level of competitiveness of agribusiness organizations united in business networks, namely: easier access to resources, economies of scale, easy coordination and transactions among business organizations, stimulation of innovative capacity, improvement of competitive strategies, better financial status, as well as reaching global markets. The questionnaire is distributed among agricultural holdings, which are united in groups and organizations of producers that are one of the main forms of this type of network structures in Bulgaria. The respondents are farmers and managers of agribusiness organizations in various sectors, including "Milk and milk products", "Fruits and vegetables", "Honey and bee products", "Medicinal and essential oil crops" and "Cereals and oilseed crops". The assessment is based on a five-point scale, which determines the significance of the influence of each of the indicators on the competitiveness of agribusiness organizations that are united in this type of network structure (significant, rather significant, I have no opinion, rather insignificant, insignificant).

The survey sample included 52 (fifty-two) farmers and managers of agribusiness organizations who participate in producer groups and organizations recognized by the Minister of Agriculture. They operate in various sectors of agriculture. One part of them (twenty-three) are members of producer groups, and the other part (twenty-nine) are members of producer organizations. The interviewed farmers and managers of agribusiness organizations who are members of producer groups are in the sectors "Fruits", "Milk" and "Medicinal and essential oil crops", and those who are members of producer organizations are in the sectors "Fruits and vegetables", "Milk and milk products", "Honey and bee products" and "Cereals and oilseed crops".

Fig. 1 shows data on the relative share of surveyed members of producer groups by sector.

![Fig. 1. Relative share of surveyed members of producer groups by sector](image)

From fig. 1 shows that the largest number of respondents are agribusiness organizations which are members of producer groups in the "Milk" sector (52%), followed by agribusiness organizations in the "Fruit" sector (39%). The lowest share of respondents are farmers and heads of agribusiness organizations who are in the "Medicinal and essential oil crops" sector (9%).

Data are presented on the relative share of surveyed members of producer organizations by sector (see Fig. 2): "Milk and milk products", "Fruits and vegetables", "Honey and bee products" and "Cereals and oilseed crops".
The largest number of respondents are agribusiness organizations that are members of producer organizations in the "Fruits and vegetables" sector (50%), followed by agribusiness organizations in the "Honey and bee products" sector (32%) and the "Milk and milk products" sector (11%). The lowest share of respondents are farmers and heads of agribusiness organizations who are in the "Cereals and oilseed crops" sector (7%).

The results of the conducted survey (see Fig. 3) are presented, which show the opinion of farmers and managers of agribusiness organizations regarding the degree of influence of business networks of the type of groups and organizations of producers on their competitiveness. Competitiveness is determined by the indicators included in the figure (easier access to resources, economies of scale, easy coordination and transactions among business organizations, stimulation of innovative capacity, improvement of competitive strategies, better financial status, reaching global markets).
Fig. 3. Degree of influence of producer groups and organizations on the competitiveness of agribusiness organizations

From the derived data, one can sum up: the surveyed members claim that the unification in producer groups and organizations (GP and PO) positively affects their competitiveness, following all the indicators included in the present study. The highest proportion of respondents answered that participation in business networks leads to an improvement in the competitive strategies of agribusiness organizations (83%). A significant part of the respondents (77%) are of the opinion that their membership in GP and OP affects their improved financial situation, as well as the easier access to resources (74%) and easier coordination and transactions among business organizations (71%). A smaller share of respondents (65%) answered that participation in business networks (such as GPs and OPs) significantly influence the stimulation of innovative capacity, as well as economies of scale (50%) and reaching global markets (48%).

A smaller part of the surveyed members of producer groups and/or organizations answered that their participation in such a business network leads to a rather significant increase in their competitiveness. A proportion of them are of the opinion that their membership has a rather significant impact on economies of scale (32%), as well as on stimulating innovative capacity (27%) and better financial status (21%). There is a lower share of respondents who answered that their participation in business networks rather significantly affects easier coordination and transactions among business organizations (19%), improvement of competitive strategies (17%), reaching world markets (17%) and easier access to resources (16%).

The results of the survey show that 22% of respondents do not have an opinion on the impact of participation in producer groups and/or organizations on reaching global markets. The relative share of respondents who do not have an opinion on the impact of this type of business networks on easier coordination and transactions among business organizations, is also low (8%), the stimulation of innovative capacity (6%), economies of scale (6%), easier access to resources (4%) and better financial status (2%).
The relative share of respondents who answered that their participation in producer groups and/or organizations has a rather insignificant effect on increasing their competitiveness according to the studied indicators is relatively low. The relative share of respondents who answered that membership had a rather minor impact on reaching global markets was 13%, economies of scale 8%, stimulation of innovative capacity 2% and easier coordination and transactions among business organizations 2%. Only 4% of all respondents answered that their association in producer groups and/or organizations has a negligible effect on their competitiveness, expressed through the economies of scale indicator.

In order to establish to what extent business networks of this type (groups and organizations of producers) are widespread as a means of influencing the competitiveness of agribusiness organizations in Bulgaria, this article examines the dynamics of their development for the period 2019 - 01.09. 2022.

4. Producer organizations in Bulgaria

One of the forms of business networks, which finds application on the territory of the country, as already mentioned, are the organizations of producers, recognized by the Ministry of Agriculture. They, in turn, can be producer groups (GP) and producer organizations (PO). The conditions that GPs and OPs must meet in order to be recognized by the Minister are specified in Ordinance No. 12 of May 5, 2015 on the terms and conditions for the recognition of organizations of producers of agricultural products, associations of organizations of producers and interbranch organizations and producer groups. Producer organisations, including GPs and POs, help farmers to cooperate in the processing and marketing of produce and can provide easier market access with other actors in the food supply chain. Consolidation in GP and OP also helps farmers to reduce transaction costs. The construction of such business structures is associated with opportunities for the development of producers in a given branch of agribusiness. In their research, Falkowski and Ciaian (2016) state that it is important that "GPs and OPs are formed on the farmers' own initiative and aim to improve above all the economic efficiency of their member farms, mainly by adapting production and sales to market requirements'.

For the program period 2014 - 2020, groups and organizations of producers have applied for support under measure 9 "Establishment of groups and organizations of producers" from the Rural Development Program (RDP) 2014-2020. Support under the measure is aimed at creating producer groups and organizations in the agricultural sector.

Table 1 shows the number of contracts concluded under measure 9 "Establishment of groups and organizations of producers" from the Rural Development Program (RDP) 2014-2020, as well as the amount of financial assistance and the funds disbursed to date.

<table>
<thead>
<tr>
<th>Year</th>
<th>Contracts concluded (no.)</th>
<th>Amount of financial assistance (BGN)</th>
<th>Disbursed funds (BGN)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>7</td>
<td>5 438 315</td>
<td>248 259</td>
</tr>
<tr>
<td>2019</td>
<td>16</td>
<td>7 408 513</td>
<td>748 632</td>
</tr>
<tr>
<td>2020</td>
<td>7</td>
<td>3 417 994</td>
<td>1 372 392</td>
</tr>
<tr>
<td>2021</td>
<td>-</td>
<td>-</td>
<td>2 919 389</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
<td>16 264 822</td>
<td>5 288 672</td>
</tr>
</tbody>
</table>

Source: Compiled by the author based on data from Agrarian reports of the Ministry of Agriculture (2019, 2020, 2021, 2022)
According to data from the Agrarian Report 2021, in the period June 15 - September 4, 2018, the first acceptance of applications for support under measure 9 "Establishment of groups and organizations of producers" of the Rural Development Program (RDP) has been announced 2014-2020. The support is aimed at promoting and supporting the establishment of groups and organizations of producers in the agricultural sector, at supporting the production and supply of high-quality agricultural products that meet European standards and market requirements, as well as at facilitating market access for small and medium-sized farms.

During the year of admission - 2018, thirty eight (38) applications were received, with a total value of the requested subsidy of BGN 32,228,355. Seven (7) contracts were concluded, with the amount of financial assistance BGN 5,438,315. The disbursed funds amount to BGN 248,259.

According to data from the Agrarian Report 2020, the table shows that in 2019, sixteen (16) contracts for financial assistance were concluded, with a total amount of the agreed subsidy of BGN 7,408,513. The disbursed funds are in the amount of BGN 748,632.

According to data from the Agricultural Report 2021, in 2020, seven (7) support contracts were concluded, with a total value of the agreed subsidy of BGN 3,417,994.

Table 1 shows that according to data from the Agrarian Report 2022, from the beginning of the implementation of the measure (2018) until the end of 2021, thirty (30) financial support contracts were concluded, with a subsidy value of BGN 16,264,822. During the period, payments were made in the amount of BGN 5,288,672, of which BGN 2,919,389 in 2021. The summarized data show that with each passing year the amounts of funds paid under measure 9 "Establishment of groups and organizations of producers" of the 2014-2020 PRDP are increasing.

The information regarding the acceptance of measure and requested and paid funds shows that the participation in this type of network structures has the possibility of applying for free financial support from the state, which will help the development of agribusiness organizations, and this, in turn, will increase their competitiveness.

During the researched period, in parallel, in connection with the introduced state of emergency and anti-epidemic measures, in 2020 producer organizations were supported to compensate for the increased costs under sub-measure 21.3 „Extraordinary temporary support for small and medium-sized enterprises and recognized producer groups and organizations COVID 3' of measure 21 "Extraordinary temporary support for farmers and small and medium-sized enterprises that are particularly affected by the crisis caused by COVID-19", from the Rural Development Program 2014-2020. Measure 21 was introduced with the eighth amendment of the RDP on 23.07.2020. In 2020, a number of changes have been made to the conditions for its application, aiming to properly target assistance to those particularly affected by the crisis caused by COVID-19, farmers and small and medium-sized enterprises processing agricultural products and recognized groups and organizations of manufacturers.

In addition, in connection with the consequences of the invasion of Ukraine in March 2023, the reception of applications for assistance under sub-measure 22.2 has been launched "Extraordinary temporary support for SMEs that are particularly affected by the consequences of the Russian invasion of Ukraine" from the Rural Development Program 2014 - 2020, to which producer groups and organizations can apply. The support will be in the form of a one-off aid, aiming to contribute to overcoming the imbalance on the market. The aid under the sub-measure will be determined taking into account the negative difference between the operating income received in 2022 and the expenditure incurred in 2022. The Ordinance for sub-measure 22.2 specifies the conditions to which producer groups and organizations must comply, including:

"1. more than 51% of the members of the group/organization:  
   a) have received a payment under the payment scheme for agricultural practices that are favorable to the climate and the environment (green direct payments) for the 2022 campaign, or  
   b) breed animals in an active animal breeding facility under Art. 137 of the
Law on Veterinary Medical Activity and are registered in the Integrated Information System of the Bulgarian Food Safety Agency - VetIs or

2. The producer organization or group submitted any of the documents listed in the draft Regulation on the implementation of sub-measure 22.2 "Extraordinary temporary support for small and medium-sized enterprises affected by the consequences of the Russian invasion of Ukraine."

The possibility of support under sub-measure 21.3 "Extraordinary temporary support for small and medium-sized enterprises and recognized groups and organizations of producers COVID 3" and sub-measure 22.2 "Extraordinary temporary support for small and medium-sized enterprises affected by the consequences of the Russian invasion of Ukraine" shows that by joining together, farmers can receive financial support from the state due to adverse economic consequences.

In order to establish to what extent the participation in groups and organizations of producers is a widespread method for improving the competitiveness of farmers in Bulgaria, first of all, in the present study, the dynamics in the development of their number has been traced. Fig. 4 shows the number of groups of producers recognized by the Minister of Agriculture for the last four years (2019 - 01.09.2022).

![Fig. 4. Dynamics in the number of recognized producer groups in Bulgaria](https://www.mzh.government.bg/)

The trend in the development of the number of recognized groups of producers in Bulgaria for the studied period is decreasing (see Fig. 4). This shows the lack of interest of producers in the agrarian sector in the country to unite in such type of business networks. The dynamics in the number of recognized groups of producers is tracked by up-to-date lists that are published periodically on the official website of the Ministry of Agriculture (https://www.mzh.government.bg/).

In Fig. 5, the dynamics in the development of the number of producers' organizations recognized by the Minister of Agriculture in Bulgaria for the period 2019 - 01.09.2022 is traced. As a result of the obtained results, from the trend in the development of producers' organizations, the degree of spread of this type of network structures as a means of increasing the competitiveness of business organizations in the agrarian sector is observed.
Fig. 5. Dynamics in the number of recognized producer organizations in Bulgaria
Source: Compiled by the author based on data from the Ministry of Agriculture (2019, 2020, 2021, 2022)

Data on the dynamics of the number of recognized producer organizations in Bulgaria show that, as with recognized producer groups, the development trend is downward (see Fig. 5). This, in turn, shows the high lack of interest of producers in the agrarian sector in the country to unite in such type of network structures.

The reasons for farmers’ reluctance to join producer groups and organizations can be varied. The downward trend may be a result of the unstable economic situation in the country due to the consequences of the COVID-19 pandemic, the consequences of the Russian invasion of Ukraine, etc. unfavorable consequences for the economic environment. Other factors that could be the reason for the weak interest of farmers can be reduced to their lack of awareness about the direct benefits of participating in such type of business networks, lack of a legal framework in the country to stimulate association, lack of financing opportunities, lack of trust between farmers, processors and traders, etc.

5. Conclusion

As a result of the review of the existing literature in the field of business networks and the competitive advantages obtained by the agribusiness organizations that are members of them, and as a result of a survey conducted on the evaluation and opinion of the farms that are members of groups and/or organizations of producers such as one of the forms of business networks, the study identified that business networks have a positive impact on the competitiveness of the agribusiness organizations that participate in them. The main competitive advantages that members gain from participating in business networks are reduced to improved competitive strategies, better financial status, easier access to resources, easier coordination and transactions among business organizations, stimulation of innovative capacity, cost savings scale and reach global markets. By providing these benefits, business network participants can prevent potential losses while increasing their strength in the competitive struggle in business in the agrarian sector. In this article, the results of the survey show to what extent the competitiveness of the agribusiness organizations that participate in one of the business networks found in the country, namely producer groups and organizations, increases. As a result of the obtained results, the positive contribution they have on increasing the competitiveness of farmers and agribusiness organizations by obtaining the competitive advantages described as indicators in the study (improvement of competitive strategies, better financial condition, easier access to resources), easier coordination and transactions among business organizations, stimulating innovative capacity, economies of scale and reaching...
global markets). This will help to overcome obstacles to the use of business networks as a factor in increasing the potential of agribusiness organizations to maintain competitive advantages while continuously improving and adapting to changes in the business environment.

In order to find out to what extent this method of increasing the competitiveness of farmers has been popularized in the country, the scientific study traced the dynamics in the development of the number of one of the forms of business networks that is widespread in Bulgaria, namely producer organizations (including producer groups and organizations). From the obtained results, the lack of interest on the part of producers in the agrarian sector can be observed, which can be prompted by various reasons. These can be insufficient awareness of the direct benefits of participating in such network structures, lack of interest of relatively large farmers, lack of trust between producers, processors and traders, lack of traditions, lack of forms for building long-term partnerships, lack of stimulation by the legislation in the country, etc. The lack of interest on the part of farmers and agribusiness organizations may also be a result of the unstable economic situation in the country due to the consequences of the COVID-19 pandemic, the consequences of the Russian invasion of Ukraine, etc. unfavorable consequences for the economic environment. As a recommendation for the wider dissemination and encouragement of farmers and heads of agribusiness organizations towards association, it can be stated that the new Strategic Plan for the Development of Agriculture and Rural Areas of the Republic of Bulgaria for the period 2023-2027 includes interventions, on which producer groups and organizations can be assisted. The aim is to provide support to improve the market positions of farmers, increase their productivity through optimal use of resources and increase their share in the value chain. As a result of the support opportunities for the interventions that farmers can receive, positive trends will be created in the realization and the share of supply of local production, they will more easily cope with the demands of customers for the demanded quantities and quality, they will increase producers’ incomes, production costs will be reduced by providing common facilities. Obtaining financial support for interventions also leads to higher profitability, introduction of innovations and new technologies and last but not least – minimization of costs for members of groups and/or producer organizations. All these opportunities that can be obtained by farmers participating in business networks such as producer groups and organizations will lead to an increase in their competitiveness.

References


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