

Research article

MARKETING COMMUNICATIONS IN THE ERA OF DIGITAL TRANSFORMATION

Volodymyr Nesterenko, Radoslaw Miskiewicz, and Rafis Abazov

Abstract. The advent of digital transformation has revolutionized the marketing landscape, presenting both challenges and opportunities for businesses. This scientific paper delves into the realm of marketing communications in the context of this transformative era. The primary objective is to examine the profound impact of various marketing communication tools on consumer perception and response to advertising messages, direct marketing, electronic communication, and other innovative marketing techniques. Utilizing the ANOVA (analysis of variance) statistical evaluation method, comprehensive empirical research data are analysed to uncover key trends and insights. The findings shed light on the dynamic market developments characterized by a notable decline in the effectiveness of traditional mass marketing approaches. Instead, there is a discernible shift towards more specialized marketing strategies, bolstered by the rapid advancement of computer and information technologies. Moreover, this study confirms a hypothesis pertaining to the efficacy of Internet advertising in relation to different age groups of customers. This confirmation underscores the importance of leveraging digital platforms and channels to engage specific target audiences effectively. The practical significance of this research lies in its potential to guide marketers in optimizing their marketing budgets, identifying the most impactful communication channels, and discerning statistically significant variations in consumer responses to diverse marketing communication tools. By understanding these nuances, marketers can design more targeted and persuasive marketing campaigns, leading to enhanced customer engagement and improved business outcomes.

Keywords: marketing communication; artificial intelligence; advertisements; values; trends; common value transformation.

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1. Introduction

In today's rapidly evolving business landscape, the relentless pace of digital transformation has completely revolutionized the way organizations function, particularly in the realm of marketing communications [1-3]. With consumers increasingly reliant on digital platforms for obtaining information, seeking entertainment, and engaging in social interactions, businesses face the imperative of adapting their communication strategies to effectively connect with and captivate their target audiences [4]. Recognizing and leveraging the intricacies and possibilities brought about by digital transformation is paramount for marketers to not only stay competitive but also to achieve resounding success in the current marketplace. Understanding the dynamics of digital transformation is crucial for developing effective marketing strategies as traditional methods become less effective [5]. Embracing the potential of digital platforms and communication channels empowers businesses to forge strong connections with consumers, enhance brand visibility, and foster meaningful customer engagement [6]. Furthermore, marketing communications can play a vital role in raising awareness about the Sustainable Development Goals (SDGs) among the general public, businesses, and policymakers [6-9]. Through diverse channels like advertising, social media, and public relations, marketing communications can educate people about the significance of the goals and the necessary actions to accomplish them [10-16]. Furthermore, the integration of emerging technologies into marketing communications has undergone a remarkable transformation in developing countries. This integration has not only created novel opportunities for market access, improved targeting capabilities, and increased operational efficiency but has also empowered entrepreneurs [17-20]. By embracing technologies like Artificial Intelligence (AI) [21], Blockchain [20], and Cognitive Technologies [23-28], developing nations can effectively tap into the potential of marketing communications to drive economic growth, foster social development, and promote sustainability [29-32].

Numerous researchers have delved into the realm of digital marketing communication (DMC), offering valuable insights into its key challenges and proposing effective methods for managerial decision-making [33-35]. V. Shankar et al. have analysed digital marketing communication (DMC), highlighting key challenges and proposing methods for effective managerial decision-making [36]. S. U. Reman et al. [37] have emphasized the increasing significance of social media integration in marketing communications and its impact on overall brand image and market success. Y. Bashirzadeh et al. [38] explored the use of innovative visual design elements in digital communication and investigated the negative impact of advertising clutter on communication effectiveness. E. Polat [39] has examined the influence of technology on digital marketing and provided insights into digital marketing practices in Asian countries. P. J Kitchen and M. E. Turki [40] have emphasized the importance of integrated marketing communication (IMC) and the need for strategic collaboration among stakeholders. M.A. Rahmawati and S.I. Afifi [41] has discussed the impact of digital technologies on radio as a form of mass media and the significance of integrated marketing communication in the digital environment.

Despite significant scientific achievements, some theoretical and applied problems, including significant differences in the perception of marketing tools by different age groups, remain unresolved. The lack of a comprehensive understanding of consumer attitudes towards different types of marketing communications predetermined the research relevance, aim, objectives, and

content. One of the important tasks of this study is to establish cause-and-effect relationships and identify patterns in assessing the effectiveness of advertising through marketing communications. The research aims at studying the effectiveness of various communication channels and determining the most effective channel of communication with consumers. To achieve these goals, ANOVA is used, which helps to reveal the effectiveness of marketing communication tools and to study the impact of qualitative factors on the dependent quantitative variables. The research hypotheses are tested.

The paper is structured into four main sections: the Literature Review analyses articles and studies by various authors on the effectiveness of marketing communications (MC) and their types; the Materials and Methods section describes the main input data for the study and the methodology used for the analysis; the Results section presents the calculation results, analysis outcomes, and confirmation of hypotheses; and the Discussion and Conclusion section provides a logical summary of the study, interprets the findings, compares them with literature, addresses limitations, and suggests future research directions in the field of marketing.

2. Literature Review

Marketing communication channels play a significant role in influencing consumers as they serve as a tool for enabling two-way communication between a company and its audience, providing essential information about new products or services. Different communication channels are employed to achieve diverse marketing goals, including boosting sales, attracting new customers, retaining existing ones, and increasing brand awareness. Consumers are exposed to a wide range of communication forms, such as online advertising (including search, banner, AI chatbots, SMM, social media advertising, and bloggers), personal selling, direct marketing, public relations (PR), and promotions, among others [42].

A study marketing communication [43], suggests the important of conducting surveys among the target audience to determine the level of brand awareness and the brand's image. Promotions are aimed at stimulating the sales of specific products or services, and they encompass various types, such as discounts, coupons, gifts, and drawings. The digitalization of marketing communication has brought about changes in these practices. In the article [9], the author highlights that the effectiveness of promotions is measured using diverse metrics, including increased sales, website traffic, registrations or subscriptions, and average purchase value, among others. E. Cagnago and N. Ariani [45] investigated the significance and effectiveness of integrated marketing communications for small and medium-sized businesses. The main hypothesis of the study posits that the proper implementation of integrated marketing communications can enhance communication between sellers and buyers, increase sales, and minimize the need for repeated product promotion. The study utilized a qualitative descriptive approach and a case study method to analyse the marketing communication strategies already implemented in pure milk MSMEs. Asrul A. et al. [46] examined the use of Instagram as a marketing communication tool in the online environment to engage potential consumers. The authors employed qualitative research methods. The outputs demonstrated that utilizing Instagram as a social network contributes to enhancing the functions of marketing communication and expanding its reach. Marketers need to develop a strategy for leveraging Instagram as a marketing communication tool to achieve their goals and target audiences. Thus, the study aimed at ascertaining the advantages of Instagram as a marketing communication tool

in approaching consumers and reaching the desired target audience. R. Pehlevi [47] crafted bibliometric analyses of scientific articles on integrated marketing communications and identified four primary trends: the integration of marketing communications with customer relationship management, the concept of added value in communication plans, the utilization of questionnaires as a data collection method, and an equal number of studies on integrated marketing communications in both developed and developing countries. D. Mulder [42] examined the history of marketing communication and emphasized the importance of studying this history to understand a new approach called integrated communication. It is noteworthy that with the emergence of technology and scientific research, marketing communication has become increasingly complex and has evolved into integrated communication. The author explored the different phases of marketing communication development from the early 1960s to the present day and concluded that integrated communication is vital for the overall success of an organization.

The issues of production management at different levels of management and management decision-making are also the subject of the scientific research. In this context, it is important to adhere to an integrated approach, which covers all areas of the enterprise's functioning, touching its strategies using marketing tools. Planning a set of marketing communications is one of the important stages of managing product promotion in the market. However, it is important to note that the implementation of strategies for the promotion of goods and services and the management of marketing communications cannot be considered separately since the result of the information exchange of the company under study depends on the interaction of the communication environment and management decisions. Therefore, it is important to ensure that these aspects of the company's activities are mutually consistent.

In general, the issues of planning and evaluating marketing communications are crucial for the process of making effective management decisions at the enterprise in the struggle for customer loyalty to the network and brand. In addition, the research of prominent scientists also focuses on methods of measuring the effectiveness of marketing communications. In particular, the problem of measuring the effectiveness of marketing activities is a key issue in addressing the effectiveness of marketing communications. Many scholars discuss how to determine the indicators of marketing communications success and how to measure them correctly. For example, E. Chaniago [43] and A. Hidayat [44] consider models of marketing communications effectiveness and point out that the success of marketing communications depends on increasing consumer awareness and understanding of the product. In addition, other studies focus on indicators for measuring the effectiveness of marketing communications, such as market share, sales growth, and increased customer loyalty. Overall, research in the field of marketing communications has become an important source of knowledge for companies and organizations in developing effective marketing and communications strategies. Studying the effectiveness of marketing communications allows businesses to understand how their efforts attract consumer attention and build brand awareness to help increase sales and gain market leadership.

Effective marketing promotion relies on the integration of communication and management subsystems, which work together to achieve goals and influence the response of the target audience. This ensures the efficiency of activities and impacts the overall performance of the enterprise. The success of product promotion is contingent on a well-thought-out, justified, and implemented promotion strategy that fosters the harmonious development of an enterprise. By

evaluating indicators based on different types of marketing communications, businesses can accurately assess their effectiveness and identify the most promising areas for growth. Streamlining these indicators enables companies to prioritize specific aspects of their marketing communications strategy, leading to more efficient resource allocation and cost-effective goal achievement. Moreover, it is appropriate to employ the latest technologies and interactive formats to engage younger audiences while using more traditional formats for older demographics. This approach enables enterprises to effectively capture the attention of different consumer groups and enhance the effectiveness of their marketing communication strategy [47].

In the retail industry, careful planning of marketing communications is vital to establish effective consumer communication and ensure sustained demand for products. To achieve this, communication activities should be phased, and the communication policy should be flexible, allowing adjustments as necessary. Successful communication requires periodic review and adjustment of the communication policy, elimination of ineffective promotional methods, and the organization of planned and consistent communication activities. Additionally, reallocating the promotion budget can optimize efficiency in communication activities [48].

Furthermore, conducting marketing channel research and analysing data through ANOVA enables businesses to understand customer needs and preferences, which serves as the foundation for developing products and services that meet those needs. These tools also help determine optimal pricing strategies and distribution channels, resulting in increased sales and profits [49, 50].

Based on the analysis conducted, the present study proposes the following hypotheses:

H1: Consumer reactions to different marketing communication tools, such as online advertising, outdoor advertising, direct marketing, social media, etc., have statistically significant differences in consumer perception.

H2: The effectiveness of online advertising has statistically significant differences in the perception of certain age groups.

3. Methods

The study utilized data collected through a survey conducted among GH customers, leveraging the database of this women's wear chain. The research was conducted from January 1, 2022, to December 31, 2022. The basic marketing channels selected for analysis included social media advertising, printed advertising materials, celebrity collaborations, and more. The collected data included the internet aspect of marketing communication, including texts generated with the assistance of Chat GPT artificial intelligence. The total number of respondents after analysing the answers was 200 individuals. The largest group of consumers, accounting for 36% (72 individuals), fell within the age range of 18-24 years (Table 1). This was followed by the age group of 25-34 years, comprising 29% (58 individuals). Consumers under 18 years old made up 18% (36 individuals), while the 35-45 age group represented 11% (22 individuals). The over 45 age group constituted 6% (12 individuals). The majority of the store's customers had high incomes, accounting for 71% of the respondents, while the remaining 29% were classified as

middle-income customers. Out of the 200 customers, 96% returned for subsequent purchases, while 4% did not. In terms of gender distribution among luxury clothing consumers, women dominated, accounting for 78.5% of the total number of buyers, while men accounted for 21.5%.

Table 1. Marketing communications by consumer age categories

Age	Internet	Billboards	Advertising at points of sale	Personal sales	Direct marketing	PR	Promotions
up to 18 years	12	2	6	4	8	1	3
18-24 years	31	2	12	6	9	8	4
25-34 years	34	3	4	5	4	3	5
35-45 years	6	1	1	6	3	3	2
more than 45 years	2	1	2	1	2	1	3

All respondents were divided into two customer groups within a store. The first group, which comprises 96% of the sample, consists of loyal customers referred to as "Special." These customers highly value the quality of service, actively engage with the store's promotions and events and are likely to become repeat customers. The second group, which makes up 4% of the sample, is labelled "Casual." These customers make a single purchase at the store and do not return. They exhibit limited interest in promotions and perceive prices as being too high. This group cannot be converted into regular customers and requires additional efforts to re-engage them.

Cronbach's alpha was calculated to assess the internal consistency and reliability of the survey instrument:

$$\alpha = \frac{K}{K-1} \left(1 - \frac{\sum_{i=1}^K \sigma_{Y_i}^2}{\sigma_X^2} \right) \quad (1)$$

where α – Cronbach's alpha; K – the number of measured components (in this case, 3); σ_X^2 – the variance of the overall test result; $\sigma_{Y_i}^2$ – the variance of the component for the current sample.

It provided a measure of the extent to which the items in the questionnaire consistently measured consumer perceptions. A Cronbach's alpha value of 0.68 was obtained, indicating satisfactory internal consistency. Cronbach's alpha was used to assess the internal consistency and reliability of the scaled assessment based on respondents' answers.

To test the selected hypotheses, ANOVA (analysis of variance) was employed as a robust statistical technique [51]. ANOVA allows for the examination of significant differences in consumer perception across a range of marketing communication tools (H1), as well as within specific age groups (H2). In conducting the ANOVA, the dependent variable was consumer perception, measured through survey responses. The independent variables were the different

marketing communication tools and age groups. The analysis involved calculating the sum of squares for each variable, determining the degrees of freedom, and estimating the F-statistic and associated p value. A significance level of $\alpha = 0.05$ was used to determine statistical significance [52, 53].

To assess the normality of the data distribution, the Shapiro–Wilk test was employed:

$$W = \frac{(\sum_{t=2}^n a_t y_t)^2}{\sum_{t=1}^n (x_t - y_{avg})^2}, \quad (2)$$

where: W is the value of the Shapiro-Wilk coefficient; a_t is the table coefficients; y_t is a sample value; n is the number of observations.

This test was used to determine whether the data collected from the study followed a normal distribution. Additionally, to examine the equality of variances between two or more groups of data, Levene’s test, which is based on the F test of sample variance, was applied. This test allowed for the assessment of whether there were statistically significant differences in the variances across the different groups. By examining the homogeneity of variances, Levene’s test provided valuable information to ensure the validity of subsequent statistical analyses [54].

To investigate specific pairwise comparisons between marketing communication tools or age groups, additional post hoc tests were conducted when ANOVA revealed significant overall differences. In this study, Tukey’s test was employed as a post hoc test [55, 56]. The purpose of these post hoc tests was to gain further insights into which specific groups or tools differed significantly from each other in terms of consumer perception. To analyse the significance of differences in the levels of the factors in this table, Eviews, data analysis, and one-factor analysis of variance (ANOVA) were used.

4. Results and Discussion

The Shapiro-Wilk test revealed a negligible probability of the samples following a normal distribution, with a p-value of 0.00535. Therefore, it can be concluded that the data does not exhibit a normal distribution.

Table 2. The outputs of Shapiro–Wilk test

The Shapiro–Wilk test	
Calculated W-value of the Shapiro-Wilk test	0.578
Calculated p-value of the Shapiro-Wilk test	0.00
Critical value of W for a significance level of 5%	0.938

In addition, the Levene test was performed between the samples. It showed that the variance between the samples is homogeneous with sufficient probability, which indicates a uniform distribution of respondents' estimates in the samples.

The findings related to the impact of marketing tools are presented in Table 3. The first marketing tool examined is "Internet," which attracted a significant number of customers, with a total of 85 individuals participating in this channel. The total amount associated with this tool

sums up to 85, with an average amount of 17. The dispersion value of 214 suggests a wide range of amounts reported by customers within each age group, indicating potential variations in their spending behaviour. Moving on to “Printed Advertisements,” this marketing tool attracted a relatively lower number of customers, with only 9 individuals participating. Similar to the previous tool, these customers were also categorized into five different age groups. The total amount associated with printed advertisements is 9, resulting in an average amount of 1.8. The low dispersion value of 0.7 suggests a relatively consistent spending pattern among customers within each age group. The analysis also considered the impact of “billboards” on customer behaviour. This marketing tool attracted 25 customers, divided into five age groups. The total amount associated with billboards is 25, yielding an average amount of 5. However, the relatively high dispersion value of 19 indicates significant variability in the reported amounts within each age group, suggesting diverse spending patterns among customers. Another marketing tool examined is “Advertising at Points of Sale.” This tool attracted 22 customers, categorized into five age groups. The total amount associated with advertising at points of sale is 22, resulting in an average amount of 4.4. The dispersion value of 4.3 indicates moderate variability in the reported amounts within each age group, implying some differences in spending behaviours among customers. The analysis also includes the impact of “Personal Sales,” which attracted 26 customers distributed across five age groups. The total amount associated with personal sales is 26, yielding an average amount of 5.2. The dispersion value of 9.7 suggests a significant range of reported amounts within each age group, indicating diverse spending behaviours among customers. Furthermore, the impact of “Public Relations” on customer behaviour was examined. This marketing tool attracted 16 customers, divided into five age groups. The total amount associated with public relations is 16, resulting in an average amount of 3.2. The dispersion value of 8.2 indicates a considerable range of reported amounts within each age group, suggesting potential variations in spending patterns among customers. Finally, the impact of “Promotions” on customer behaviour was analysed. This marketing tool attracted 17 customers, categorized into five age groups. The total amount associated with promotions is 17, resulting in an average amount of 3.4. The low dispersion value of 1.3 suggests a relatively consistent spending pattern among customers within each age group.

Table 3. The Impact of Marketing Tools on the Age Factor

Marketing tools	Number of involved customers	Amount of age groups	Sum	Average	Dispersion
Internet	85	5	85	17	214
Printed advertisements	9	5	9	1.8	0.7
Billboards	25	5	25	5	19
Advertising at points of sale	22	5	22	4.4	4.3
Personal sales	26	5	26	5.2	9.7
Public relations	16	5	16	3.2	8.2
Promotions	17	5	17	3.4	1.3

The analysis of Table 3 reveals that the Internet has the greatest impact on young people, specifically consumers under the age of 34, compared to older audiences. This suggests that the Internet as a marketing tool is more effective in reaching and influencing younger demographics. On the other hand, the other marketing tools have shown relatively weaker

effectiveness, indicating that newer technologies, such as the Internet, outperform traditional channels.

Moreover, the analysis highlights that different age groups have varying levels of response to different communication channels. This implies that the age of customers plays a significant role in determining their susceptibility to specific marketing communication channels. Consequently, it is crucial for advertising campaigns to be targeted towards specific age groups that have demonstrated a higher level of response to the advertising information delivered through the respective marketing communication channel. This targeted approach ensures maximum effectiveness and resonance with the intended audience.

Table 4 presents the conclusions derived from the analysis of the statistically significant influence of factor levels, specifically the different age groups, on the average amounts. The table provides information on the variation source, sum of squares (SS), degrees of freedom (df), mean squares (MS), F-statistic, p value, and critical F value.

Table 4. The outputs of ANOVAs

Variation source	SS	df	MS	F	P value	F critical
Between groups	784.343	6	130.724	3.558	0.0096	2.445
Within groups	1028.8	28	36.743			
Total	1813.143	34				

Based on the outputs presented in Table 4, the analysis reveals statistically significant differences in the average amounts across different age groups. This confirms that age group membership has a significant influence on consumer spending patterns. Furthermore, the “between groups” variation source indicates that the variability in average amounts attributed to the different age groups is significant, as evidenced by the calculated F-statistic (3.558) and the associated p-value (0.0096). These results provide strong evidence to suggest that the average amounts differ significantly between the age groups. The variation source “Within groups” in Table 4 represents the variability observed within each age group. The sum of squares for this variation source is 1028.8, indicating the total variability within the age groups. The degrees of freedom for this source are 28, representing the total number of observations minus the number of age groups. Dividing the sum of squares by the degrees of freedom gives a mean square value of 36.743, which represents the average variability within each age group. The total sum of squares in the analysis is 1813.143, which is the combined variability between and within the age groups. The total degrees of freedom are 34, representing the total number of observations minus one.

However, it is important to note that the specific effectiveness of Internet marketing communication compared to other tools is not explicitly addressed in the outputs provided in Table 4. The table primarily focuses on the statistical analysis of differences in average amounts between age groups. Therefore, further research and analysis would be required to draw conclusions about the relative effectiveness of different marketing tools in influencing consumer behaviour across age groups.

5. Conclusions

The analysis reveals insights into consumer behaviour and preferences regarding marketing communication channels. It established that consumers aged 18 to 34 are the most active users of online advertising and direct marketing, while older consumers show a preference for promotions and point-of-sale advertising. This suggests that different age groups have distinct preferences in regard to engaging with marketing messages. Furthermore, the study indicates that younger consumers (under 34 years old) are more likely to accept online marketing communications, while older consumers are more likely to respond to billboards and promotions. This highlights the importance of tailoring marketing strategies to target specific age groups through the appropriate channels. Among the various channels, online advertising exhibits the highest diversity of consumer engagement, with a variance of 17. This suggests that online platforms provide a wider and more diverse audience that can be effectively reached through this channel, making it a valuable avenue for marketing efforts.

In the context of the GH store chain, the research identified the main channels that influence consumers to visit the store. On the one hand, this study indicates that billboard advertising is not an attractive means of communication with consumers as it was in the past. On the other hand, social media marketing campaigns have proven to be highly effective and popular, given the wide audience and diverse social groups that can be targeted using different criteria. In addition, social media platforms enable interaction with consumers, allowing companies to receive feedback and respond to their needs and preferences.

The findings of this research have practical implications for marketing and advertising strategies. They can serve as a foundation for further research in the field, leading to the development of more effective communication and marketing strategies that can enhance business performance. The data obtained from the analysis can be used to conduct detailed studies on the effectiveness of various marketing communication channels and develop strategies to attract new customers. These insights can inform management decisions, improve product quality, and increase competitiveness in the market. Additionally, the analysis indicates that different age groups respond to marketing communications in a similar manner, suggesting that no single group can be singled out as being more receptive to advertising. This implies the need for a comprehensive approach when targeting different age groups in marketing campaigns. Furthermore, the study highlights the importance of investigating the influence of various factors on consumers' purchasing decisions and establishing relationships between qualitative and quantitative variables. Overall, the research outcomes provide valuable insights into consumer behaviour and offer opportunities for further exploration and the development of effective marketing and advertising strategies.

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