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Consumer perceptions of marketing mix in supermarkets: a cross-cultural analysis of Croatia and Tanzania

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The primary objective of this study was to examine whether significant differences exist in the perception of supermarket marketing mix elements between consumers in Croatia and Tanzania. The analysis focused on five key dimensions (product, price, distribution, promotion, and personnel) with the aim of identifying the factors contributing to consumer satisfaction or dissatisfaction within distinct market contexts. The research employed a quantitative methodology, gathering data from 991 respondents (400 from Croatia and 591 from Tanzania) through a structured survey based on a five-point Likert scale. The findings revealed statistically significant differences across all five marketing mix dimensions. Tanzanian respondents consistently expressed more favorable perceptions, particularly in relation to promotional activities and personnel interactions. Exploratory factor analysis suggested three broader dimensions, whereas confirmatory factor analysis provided stronger support for the theoretically specified five-factor structure. Multi-group CFA further supported metric and scalar measurement invariance across the Croatian and Tanzanian samples. The findings highlight the importance of adapting retail marketing strategies, particularly communication, service delivery, and promotional activities, to the specific characteristics of different national market contexts.

KEYWORDS
comparative analysis, consumer behavior, consumer loyalty, Croatia and Tanzania, customer satisfaction, marketing mix

1 Introduction

Consumer perceptions of marketing activities play a critical role in shaping satisfaction, loyalty, and purchasing behavior, particularly within the retail sector, which is increasingly influenced by local economic conditions and cultural norms. Supermarkets, as a dominant retail format, represent a point of convergence between global marketing practices and local consumer expectations. The way consumers interpret and respond to the elements of the marketing mix (product, price, distribution, promotion, and personnel) can vary considerably across markets. Understanding these cross-cultural differences is essential for developing marketing strategies that are not only effective but contextually relevant. While numerous studies have examined the marketing mix, comparative research that investigates consumer perceptions across culturally and economically distinct regions remains limited. This is

especially true for studies that juxtapose emerging markets, such as Tanzania, with more mature retail environments like Croatia. The lack of empirical evidence in this area highlights the need to explore how consumers from different backgrounds perceive and prioritize various marketing factors within the supermarket context.

Consumers in Tanzania, much like those in many sub-Saharan African markets, tend to operate in environments characterized by lower average income, intense retail competition, and a heightened emphasis on personal interaction with personnel (Kupeni and Magali, 2022; Nyangarika, 2016). In contrast, Croatian consumers navigate a more established retail landscape, where brand familiarity and service standardization support a more analytical approach to price and product evaluation (Pavlić et al., 2020; Vretenar et al., 2025). These differences suggest that perceptions of the marketing mix are likely to diverge significantly between the two groups, influencing overall satisfaction with the shopping experience.

Cross-cultural theories offer a useful lens for understanding why consumers in different countries interpret elements of the marketing mix differently. According to Hofstede's cultural dimensions, Croatia scores higher on individualism and uncertainty avoidance, while Tanzania displays stronger collectivist tendencies and higher power distance (Hofstede, 2001; Hofstede et al., 2010). These differences imply that Croatian consumers may evaluate product attributes, pricing strategies and promotions more analytically, whereas Tanzanian consumers may assign greater importance to interpersonal interaction, trust and social value. Similarly, Schwartz's value theory suggests that societies with stronger embeddedness and hierarchy (as in many East African contexts) place greater emphasis on social relationships and normative expectations, which can heighten the importance of personnel behavior and promotional engagement (Schwartz, 1992; Schwartz, 2006). In contrast, Croatian consumers, shaped by values of autonomy and egalitarianism, may respond more strongly to objective cues of product quality, price fairness and assortment variety. Integrating these frameworks helps explain why each of the 5Ps (product, price, place, promotion and people) may be perceived differently across the two markets. Although Hofstede's dataset does not provide direct scores for Tanzania, studies on East African and Sub-Saharan cultural patterns indicate generally higher collectivism, stronger power distance, and a greater emphasis on interpersonal relationships and community orientation (Minkov, 2018). These theoretical perspectives provide a contextual framework for interpreting potential cross-national differences in consumer perceptions. However, cultural dimensions were not directly measured in the present study; therefore, cultural explanations are treated as theoretically informed interpretations rather than empirically tested mechanisms.

Marketing theory traditionally conceptualizes the marketing mix as a set of controllable instruments that organizations use to influence consumer behavior and market outcomes. The concept was originally introduced by E. Jerome McCarthy through the well-known 4P framework consisting of product, price, place, and promotion (McCarthy, 1960). Over time, this framework has become one of the most widely used conceptual models for analyzing marketing strategies in retail and service industries (Kotler and Keller, 2016).

As retail environments increasingly evolved toward service-oriented interactions, scholars such as Bernard H. Booms and Mary J. Bitner expanded the traditional model into the extended marketing mix framework, introducing additional elements such as people, process, and physical evidence (Booms and Bitner, 1981). Within retail environments, particularly supermarkets, the "people" dimension is especially important because direct interaction between employees and customers strongly influences perceptions of service quality and the overall shopping experience (Zeithaml et al., 2018).

From the perspective of consumer behavior theory, marketing stimuli affect consumers through cognitive and emotional evaluation processes. According to Philip Kotler, consumer responses to marketing activities depend not only on objective product characteristics but also on perceived value, psychological interpretation, and situational factors present during the shopping experience (Kotler and Keller, 2016). In retail settings, these evaluations often occur simultaneously across multiple marketing dimensions, including product assortment, pricing strategy, promotional communication, and interpersonal service interaction.

Consumer satisfaction itself is commonly explained through the expectation–disconfirmation theory developed by Richard L. Oliver. This theoretical framework suggests that satisfaction emerges when perceived performance meets or exceeds prior consumer expectations (Oliver, 1980; Oliver, 1997). In the context of supermarket retailing, expectations are shaped by previous shopping experiences, economic conditions, cultural norms, and the competitive structure of the local retail market.

Consequently, perceptions of marketing mix elements may differ significantly across countries and cultural contexts. Differences in economic development, consumer purchasing power, and cultural norms influence how consumers interpret pricing fairness, promotional incentives, service interaction, and product quality (De Mooij, 2019).

This study aims to examine how consumers in Croatia and Tanzania perceive key marketing mix elements in supermarkets and to what extent these perceptions contribute to satisfaction or dissatisfaction. Using a structured quantitative approach incorporating exploratory and confirmatory factor analysis, multi-group measurement invariance testing, MANOVA, ANOVA, and independent-samples t-tests, this research provides empirical insights into similarities and differences between the two national samples. The findings contribute to the existing body of knowledge by clarifying how supermarket marketing mix perceptions differ across distinct national market contexts, while also showing how advanced quantitative techniques can be used to examine the underlying measurement structure of consumer perceptions. By integrating marketing mix theory, consumer satisfaction theory, and cross-cultural perspectives, the study provides a broader explanation of how supermarket marketing strategies are interpreted by consumers in different socio-economic environments.

2 Literature review

Recent research increasingly emphasizes that consumer satisfaction in the retail sector is shaped by a combination of

marketing mix elements, service quality, and overall shopping experience. In supermarket environments, consumers simultaneously evaluate product assortment, pricing strategies, promotional activities, store accessibility, and employee interaction when forming perceptions of retail performance. These factors collectively determine perceived value and influence customer loyalty and repeat purchase behavior (Roggeveen et al., 2021; Shankar et al., 2021).

The transformation of supermarkets into customer-experience-oriented retail environments has further intensified the importance of marketing strategies that integrate multiple dimensions of consumer value. Studies show that customer satisfaction is not determined by a single marketing variable but rather by the combined influence of product availability, price fairness, promotional communication, store layout, and service interaction. As a result, understanding the interaction between marketing mix elements has become a central research topic in contemporary retail and consumer behavior studies (Grewal et al., 2017; Verhoef et al., 2015).

Although numerous studies investigate individual determinants of retail satisfaction, recent research increasingly suggests that marketing mix elements should be analyzed as an integrated system rather than isolated variables. In supermarket settings, product quality, price competitiveness, store accessibility, promotional strategies, and employee interaction operate simultaneously and jointly influence consumers' perceptions of value and satisfaction (Hübner et al., 2016; Roggeveen et al., 2021).

At the same time, global retail markets are experiencing rapid structural changes driven by digitalization, sustainability initiatives, and increasing competition among retail chains. These developments have intensified the need for retailers to understand how different marketing mix components contribute to customer satisfaction in diverse market environments (Pantano and Vannucci, 2019; Shankar et al., 2021).

Tables 1, 2 provide an overview of recent notable studies on consumer satisfaction in the global retail sector, highlighting the key factors that contribute to building customer loyalty. The analysis is based on the 5P marketing mix framework, focusing on the impact of product attributes (such as quality and assortment), pricing strategies (including discounts and affordability), location factors (such as proximity and store layout), promotional efforts, and the role of personnel and customer service.

Product, price, promotion, and location have a positive and significant impact on consumer loyalty in supermarkets, explaining as much as 87.9% of the influence on consumer loyalty (Haryadi et al. 2021). The study by Wahab et al. (2024) shows that key factors influencing consumer choice in supermarkets include discounts, price, and location, with customers expecting a variety of high-quality products and improved services such as spacious parking. Product, place, and promotion variables significantly affect customer satisfaction, while price does not (Risal and Aqsa, 2021). Functional value (price/value for money) has a stronger positive influence than social value (Slack et al., 2020). Attitudes, price, and quality have significant direct effects on satisfaction and indirect effects on purchase intention in South Korea, but not in Tanzania, indicating the need for market-specific strategies (Marius et al., 2020). Mushtaq and Salar (2022) concluded that personnel, promotion, and price are the most influential factors affecting consumer behavior when shopping in supermarkets. On the other hand, the study by Waithaka and Wamalwa (2020) found that price, followed by location and product, represents the most influential marketing mix strategies for mini-supermarket customers in Nairobi County. In his research, McCollough (2025) explains that promotion and product form is a powerful combination in marketing, as they jointly create a sense of positive dissatisfaction in consumers, encouraging repeat purchases and a desire for something new.

Almost 55% of consumer loyalty in supermarkets is determined by brand perception, value creation, brand image, trust, price, and location (Rachmad et al., 2023). Products and promotions have less influence on purchasing decisions in Islamic retail, while price and store atmosphere have a significant impact (Monoarfa et al., 2023). The study by Larson and Batterson (2024) highlights that promotion and the psychological aspects of the product are the most influential elements of the marketing mix, as they have the greatest impact on shaping consumer perception and decision-making. The study by Fajrin and Aprianingsih (2024) reveals that price, people, process, and physical evidence significantly influence customer satisfaction, while product, place, and promotion have a nuanced impact. Customers are motivated to visit supermarkets due to price, quality, location, hygiene, and personal experience (Sanapala et al., 2023). Also, product, price, promotion, and retail service influence supermarket customers' purchasing decisions (Sugito et al., 2022). Customers expect variety, quality, spacious parking, and eco-friendly products, which supermarkets must address to achieve satisfaction (Varalakshmi et al., 2024). Product, place, promotion, and personnel significantly affect customer satisfaction (Mondir et al., 2023). Research by Gustama (2021) shows that product and price variables have a positive and significant influence, as does promotion, while location does not. Customer satisfaction is significantly affected by product, price, promotion, and personnel, while location has a minimal impact (Devina and Yanuar, 2023). Good product quality, affordable prices aligned with the purchasing power of the target audience, easily accessible locations, and effective promotions influence consumers to buy products and remain loyal (Dimelda et al., 2024). Brand image, service quality, promotion, and price influence customer satisfaction (Murtini, 2025). Price perception, promotion, and service quality have a positive and statistically significant influence on consumer loyalty (Hakim et al., 2023). Product, price, location, and employees significantly affect customer satisfaction (Solihiyah et al., 2024). The study by Htwe (2020) shows that product offerings, price, and presentation have a significant positive effect on customer satisfaction, while place, promotions and events, and personnel do not. Price, place, and product have a positive and significant effect on loyalty, while promotion does not (Sutianingsih and Samodra, 2021). Marketing mix elements (product, price, promotion) have a direct and significant positive effect on consumer loyalty, while location has an insignificant effect (Malelak et al., 2021). Product, promotion, place, physical evidence, and process variables significantly affect customer loyalty, while price and employee variables have an insignificant impact (Anwar and Saleh, 2022).

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TABLE 1 Main drivers of consumer satisfaction in supermarket retail sector (2020–2022).

Author	Product	Price	Place	Promotion	People
Haryadi et al. (2021)	x	x	x	x	
Risal and Aqsa (2021)	x		x	x	
Kanakaratne et al. (2020)	x				
Slack et al. (2020)		x			
Dam and Dam (2021)					x
Marius et al. (2020)	x	x			
Tegambwage and Kasoga (2022)					x
Möslein-Tröppner et al. (2020)	x	x			
Mushtaq and Salar (2022)		x		x	x
Waithaka and Wamalwa (2020)	x	x	x		
Karunarathna et al. (2020)	x	x		x	
Monoarfa et al. (2023)		x			x
Nuryadin et al. (2021)					x
Othman and Harun (2021)					x
Swoboda and Batton (2020)	x				
Gustama (2021)	x	x		x	
Zainuddin et al. (2022)	x				
Dropulić and Krupka (2020)	x				
Simanjuntak et al. (2020)	x	x			x
Kovanoviene et al. (2021)				x	
Pavlić et al. (2020)	x				
Chao and Uhagile (2022)	x	x			
Marković et al. (2022)	x				
Suharyono and Elfahmi (2021)	x	x		x	
Htwe (2020)	x	x		x	
Sutianingsih and Samodra (2021)	x	x	x		
Malelak et al. (2021)	x	x		x	
Dawes et al. (2021)	x				
Anwar and Saleh (2022)	x		x	x	

Although all elements of the marketing mix are relevant, the most influential individual element in the study by Kanakaratne et al. (2020) is product quality, as it emerges as the central factor in shaping consumer perception and loyalty. Improving quality and expanding product offerings are recommended strategies for retaining loyalty, where price is also an important factor, especially in terms of the price-to-quality ratio (Dawes et al., 2021; Espinoza et al., 2023; Möslein-Tröppner et al., 2020; Saptaji et al., 2024; Saputra et al., 2023). Marketing mix variables (product, price, place, promotion) are positively associated with consumer satisfaction, but only product and price have a significant effect (Ratnawati et al., 2024). The study by Mukhtar et al. (2023) concludes that incentives such as competitive prices, loyalty rewards, and discounts motivate consumers to engage alongside reviews. Pavlić et al. (2020) found that the widest and highest-quality assortment of products has the greatest influence on consumers, while ambiance, location, and price are the least influential. Considering young consumers, they highly value characteristics such as performance, reliability, durability, and aesthetic appeal of products (Marković et al., 2022). Pricing strategies such as advance payment discounts and cost-based pricing contribute positively to sales efficiency (Kapipi, 2025). Price promotions have the greatest impact on purchase intention, with age, income, and culture moderating the relationship (Suyanto and Dewi, 2023). There is a strong connection between corporate reputation and consumer loyalty, with product quality, as well as social and environmental responsibility, being dominant factors (Swoboda and Batton, 2020). Pricing strategy is ranked as the most important for customer loyalty, followed by promotion, location, and product being the least important (Huynh, 2024). The study by Zainuddin et al. (2022) recommends that the focus should be on product quality as the strongest influencing factor for consumer loyalty in supermarkets. Product price is the most influential variable in supermarkets, followed by product and personnel service, while location and promotion do not have a

TABLE 2 Main drivers of consumer satisfaction in supermarket retail sector (2023–2025).

Author	Product	Price	Place	Promotion	People
Wahab et al. (2024)		x	x		
Hasbiah (2025)					x
Ismail et al. (2023)				x	
Kapipi (2025)		x			
Sirajuddin et al. (2023)			x	x	
Rachmad et al. (2023)	x	x	x		
Fajrin and Aprianingsih (2024)		x			x
Suyanto and Dewi (2023)		x		x	
Prabandaru and Soepatini (2025)	x			x	
Ratnawati et al. (2024)	x	x			
Mukhtar et al. (2023)		x			
Sanapala et al. (2023)	x	x	x		
Sugito et al. (2022)	x	x		x	x
Varalakshmi et al. (2024)	x		x		
Kolodenko et al. (2024)	x			x	
Tegambwage (2025)					x
Mondir et al. (2023)	x		x	x	x
Huynh (2024)	x			x	
Devina and Yanuar (2023)	x	x		x	
Dimelda et al. (2024)	x	x	x	x	
Murtini (2025)	x	x		x	x
Pakutandang and Indrawati (2024)	x		x	x	
Pratama et al. (2023)					x
Hakim et al. (2023)		x		x	x
Espinoza et al. (2023)	x				
Solihiyah et al. (2024)	x	x	x		x
Mohamed and Khalil (2024)					x
Saputra et al. (2023)	x	x			
Saptaji et al. (2024)	x				
Ananda and Ratnasari (2025)					x

significant impact (Simanjuntak et al., 2020). Product quality, price perception, and promotion positively and significantly influence customer satisfaction (Suharyono and Elfahmi, 2021). Research conducted in Croatia indicates that product prices (specifically fish) are one of the main triggers of low consumer purchasing levels (Marčetić et al., 2022).

Among all elements of the marketing mix, promotion has the strongest impact on customer loyalty in supermarkets (Ismail et al., 2023). Product and price do not have a significant effect on consumer purchasing behavior, location has a positive and significant impact, while promotion has a favorable and strong influence (Sirajuddin et al., 2023). The study by Kovanoviene et al. (2021) shows that the promotional element has the strongest association with perceived value and consumer loyalty. The research by Šostar et al. (2024) shows that the key to sales success in supermarkets is regular promotions and discounted prices, as well as friendly and approachable personnel. There is a significant positive relationship between relationship quality, service quality, customer satisfaction, and loyalty (Tegambwage and Kasoga, 2022). The study by Nuryadin et al. (2021) shows that service quality in supermarkets positively and significantly affects customer satisfaction. Dimensions of interpersonal relationship quality are significantly associated with customer loyalty, while organizational dimensions are not, except for commitment (Tegambwage, 2025). Establishing professional and friendly communication with customers, service quality, and transparency of business processes play a key role in creating a positive customer experience (Ananda and Ratnasari, 2025; Mohamed and Khalil, 2024; Othman and Harun, 2021; Pratama et al., 2023). The quality of sales personnel service positively affects brand image, customer satisfaction, and loyalty (Dam and Dam, 2021). The "people" and "process" dimensions have the greatest impact on customer satisfaction, while "location" and "physical evidence" do not significantly impact customer

satisfaction (Hasbiah, 2025). The study by De Alwis (2023) found that various social media marketing factors, such as informativeness, trendiness, interactivity, personalization, word-of-mouth, and the overall social media marketing model, have a significant impact on consumers' purchase intentions.

Looking at new sustainability trends and eco-friendly products, customer perceptions are shifting. Green product, green price, and green promotion significantly affect green purchase intention due to consumers' environmental attitudes (Karunarathna et al., 2020; Kolodenko et al., 2024). On the other hand, the study by Prabandaru and Soepatini (2025) shows that green products and green promotion positively and significantly influence customer satisfaction and loyalty, while green price and green place do not have a direct significant impact on loyalty. Both Swedish and Croatian consumers emphasize the quality of green products; those who perceive it as higher are more likely to purchase (Dropulić and Krupka, 2020). The study by Pakutandang and Indrawati (2024) shows a significant positive relationship between green products, green locations, and green promotions and green satisfaction and loyalty, while green price does not have a significant positive effect. In the context of green food retail in Tanzania, product quality has the dominant influence on consumer motivation, followed by price, while other elements are not significant (Chao and Uhagile, 2022). The results of the study by Šostar and Ristanović (2024) show that product quality and composition, their origin in organic production, and their status as local or healthy products are decisive for the purchase of sustainable products, and that priorities vary by country.

Recent literature confirms that marketing mix elements remain fundamental determinants of customer satisfaction in supermarket environments. However, studies increasingly demonstrate that the relative importance of individual marketing dimensions varies across markets and consumer segments. While product assortment and price competitiveness are frequently identified as primary drivers of supermarket choice, promotional incentives, store accessibility, and employee interaction may become more influential depending on local economic conditions and cultural expectations (Pantano and Vannucci, 2019; Roggeveen et al., 2021). Despite the growing body of research on retail marketing and consumer satisfaction, several important gaps remain. First, most empirical studies focus on single-country contexts, limiting the understanding of how marketing mix elements are perceived across culturally and economically diverse markets. Second, many studies analyze individual components of the marketing mix rather than examining the combined influence of all five dimensions within supermarket environments. Third, comparative studies between European retail markets and emerging African economies remain relatively scarce. Addressing these gaps is important because consumer responses to marketing strategies are shaped not only by marketing activities themselves but also by broader socio-economic and cultural conditions. Therefore, this study addresses these limitations by providing a cross-national comparative analysis of consumer perceptions of all five marketing mix elements within supermarket environments, using an integrated analytical framework. In doing so, the study contributes to the marketing literature by extending understanding of perception-based satisfaction across culturally and economically distinct retail contexts. It also contributes to the analytics literature by demonstrating how exploratory and confirmatory factor analysis, measurement invariance testing, and multivariate group comparisons can be integrated within cross-national retail research.

3 Methodology of research

3.1 Hypothesis development

Based on the reviewed literature, the key elements of the marketing mix (product, price, place, promotion, and people) emerge as central drivers of consumer satisfaction in the supermarket and retail context. Although individual studies emphasize different components, the collective evidence highlights consistent cross-contextual patterns. These insights provide a theoretical foundation for the present study and guide the development of the research hypotheses, which aim to examine whether these marketing mix elements are perceived differently across the Croatian and Tanzanian markets. This study contributes to the existing literature by integrating marketing mix theory, cross-cultural consumer behavior frameworks, and perception-based satisfaction models within a single comparative empirical design. By examining all five marketing mix dimensions simultaneously in two culturally and economically distinct markets, the research provides a more comprehensive understanding of how retail marketing strategies are interpreted by consumers operating in different socio-economic environments. More specifically, the study makes three distinct contributions. It contributes to marketing literature by providing a rare cross-cultural comparison of supermarket marketing mix perception between a European and an African market. Also, it extends existing retail research by analyzing all five marketing mix dimensions simultaneously rather than focusing on individual elements in isolation. It contributes to analytics-oriented research by showing how a multi-method quantitative design can integrate measurement validation with multivariate and univariate tests of cross-national differences within the same dataset.

3.1.1 Perception of marketing mix elements in supermarkets: a comparison between African and European consumers

Cultural values, such as individualism vs. collectivism and power distance, strongly shape how consumers perceive product quality, pricing strategies, promotion, and distribution across different markets. These values differ significantly between regions such as Europe and Africa, making it clear that marketing strategies cannot be generalized but must be tailored to each cultural context (Asamoah and Chovancová, 2016). Roffman (2023) compared consumer responses from multiple countries to identical marketing messages and product formats, concluding that notable perceptual differences exist across markets, reinforcing the need for localized strategies in both African and European contexts. Li (2024) further emphasizes that given the profound cultural disparities across global markets, standard marketing campaigns are unlikely to resonate

equally, especially in culturally diverse regions like Europe and Africa.

H1: There are statistically significant differences in the perception of supermarket marketing mix elements between consumers in Croatia and Tanzania, highlighting the need for market-specific strategic approaches.

3.1.2 Perceived product quality and variety among African and European supermarket consumers

The study by Truong (2025) non-directly confirmed that African consumers place more importance on emotional and symbolic product attributes, while European consumers tend to adopt a more rational evaluation approach. Furthermore, Rajavi et al. (2024) reported that product variety substantially enhances brand perception in developing markets (such as those in Africa) more than in mature European markets. According to a Euromonitor International (2025), Tanzanian consumers demonstrate higher loyalty towards supermarkets offering broader product assortments, while European shoppers prioritize specialized and high-quality product lines.

H2: Consumers in Tanzania perceive product quality and variety more positively than consumers in Croatia.

3.1.3 Perceptions of price accessibility and promotional pricing among African and European consumers

In developing markets such as those in Africa, emotional responses tend to amplify price sensitivity and trigger more impulse purchases (Zafar et al., 2025). Zhang et al. (2024) conducted a global study which found that African consumers exhibit greater variability in price sensitivity compared to European consumers, particularly during early shopping hours. Similarly, Candeias and Alonso (2024) applied pricing sensitivity models and demonstrated that African consumers react more strongly to price changes than their European counterparts.

H3: Perceptions of price accessibility and promotional offers are significantly more positive among Tanzanian consumers than among Croatian consumers.

3.1.4 Perceptions of physical accessibility and store layout among African and European supermarket consumers

In South Africa, store proximity and interior design are among the strongest drivers of store visitation, far more so than in many European markets (Musasa and Tlapana, 2023). Beckers and Verhetsel (2023) support this view by showing that physical accessibility plays a critical role in shaping customer value perceptions in African urban settings. Additionally, Tlapana (2021) found that store layout is a key purchasing determinant in African cities, whereas its impact is noticeably weaker in Europe.

H4: Consumers in Tanzania place greater importance on the physical accessibility and layout of supermarkets than consumers in Croatia.

3.1.5 Perceptions of promotional activities in supermarkets: Africa vs. Europe

Giveaways and loyalty programs are dominant purchase motivators among African consumers, often more impactful than conventional advertising (Edel et al., 2018). Sudhaker et al. (2020) found that promotional campaigns strongly influence brand perception and purchase behavior in countries like Ghana, whereas European consumers exhibit higher expectations and lower emotional responsiveness to such incentives. Eze (2024) also demonstrated that African consumers show stronger emotional reactions to promotional stimuli than their European counterparts.

H5: Promotional activities (discounts, flyers, sweepstakes) are perceived significantly more positively by Tanzanian consumers than by Croatian consumers.

3.1.6 Perceptions of personnel professionalism and friendliness in supermarkets

In many African markets, organizations increasingly view employees as a central driver of consumer loyalty, an approach that tends to be less emphasized in European retail settings (Lovemore et al., 2023). In South Africa, interpersonal communication, service behavior, and employee friendliness are among the strongest predictors of customer satisfaction and loyalty, according to Noel and Govender (2024). Rezki et al. (2024) confirm that in developing economies, personal interaction significantly enhances customer loyalty—especially when supported by trust and a positive corporate image.

H6: The professionalism and friendliness of supermarket personnel are perceived significantly more positively by Tanzanian consumers than by Croatian consumers.

In addition to the theoretical framework (Figure 1), the study adopts a multi-method analytical approach combining exploratory factor analysis, confirmatory factor analysis, measurement invariance testing, and multivariate and univariate group comparisons. This sequence enables the exploratory assessment of the measurement structure, confirmatory evaluation of the theoretically specified model, verification of measurement comparability across the two countries, and subsequent testing of cross-national differences in consumer perceptions.

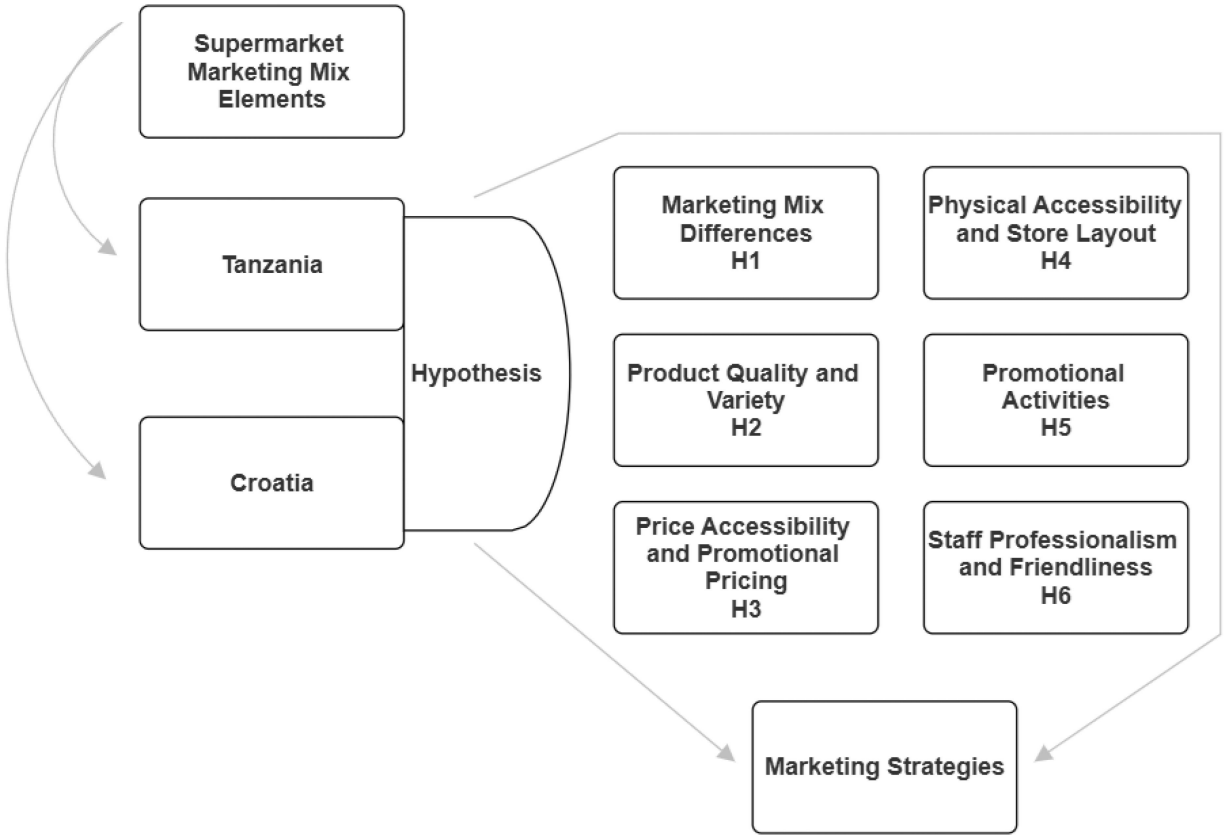

FIGURE 1
Proposed research framework.

3.2 Data collection

The research was conducted in 2025 in two countries: Croatia and Tanzania. The dataset used in this study consists of primary survey data collected specifically for the purpose of analyzing consumer perceptions of supermarket marketing mix elements. The data were collected through a structured questionnaire, available in both physical and online formats (Google Forms), designed to capture consumer attitudes toward five key dimensions: product, price, distribution, promotion, and personnel. A quantitative research design was employed to analyze differences in perceptions of the supermarket marketing mix among consumers from two culturally and economically diverse environments. Respondents were recruited using non-probability convenience sampling. According to institutional guidelines and Article 26 of the Code of Ethics of Josip Juraj Strossmayer University of Osijek, this study did not require formal ethical approval, as it involved anonymous survey data and did not include sensitive personal information. The research was conducted in accordance with national and international ethical standards. Participation was voluntary, and informed consent was obtained from all respondents prior to data collection. For online surveys, consent was provided electronically before completing the questionnaire, while for paper-based surveys, consent was implied through voluntary completion of the questionnaire.

Table 3 includes the demographic characteristics of respondents in Tanzania and Croatia. A total of 991 valid responses were collected, with 400 from Croatia and 591 from Tanzania. The dataset therefore represents a cross-national sample that enables direct comparison between two distinct retail environments. The relatively large sample size enhances the robustness of the statistical analysis and supports the application of multivariate techniques. The inclusion criteria required respondents to be adults and regular supermarket shoppers (at least once a month). Demographic data included gender, age, employment status, and monthly income, to allow for additional control of variables and insight into contextual differences. In addition to demographic variables, the dataset includes multiple observed variables measuring consumer perceptions across the five marketing mix dimensions. Each dimension is operationalized through several survey items, resulting in a multidimensional dataset suitable for factor analysis and cross-national comparison. This structure enables both variable-level analysis (e.g., mean comparisons) and examination of the underlying measurement structure through factor analysis. The dataset is cross-sectional in nature and captures consumer perceptions at a single point in time. While this design enables comparison between groups, it also reflects real-world consumer evaluations under current market conditions, which enhances the practical relevance of the findings.

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TABLE 3 Characteristics of the sample.

Characteristics	Tanzania	Croatia	Tanzania	Croatia
	Frequency		(%)	
Gender				
Male	373	99	63	25
Female	218	301	37	75
Age				
18–25	274	157	46	39
26–40	260	129	44	32
41–55	38	94	7	24
56+	19	20	3	5
Monthly income				
No income	41	63	7	16
To 500 EUR	56	43	10	10
501–1000 EUR	285	176	48	44
Over 1000 EUR	209	118	35	30
Employment status				
Employed	367	281	62	70
Unemployed	224	119	38	30

3.3 Measurement of the constructs

The measurement model was designed to ensure consistency across both national samples, allowing for direct comparability of responses. All items were standardized and adapted to maintain conceptual equivalence across cultural contexts. For the purposes of the research, a survey instrument was developed to measure the perception of marketing mix elements, structured into five dimensions (product, price, distribution, promotion, and personnel), using a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree).

Table 4 presents the dimensions that encompass a series of statements reflecting specific aspects of consumer behavior and their preferences when choosing a supermarket. The statements are designed to examine the influence of individual elements of the marketing mix on consumer choice, as well as their willingness to change shopping habits in the presence of more favorable alternatives. The product dimension includes perceptions of quality and assortment variety, while the price dimension captures attitudes toward pricing, preferences for store brands, and the importance of promotional benefits such as discounts. Distribution is operationalized through the geographic and spatial context, specifically, the proximity and organization of the retail space. The promotion dimension addresses the influence of advertising and sales incentives, while the personnel dimension explores the importance of personnel expertise and friendliness in shaping the perceived value associated with a particular supermarket. The statements were structured to capture the cognitive, affective, and behavioral aspects of consumer perception. The scales were designed to be universally understandable in both cultural contexts (Croatia and Tanzania), and prior to the final distribution of the survey, a comprehension and cultural adaptation test was conducted.

3.4 Methodology and statistical analysis

Since all data were collected through self-reported responses at a single point in time using the same structured questionnaire, there is a potential risk of common method bias (CMB), which can compromise the validity of the results. To mitigate this risk, several measures were implemented:

- The questionnaire was structured into clearly separated sections, each preceded by a brief explanation of the corresponding dimension, reducing the likelihood of automatic or patterned responses.
- The order of items was randomized to prevent respondents from giving similar answers due to response patterns.
- Anonymity and confidentiality were guaranteed, encouraging honest responses and minimizing the risk of socially desirable answering.
- Additionally, a statistical test was conducted to assess the presence of common method bias. Harman's single-factor test was used as part of the exploratory factor analysis to determine whether a single factor accounted for most of the variance in the data—an indicator that would suggest a potential bias.
- These procedural and statistical controls enhanced the credibility of the findings and supported the validity of the constructs used in the study.

TABLE 4 Measurement instrument.

Measurement Items
PRODUCT
1. The quality of products influences my choice of supermarket. 2. If the product quality is higher in another supermarket, I will switch to that supermarket. 3. The variety of the product assortment influences my choice of supermarket. 4. If another supermarket has a wider product range, I will switch to that supermarket.
PRICE
1. Product price influences my choice of supermarket. 2. If product prices are lower in another supermarket, I will switch to that supermarket. 3. I would rather buy a store brand than a well-known brand if the price is lower. 4. Discounts and special offers influence my choice of supermarket.
DISTRIBUTION
1. The distance of the supermarket influences my choice. 2. I prefer to choose a supermarket that is closer to me rather than one that is farther away. 3. The appearance and organization of the supermarket influence my choice. 4. I prefer to choose a supermarket that is better organized and maintained.
PROMOTION
1. Advertising (TV, radio, social media, promotional flyers) influences my choice of supermarket. 2. Sales promotions (samples and gifts, demonstrations and tastings, coupons, prize contests, loyalty cards) influence my choice of supermarket. 3. I prefer to go to a supermarket that has more promotional activities.
PEOPLE (PERSONNEL)
1. The expertise of supermarket personnel influences my choice. 2. I prefer to choose a supermarket where the personnel are more knowledgeable. 3. The friendliness of supermarket personnel influences my choice. 4. I prefer to choose a supermarket where the personnel are more friendly.

Statistical analyses were conducted using JASP, IBM SPSS Statistics, and Python. JASP and IBM SPSS Statistics were used for descriptive statistics, exploratory factor analysis, MANOVA, ANOVA, and independent-samples comparisons, whereas confirmatory factor analysis (CFA), multi-group CFA, measurement invariance testing, and the calculation of composite reliability (CR) and average variance extracted (AVE) were performed in Python using maximum-likelihood estimation and numerical optimization routines. The data analysis was carried out in several stages, with the overarching goal of examining differences in the perception of marketing mix elements between Croatian and Tanzanian consumers.

The initial phase involved descriptive statistical analysis. Key measures such as mean, standard deviation, standard error, and coefficient of variation were calculated separately for each country. This provided a preliminary overview of the data distribution and allowed for an initial assessment of group-level differences. To assess the validity of the constructs, exploratory factor analysis was conducted using Promax rotation. Prior to running the analysis, the suitability of the dataset was evaluated through the Kaiser-Meyer-Olkin measure and Bartlett's test of sphericity. This phase of the analysis aimed to identify the underlying structure of the variables associated with the marketing mix components.

Given the cross-national nature of the study, confirmatory factor analysis (CFA) and multi-group CFA were additionally conducted using maximum-likelihood (ML) estimation to evaluate the measurement structure and measurement invariance across the Croatian and Tanzanian samples. First, the theoretically specified five-factor measurement model, comprising product, price, distribution, promotion, and people, was evaluated and compared with the three-factor structure identified through EFA. Model fit was assessed using the chi-square statistic (χ^2), Comparative Fit Index (CFI), Tucker–Lewis Index (TLI), root mean square error of approximation (RMSEA), and standardized root mean square residual (SRMR). Subsequently, measurement invariance across countries was examined sequentially at the configural, metric, and scalar levels. Configural invariance assessed whether the same factor structure applied across the two groups; metric invariance constrained factor loadings to equality across groups; and scalar invariance additionally constrained item intercepts. Because chi-square difference tests are sensitive to large sample sizes, invariance decisions were primarily based on changes in approximate fit indices. Following Chen (2007), changes of no more than.010 in CFI and.015 in RMSEA, together with small changes in SRMR, were taken as evidence that increasingly restrictive invariance constraints did not substantially deteriorate model fit.

To explore whether the independent variable (country of residence) had a combined effect on the set of dependent variables (product, price, distribution, promotion, and personnel), a multivariate analysis of variance was performed. Pillai's Trace was selected as the test statistic, given its robustness in the presence of potential violations of the assumptions related to homogeneity of variance-covariance matrices. For a more detailed examination of each individual dimension of the marketing mix, a series of univariate analyses of variance were conducted. This step provided further insight into whether significant differences existed between groups for each specific marketing element. Additionally, independent samples t-tests were applied to compare the mean values between the Croatian and Tanzanian respondents across all key dimensions. These tests served to statistically confirm differences between the groups, with effect sizes estimated using Cohen's d to assess the magnitude of those differences. Collectively, these analytical steps contributed to a comprehensive understanding of differences in consumer perceptions of supermarket marketing strategies across the Croatian and Tanzanian samples.

4 Results

The analysis proceeded from general to more detailed examinations to identify key differences in how consumers from the two countries perceive supermarket marketing elements.

To assess the reliability of the measurement instruments, prior analyses of construct validity and reliability were conducted. These included exploratory factor analysis (EFA), the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy, and Bartlett's test of sphericity. The process continues with a multivariate analysis of variance (MANOVA), used to test the hypothesis that

statistically significant differences exist between respondents from the two countries in their overall perception of the five observed marketing dimensions: product, price, distribution, promotion, and people (personnel). Since the MANOVA revealed a significant effect of the "country" variable, further, more detailed univariate analyses were conducted. Subsequently, one-way analyses of variance (ANOVA) were performed for each of the five dimensions individually, aiming to determine exactly which components of the marketing mix showed significant variation. In parallel, independent samples t-tests were carried out to further confirm the differences between Croatian and Tanzanian consumers, providing additional insight into both the direction and magnitude of these effects.

4.1 Validation of measurement instruments (reliability and validity)

Before conducting the exploratory factor analysis, the suitability of the dataset for this method was assessed. The Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy was applied (Table 5). The overall KMO value was 0.926, indicating a very high level of sampling adequacy. According to Kaiser (1974), KMO values in the 0.90 range represent the highest category of sampling adequacy, supporting the suitability of the data for factor analysis. The individual measures of sampling adequacy were also consistently high, with all values exceeding 0.89 (Table 5), further supporting the appropriateness of the dataset for factor analysis.

To further assess the appropriateness of applying factor analysis, Bartlett's Test of Sphericity was conducted (Table 6). The result (χ^2 (171) = 11,777.715; $p < .001$) indicates an elevated level of statistical significance, allowing us to reject the null hypothesis that the correlation matrix is an identity matrix. In other words, the variables measuring various aspects of the marketing mix, such as perceptions of product, price, distribution, promotion, and personnel are sufficiently intercorrelated to justify the assumption of an underlying latent factor structure. This analysis is crucial for the methodological validity of subsequent procedures, as it confirms the foundational assumption required for conducting factor analysis.

TABLE 5 Kaiser-Meyer-Olkin test.

Measurement Items	Measure of sampling adequacy (MSA)
Overall MSA	0.926
Product 1	0.924
Product 2	0.925
Product 3	0.913
Product 4	0.904
Price 1	0.939
Price 2	0.936
Price 3	0.959
Price 4	0.960
Distribution 1	0.907
Distribution 2	0.896
Distribution 3	0.906
Distribution 4	0.904
Promotion 1	0.951
Promotion 2	0.926
Promotion 3	0.939
People 1	0.944
People 2	0.937
People 3	0.918
People 4	0.916

TABLE 6 Bartlett's test of sphericity.

χ^2	df	p
11777.715	171	<.001

4.2 Exploratory factor analysis (EFA)

The core findings of the factor analysis are presented in the factor loading table, which illustrates how variables cluster together based on shared variance, revealing the underlying latent factors (Table 7). Using Promax rotation, which allows for correlations among factors, three distinct factors were extracted. The first groups variables related to personnel, store appearance, and promotional activities; the second includes items connected to pricing; and the third captures those measuring product quality and assortment. A loading threshold of 0.40 was applied for interpretative clarity, and all variables loaded cleanly onto one of the three factors. These exploratory results suggest three broader groupings among the observed items: (1) service and ambient impression, combining personnel, promotion, and aspects of distribution; (2) price; and (3) product. The EFA therefore indicates that some of the theoretically distinct marketing mix dimensions may overlap empirically. However, because EFA is exploratory in nature, this three-factor solution was subsequently evaluated against the theoretically specified five-factor structure using CFA before selecting the measurement structure for the cross-national comparisons.

Although the measurement instrument was designed according to the five dimensions of the marketing mix, the factor analysis extracted only three latent factors. This exploratory pattern suggests potential empirical overlap among promotion, personnel, and aspects of the store environment, rather than demonstrating that respondents necessarily perceive them as a single construct. Such integration may be particularly relevant in emerging-market retail contexts, where interpersonal service interactions and promotional activities have been shown to play an important role in shaping consumer perceptions and purchasing behavior (Mondir et al., 2023; Mushtaq and Salar, 2022; Sirajuddin et al., 2023).

The factor characteristics present the eigenvalues and the proportion of explained variance for each of the three extracted factors (Table 8). Together, the three extracted factors account for 54.4% of the total variance. This level of explained variance can be considered adequate for social science research, where

TABLE 7 Pattern matrix: factor loadings after promax rotation.

Measurement Items	Factor 1	Factor 2	Factor 3	Uniqueness
People 2	0.882			0.349
People 1	0.747			0.420
People 4	0.734			0.316
Distribution 4	0.712			0.498
People 3	0.662			0.398
Distribution 3	0.646			0.569
Promotion 2	0.498			0.487
Promotion 1	0.460			0.565
Promotion 3	0.447			0.591
Price 4		0.762		0.376
Price 2		0.750		0.388
Price 1		0.748		0.316
Distribution 1		0.557		0.530
Price 3		0.553		0.729
Distribution 2		0.537		0.575
Product 4			0.749	0.407
Product 3			0.743	0.379
Product 2			0.697	0.351
Product 1			0.652	0.428

Applied rotation method is promax.

TABLE 8 Factor characteristics: eigenvalues and explained variance.

Factor		Unrotated solution			Rotated solution		
	Eigenvalues	S	P	C	S	P	C
Factor 1	9.063	8.624	0.454	0.454	4.387	0.231	0.231
Factor 2	1.386	0.974	0.051	0.505	3.411	0.180	0.410
Factor 3	1.198	0.730	0.038	0.544	2.531	0.133	0.544

S, SumSq. loadings; P, proportion var.; C, cumulative.

factor solutions explaining approximately 50% or more of the variance are commonly regarded as acceptable (Hair et al., 2019). The largest contribution comes from the first factor (23.1%), followed by the price factor (18.0%) and the product factor (13.3%). These findings indicate that the extracted factors capture a substantial proportion of the variance in the observed variables.

After the identification of three latent factors, Table 9 presents their intercorrelations. The strongest correlation was observed between Factor 1 and Factor 2 ($r = 0.730$), while the correlations between the other factor pairs were 0.628 and 0.642. These values indicate substantial intercorrelations among the three exploratory factors, suggesting empirical overlap among different aspects of the marketing mix. Such interrelationships further justify the use of Promax rotation, which allows factors to be correlated. In the context of this research, these correlations indicate that the exploratory factors are related rather than statistically independent; however, the subsequent CFA provides the basis for determining whether the theoretically specified five-dimensional structure should be retained.

4.3 Confirmatory factor analysis and measurement invariance

Following the exploratory analysis, confirmatory factor analysis (CFA) was conducted to evaluate the theoretically specified five-factor measurement model comprising product, price, distribution, promotion, and people. The five-factor model yielded $\chi^2(142) = 1236.59$, CFI = 0.906, TLI = 0.887, RMSEA = 0.088, and SRMR = 0.045. Standardized factor loadings ranged from 0.514 to 0.897. Although the fit indices did not uniformly indicate optimal model fit, the five-factor model provided a substantially better representation of the data than the alternative three-factor model suggested by the exploratory factor analysis. The three-factor model yielded $\chi^2(149) = 1958.79$, CFI = 0.845, TLI = 0.823, RMSEA = 0.111, and SRMR = 0.059. These findings support retaining the theoretically specified five marketing mix dimensions for the subsequent hypothesis-testing analyses, while the three-factor EFA solution is interpreted as an exploratory indication of overlap among some dimensions rather than as a replacement measurement structure.

Construct reliability and convergent validity were subsequently assessed (Table 10) for the retained five-factor CFA model using composite reliability (CR) and average variance extracted (AVE). Product showed CR = 0.861 and AVE = 0.609, Price CR = 0.839 and AVE = 0.574, Distribution CR = 0.805 and AVE = 0.507, Promotion CR = 0.835 and AVE = 0.628, and People CR = 0.897 and AVE = 0.685. All CR values exceeded the recommended threshold of 0.70, indicating satisfactory construct reliability, while all AVE values exceeded the 0.50 benchmark, supporting convergent validity of the five retained constructs (Fornell and Larcker, 1981; Hair et al., 2019). These results provide additional support for retaining the theoretically specified five-factor measurement structure for subsequent cross-national analyses.

Given that the primary objective of the study was to compare consumer perceptions between Croatia and Tanzania, measurement invariance of the five-factor model was subsequently examined using multi-group CFA (Table 11). Configural, metric, and scalar invariance models were estimated sequentially. The configural model yielded $\chi^2(284) = 1484.07$, CFI = 0.894, TLI = 0.873, RMSEA = 0.065, and SRMR = 0.053. Although the CFI and TLI indicated some degree of model misfit, the RMSEA and SRMR indicated an acceptable approximation, and the same five-factor structure could be estimated in both national samples.

Constraining factor loadings to equality across countries produced the metric invariance model, $\chi^2(298) = 1523.67$, CFI = 0.892, TLI = 0.876, RMSEA = 0.065, and SRMR = 0.054. Relative to the configural model, the changes were small (ΔCFI = −0.002, ΔRMSEA = −0.001, ΔSRMR < 0.001). The scalar invariance model, in which both factor loadings and item intercepts were constrained across groups, yielded $\chi^2(312) = 1612.58$, CFI = 0.886, TLI = 0.875, RMSEA = 0.065, and SRMR = 0.054. Again, the deterioration in approximate fit was limited (ΔCFI = −0.007, ΔRMSEA < 0.001, ΔSRMR < 0.001). According to commonly applied measurement invariance criteria (Chen, 2007), these changes remain within recommended limits. The results therefore provide support for metric and scalar invariance of the five-factor measurement structure across the Croatian and Tanzanian samples, supporting subsequent cross-national comparisons of the five marketing mix dimensions.

TABLE 9 Factor correlation matrix.

Factor	Factor 1	Factor 2	Factor 3
Factor 1	1.000	0.730	0.628
Factor 2	0.730	1.000	0.642
Factor 3	0.628	0.642	1.000

TABLE 10 Construct reliability and convergent validity of the five-factor CFA model.

Construct	CR	AVE
Product	0.861	0.609
Price	0.839	0.574
Distribution	0.805	0.507
Promotion	0.835	0.628
People	0.897	0.685

CR, composite reliability; AVE, average variance extracted.

4.4 Multivariate analysis of variance (MANOVA)

Because the multi-group CFA provided support for scalar measurement invariance across Croatia and Tanzania, cross-national comparisons of the five theoretically specified marketing mix dimensions were retained for the subsequent analyses. To examine whether there are statistically significant differences in the perception of marketing mix elements between Croatia and Tanzania, a multivariate analysis of variance (MANOVA) was conducted. Pillai's Trace was selected due to its robustness to potential deviations from normality and unequal variances. Results in Table 12 indicated a statistically significant effect of the "country" variable on the combined set of the five marketing mix dimensions (Pillai's Trace = 0.125, F (5,985) = 28.150, $p < .001$). This outcome suggests that there is a significant overall difference between respondents from Croatia and Tanzania in their perception of marketing mix elements. In other words, at least one of the five components, product, price, distribution, promotion, or personnel, is perceived differently between the two countries. These findings support Hypothesis H1, which proposed the existence of overall perceptual differences in marketing mix elements across national contexts. Based on this result, it is methodologically justified to proceed with univariate analyses (ANOVA) for each dimension individually, to determine which specific components contribute to the observed differences.

The analysis of variance for the "product" dimension (Table 13) revealed a statistically significant difference between Croatia and Tanzania in how consumers perceive supermarket product offerings (F (1,989) = 29.507, $p < .001$). This dimension captures perceptions of product quality and assortment breadth.

TABLE 11 Confirmatory factor analysis and measurement invariance across countries.

Model	χ^2	df	CFI	TLI	RMSEA	SRMR	ΔCFI	ΔRMSEA	ΔSRMR
Five-factor CFA	1236.59	142	0.906	0.887	0.088	0.045	–	–	–
Three-factor CFA	1958.79	149	0.845	0.823	0.111	0.059	–	–	–
Configural invariance	1484.07	284	0.894	0.873	0.065	0.053	–	–	–
Metric invariance	1523.67	298	0.892	0.876	0.065	0.054	−0.002	−0.001	<0.001
Scalar invariance	1612.58	312	0.886	0.875	0.065	0.054	−0.007	<0.001	<0.001

Changes in fit indices for metric invariance are calculated relative to the configural model, whereas changes for scalar invariance are calculated relative to the metric model.

TABLE 12 Multivariate analysis of variance (MANOVA) – Pillai test.

Cases	df	Approx. F	TracePillai	Num df	Den df	*p*
(Intercept)	1	3953.161	0.953	5	985.000	<.001
Country	1	28.150	0.125	5	985.000	<.001
Residuals	989					

TABLE 13 Analysis of variance for the product dimension.

Cases	Sum of squares	df	Mean square	*F*	*p*
(Intercept)	12842.640	1	12842.640	13214.315	<.001
Country	28.677	1	28.677	29.507	<.001
Residuals	961.183	989	0.972		

TABLE 14 Test analysis of variance for the price dimension.

Cases	Sum of squares	df	Mean square	*F*	*p*
(Intercept)	12308.331	1	12308.331	13460.013	<.001
Country	23.541	1	23.541	25.743	<.001
Residuals	904.378	989	0.914		

TABLE 15 Analysis of variance for the distribution dimension.

Cases	Sum of squares	df	Mean square	*F*	*p*
(Intercept)	11300.769	1	11300.769	12732.863	<.001
Country	38.841	1	38.841	43.763	<.001
Residuals	877.765	989	0.888		

TABLE 16 Analysis of variance for the promotion dimension.

Cases	Sum of squares	df	Mean square	*F*	*p*
(Intercept)	11033.767	1	11033.767	12409.670	<.001
Country	115.968	1	115.968	130.429	<.001
Residuals	879.346	989	0.889		

The results show that Croatian and Tanzanian consumers evaluate supermarket products differently. The present analysis establishes the existence of a cross-national difference in product perceptions but does not identify the specific cultural, economic, or market mechanisms responsible for this difference. The findings clearly support Hypothesis H2, as Tanzanian consumers reported significantly more positive perceptions of product quality and variety than Croatian consumers. These insights may have important implications for assortment planning and product offering strategies in each market.

The analysis for the "price" component (Table 14) also indicated a statistically significant difference in how consumers in Croatia and Tanzania perceive this element of marketing strategy ($F\ (1,989) = 25.743,\ p < .001$). This dimension reflects attitudes toward pricing, store-brand preferences, and the importance of discounts. The findings indicate that Croatian and Tanzanian consumers differ significantly in their perceptions of pricing strategies. However, the present analysis does not establish whether this difference is attributable to economic conditions, income levels, cultural characteristics, price sensitivity, or other contextual factors. The results confirm Hypothesis H3, as Tanzanian consumers reported significantly more positive perceptions of price accessibility and promotional offers than Croatian consumers. A successful pricing strategy must therefore be carefully aligned with local economic realities and consumer expectations.

The ANOVA results for the "distribution" variable (Table 15) also reveal significant differences between respondents in Croatia and Tanzania ($F\ (1,989) = 43.763,\ p < .001$). This component of the marketing mix refers to physical accessibility (location, distance) as well as the visual and functional layout of the shopping environment. The analysis confirms a cross-national difference in perceptions of distribution-related attributes; however, the specific infrastructural, behavioral, economic, or cultural factors underlying this difference were not directly examined in the present study. These results confirm Hypothesis H4, as Tanzanian consumers reported significantly higher perceptions of the importance of supermarket accessibility and layout than Croatian consumers.

Findings for the "promotion" variable (Table 16) show a particularly elevated level of statistical significance in perception differences between respondents from the two countries ($F\ (1,989) = 130.429,\ p < .001$). This dimension includes traditional and digital advertising as well as sales promotions such as samples, coupons, sweepstakes, and loyalty cards. The high F-statistic indicates that promotion is one of the most differentiated dimensions in this study. The analysis demonstrates a pronounced cross-national difference in promotion perceptions, but it does not determine whether this difference is associated with media consumption habits, digital access, cultural characteristics, market exposure, or other contextual factors. The result strongly supports Hypothesis H5, as promotional activities were perceived significantly more positively by Tanzanian consumers than by Croatian consumers. Promotion therefore emerges as an important dimension to consider when adapting supermarket marketing communication to different national market contexts.

A significant difference in the perception of personnel professionalism and behavior was also confirmed through the analysis of the "people" variable (Table 17), an extension of the traditional 4P marketing mix ($F\ (1,989) = 71.195,\ p < .001$). This dimension includes expertise, both verbal and non-verbal

communication, availability, and the friendliness of sales personnel.

The results clearly indicate a statistically significant difference in how consumers in the two countries perceive the human factor. The present analysis establishes a significant cross-national difference in perceptions of personnel but does not identify the cultural, communicational, or other contextual mechanisms underlying this difference. These findings support Hypothesis H6, as the professionalism and friendliness of supermarket personnel were perceived significantly more positively by Tanzanian consumers than by Croatian consumers. From a managerial perspective, the findings indicate that personnel-related strategies should take into account the specific expectations observed within each national market.

4.5 Independent samples t-test and descriptive statistics

Table 18 presents the results of a statistical comparison between Croatia and Tanzania across all five elements of the marketing mix: product, price, distribution, promotion, and people (personnel). For each of the variables, the t-values are notably high (e.g., t = −11.421 for the promotion dimension), and all *p*-values are below the.001 threshold, indicating that the observed differences between the two groups are statistically significant across all components. In other words, the findings provide compelling evidence that consumer perceptions of these marketing mix elements differ meaningfully between the two countries. To complement the statistical significance, Cohen's d was calculated to assess the practical relevance of these differences. While the values are negative, reflecting higher average scores among Tanzanian respondents, the focus lies on the magnitude of the effect. The absolute effect sizes ranged from 0.329 to 0.739, indicating effects ranging from small-to-moderate to moderate-to-large in magnitude, with the largest differences observed for promotion (d = −0.739) and people (d = −0.546). Taken together, these findings offer robust support for Hypothesis H1, which proposed the existence of significant differences in the perception of marketing mix elements between the Croatian and Tanzanian markets. The results underscore the importance of recognizing differences in consumer expectations across national market contexts, while the specific cultural, economic, or other contextual mechanisms underlying these differences cannot be determined from the present analysis.

Table 19 presents the descriptive statistics, specifically, the mean values of consumer perceptions for each marketing mix element, calculated separately for Croatia and Tanzania. These figures offer a clear direct insight into the differences that were previously confirmed as statistically significant through inferential testing. The highest disparity appears in the promotion dimension, where Tanzanian respondents rate promotional activities significantly more favorably than their Croatian counterparts. Similarly, notable differences are observed in the people dimension, with Tanzanian consumers perceiving retail personnel as more professional and approachable. In the product and price categories, Tanzanian shoppers also express more positive evaluations, indicating a higher level of satisfaction with product offerings and pricing strategies in their local market. While the difference in the distribution dimension is smaller, it still reflects a greater appreciation among Tanzanian consumers for store location and accessibility. These descriptive results not only align with the findings of earlier statistical tests (e.g., ANOVA) but also provide meaningful qualitative insight into which country is perceived more positively in relation to each specific marketing element. The consistency of higher scores in Tanzania underscores the broader trend identified throughout the analysis and confirms hypotheses H2 through H6, each of which anticipated significant perceptual differences across the observed dimensions.

TABLE 17 Analysis of variance for the people (personnel) dimension.

Cases	Sum of squares	df	Mean square	*F*	*p*
(Intercept)	12686.522	1	12686.522	13532.518	<.001
Country	66.744	1	66.744	71.195	<.001
Residuals	927.172	989	0.937		

5 Discussion

The findings presented in the previous section provide a clear overview of how consumers in Croatia and Tanzania perceive the key elements of the marketing mix. The study makes several contributions to the marketing and consumer behavior literature. First, it provides empirical evidence of significant cross-national differences in perceptions of product, price, distribution, promotion, and personnel. Second, the exploratory

TABLE 18 Independent samples t-test results for marketing mix dimensions.

Dimension	*t*	df	*p*	Cohen's *d*	SE Cohen's *d*
Product	−5.432	989	<.001[a]	−0.352	0.066
Price	−5.074	989	<.001[a]	−0.329	0.066
Distribution	−6.615	989	<.001	−0.428	0.066
Promotion	−11.421	989	<.001	−0.739	0.070
People	−8.438	989	<.001[a]	−0.546	0.068

Student's t-test.
[a]Brown-Forsythe test is significant ($p < .05$), suggesting a violation of the equal variance assumption.

TABLE 19 Mean scores of marketing mix perceptions by country.

Dimension	Group	*N*	Mean	SD	SE	Coefficient of variation
Product	Croatia	400	3.393	1.031	0.052	0.304
	Tanzania	591	3.740	0.954	0.039	0.255
Price	Croatia	400	3.337	0.987	0.049	0.296
	Tanzania	591	3.651	0.935	0.038	0.256
Distribution	Croatia	400	3.136	0.888	0.044	0.283
	Tanzania	591	3.540	0.977	0.040	0.276
Promotion	Croatia	400	2.921	0.882	0.044	0.302
	Tanzania	591	3.618	0.982	0.040	0.271
People	Croatia	400	3.263	0.986	0.049	0.302
	Tanzania	591	3.791	0.956	0.039	0.252

factor analysis indicates some empirical overlap among theoretically distinct marketing mix dimensions, while the subsequent CFA provides stronger support for retaining the theoretically specified five-factor structure. Third, the study contributes to international retail marketing research by comparing a European and an African retail market, a comparison that remains relatively underexplored in the existing literature. These findings should primarily be interpreted as differences between the two national market contexts. Cultural, economic, and institutional characteristics may provide possible theoretical explanations for the observed patterns, but the present study did not directly measure these mechanisms. Accordingly, the discussion below relates the observed cross-national differences to previous research without treating cultural factors as empirically established causes. From a managerial perspective, the findings indicate that standardized marketing approaches may not generate equivalent consumer perceptions across different national markets and that retailers should consider market-specific consumer expectations when designing their strategies.

Tanzanian consumers consistently reported higher satisfaction across all five dimensions, which suggests that expectations and benchmarks for retail performance differ between emerging and more mature European markets (Kadigi et al., 2024).

The relationship between the exploratory and confirmatory factor analyses provides an important methodological insight. Classical marketing frameworks conceptualize product, price, place, promotion, and people as theoretically distinct marketing instruments (Booms and Bitner, 1981; McCarthy, 1960). In the present study, the EFA identified three broader dimensions, suggesting empirical overlap among several marketing mix elements, particularly personnel, promotion, and aspects of the store environment. However, the subsequent CFA showed that the theoretically specified five-factor model provided a substantially better representation of the data than the alternative three-factor model. Accordingly, the EFA findings should not be interpreted as evidence that the traditional five-dimensional structure should be replaced. Rather, they suggest that some theoretically distinct dimensions may overlap in consumers' evaluations while remaining distinguishable constructs within the confirmatory measurement model. The study therefore does not reject the traditional marketing mix framework but provides evidence that its theoretically distinct components may exhibit some empirical overlap in consumer perceptions. This distinction supports the use of the original five marketing mix dimensions in the subsequent cross-national analyses and illustrates the complementary roles of exploratory and confirmatory factor analysis.

The observed cross-national patterns can be considered in relation to previous research, while recognizing that the explanatory mechanisms were not directly measured in the present study. Prior studies have reported differences in the role of interpersonal service, promotional activities, and functional product attributes across different retail environments. Marius et al. (2020) identified differences in consumer satisfaction and purchase intentions across national contexts, while Sirajuddin et al. (2023) and Mondir et al. (2023) emphasized the relevance of promotional and marketing mix elements in shaping consumer evaluations. Research from Tanzania has also highlighted the importance of relationship quality and interpersonal trust in consumer evaluations (Tegambwage and Kasoga, 2022). In European retail contexts, previous research has emphasized product quality, price, brand-related attributes, and consumer segmentation as relevant aspects of consumer evaluation (Pavlić et al., 2020; Swoboda and Batton, 2020). Furthermore, previous research has demonstrated the relevance of promotional stimuli for consumer purchase intentions and decisions (Suyanto and Dewi, 2023). Taken together, these studies provide useful contextual perspectives for interpreting the differences observed between the Croatian and Tanzanian samples. However, the present study extends this literature primarily by demonstrating statistically significant cross-national differences in perceptions of the marketing mix rather than by identifying their cultural causes. Because cultural values, interpersonal orientation, economic conditions, and related contextual mechanisms were not directly measured, the present findings cannot establish that these factors caused the observed differences. They should therefore be regarded as theoretically informed contextual explanations that require direct empirical examination in future research.

Promotion emerged as the most strongly differentiated dimension between the two national samples, with Tanzanian

respondents reporting significantly more favorable perceptions of supermarket promotional activities. This result is consistent with previous research showing that promotional activities can play an important role in consumer engagement and purchasing behavior in Tanzania (Mrisho et al., 2023). However, the present study did not measure emotional engagement, advertising exposure, market saturation, or promotional credibility. Consequently, these factors should be regarded as possible explanations suggested by previous literature rather than as mechanisms demonstrated by the present analysis. The empirical conclusion is therefore limited to the finding that perceptions of promotional activities differed substantially between the Croatian and Tanzanian respondents.

The personnel dimension also revealed marked differences, with Tanzanian consumers expressing higher levels of satisfaction regarding the professionalism and friendliness of employees. Previous research provides a possible contextual perspective for interpreting this finding. Truong (2025), for example, demonstrates that service-related evaluations, which involve personal interactions and subjective experiences, tend to generate stronger emotional responses than product-related evaluations and that cultural background can moderate patterns of emotional expression. These findings suggest that interpersonal aspects of service may be interpreted differently across consumer contexts. However, the present study did not directly measure cultural orientation, emotional responses, or communication preferences. Therefore, although the findings of Truong (2025) provide a relevant theoretical context, the higher personnel evaluations observed among Tanzanian respondents cannot be empirically attributed to cultural differences on the basis of the present data.

Perceptions of products and pricing also differed significantly between the two national samples, although the effect sizes were smaller than for promotion and personnel. Tanzanian respondents reported more favorable evaluations of both dimensions. Previous international research has shown that evaluations of product attributes and prices may vary across markets with different economic and competitive characteristics (Davvetas et al., 2023). Nevertheless, the present study did not directly examine market competition, purchasing power, price expectations, or product availability as explanatory variables. These factors therefore represent possible contextual interpretations rather than empirically established explanations for the observed country differences.

A significant cross-national difference was also observed for distribution, encompassing supermarket location, accessibility, appearance, and organization. Previous research indicates that accessibility and retail service characteristics can influence consumer evaluations and repeat-purchase intentions (Sirican and Wangbenmad, 2025). However, the present study did not measure urban structure, transportation availability, or other infrastructural conditions. Therefore, these factors cannot be identified as direct explanations for the observed difference between Croatian and Tanzanian respondents.

The combined EFA and CFA findings provide a more nuanced picture of the measurement structure. While the exploratory analysis suggested three broader groupings and therefore indicated overlap among several marketing mix elements, the confirmatory analysis showed that the theoretically specified five-factor model represented the data substantially better than the three-factor alternative. The five dimensions were therefore retained for the cross-national hypothesis tests. The exploratory overlap remains informative, but it should not be interpreted as evidence that the traditional five-dimensional measurement structure was rejected.

Supermarkets aiming to enhance customer satisfaction and loyalty should carefully consider market-specific consumer perceptions and adapt their strategies accordingly, particularly in areas such as promotion and employee interaction. Beyond the retail sector, these findings have broader implications for international marketing by demonstrating that the same marketing mix dimensions may be evaluated differently across national market contexts. The findings therefore support a context-sensitive approach to international retail strategy. Cultural values, economic conditions, and other contextual characteristics may contribute to these differences, but their specific explanatory roles require direct empirical examination in future research.

5.1 Theoretical implication

This study contributes to the theoretical understanding of marketing mix perception in supermarket retailing by providing evidence from two distinct national market contexts, Croatia and Tanzania. The results demonstrate significant cross-national differences across all five examined marketing mix dimensions. Importantly, the combination of exploratory and confirmatory factor analysis provides a nuanced contribution to the measurement of the marketing mix. Although the EFA suggested empirical overlap among several dimensions, the CFA showed that the theoretically specified five-factor model provided a substantially better representation of the data than the alternative three-factor model. The findings therefore support retaining product, price, distribution, promotion, and personnel as theoretically distinct constructs while recognizing that some dimensions may overlap in consumers' evaluations. Furthermore, the establishment of metric and scalar measurement invariance provides evidence that the five-factor structure operates with sufficient comparability across the Croatian and Tanzanian samples to support cross-national comparisons. The study therefore extends the application of the marketing mix framework to two different national retail environments. Cultural and socio-economic theories may offer possible explanations for the observed differences, but because these mechanisms were not directly measured, the present study does not establish culture as their causal source. Future research can extend these findings by incorporating direct measures of cultural values and other contextual variables.

5.2 Practical implication

The results provide practical guidance for supermarket retailers operating in different national markets. Tanzanian respondents reported more favorable perceptions across all five marketing mix dimensions, with the largest differences observed

for promotion and personnel. These findings indicate that retailers should not assume that identical marketing activities will be evaluated similarly across national markets. In Tanzania, the particularly favorable evaluations of promotion and personnel suggest that these dimensions deserve close managerial attention, whereas the comparatively lower evaluations observed in Croatia indicate potential opportunities to strengthen consumer perceptions of promotional communication and personnel-related service. Product, price, and distribution should likewise be adapted on the basis of market-specific consumer evaluations. Because the study did not directly measure the cultural or economic mechanisms underlying these differences, managerial adaptations should be based primarily on observed consumer preferences and local market research rather than on assumptions about national culture.

5.3 Limitation and direction for future research

Although this study provides valuable insights, several limitations should be acknowledged.

The sampling procedure relied on non-probability convenience sampling through social media platforms, meaning that respondents self-selected into the study. As a result, the sample may not fully represent the broader population of supermarket consumers, especially individuals who are less active online or who do not use social media. Therefore, caution is required when generalizing the findings beyond the digitally engaged segment of the population. While the research encompasses various types of retail centers, it does not distinguish between them (e.g., hypermarkets, discount stores, shopping malls). Future research could focus on different retail formats to explore whether perception patterns vary across retail types. Even though a two-country comparison was conducted, the data were collected through self-reported responses at a single point in time, which may introduce response bias. Longitudinal research designs could provide deeper insights into how perceptions evolve over time. The study is based solely on quantitative methods. An additional limitation is that cultural dimensions were not directly measured at the individual level. Consequently, the observed differences should be interpreted as cross-national differences between the Croatian and Tanzanian samples rather than as direct effects of culture. The cultural frameworks discussed in the study provide theoretically informed contextual interpretations but were not empirically tested as explanatory mechanisms. Future studies should incorporate validated measures of cultural values and relevant economic and market characteristics to determine which factors account for the observed cross-national differences. Qualitative approaches, including focus groups and in-depth interviews, could further contribute to understanding the mechanisms underlying these differences. Future research could expand the analysis by including additional variables such as the impact of digital marketing, sustainability initiatives, or brand trust, to provide a more comprehensive view of the factors influencing consumer satisfaction in diverse retail environments.

6 Conclusion

This study provides evidence of significant cross-national differences in consumer perceptions of supermarket marketing mix elements between Croatia and Tanzania. Differences were identified across product, price, distribution, promotion, and personnel, with the largest disparities observed for promotion and personnel. The measurement analyses further showed that, although the exploratory factor analysis suggested overlap among several marketing dimensions, the theoretically specified five-factor model provided a substantially better fit than the alternative three-factor model in the confirmatory analysis. Moreover, the establishment of metric and scalar measurement invariance supported the comparability of the five marketing mix dimensions across the two national samples and provided a methodological basis for the subsequent cross-national comparisons.

The findings emphasize that supermarket marketing strategies should be responsive to differences in consumer perceptions across national markets. However, the study does not establish that the observed differences are caused by cultural factors, as cultural dimensions were not directly measured. Cultural and socio-economic frameworks can therefore be used only as possible contextual explanations for the observed patterns. Future research should directly measure cultural values, economic conditions, and other contextual characteristics to determine the mechanisms underlying cross-national differences in supermarket consumer perceptions. Overall, the study contributes to international retail marketing research by demonstrating both the relevance of the five-dimensional marketing mix framework and the importance of establishing measurement comparability before interpreting differences between national consumer groups.

Data availability statement

The original contributions presented in the study are included in the article/Supplementary Material, further inquiries can be directed to the corresponding author.

Ethics statement

Written informed consent was obtained from the individual(s) for the publication of any potentially identifiable images or data included in this article.

Author contributions

MŠ: Writing – original draft, Writing – review & editing. RS: Writing – review & editing. GG: Writing – review & editing, Writing – original draft. JK: Writing – review & editing.

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