

Implementation of Digitalization and Adaptability of Fast-Moving Consumer Goods (FMCG) Industry

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ABSTRACT

Digitalization has become an increasingly important organizational capability as businesses respond to changing customer expectations, supply chain disruptions, competitive pressures, and rapidly evolving technologies. This study examined the implementation of digitalization and its relationship with organizational adaptability in the fast-moving consumer goods (FMCG) industry in Negros Occidental, Philippines. A quantitative descriptive-correlational research design was employed. The study involved 100 respondents consisting of managers, supervisors, sales personnel, and warehouse personnel from selected FMCG organizations. A researcher-made 35-item questionnaire was utilized to measure digitalization implementation and adaptability. The instrument was validated by five experts using Lawshe's Content Validity Ratio, with all items obtaining a CVR of 1.00. A pilot test involving 30 respondents who were not included in the actual survey resulted in a Cronbach's alpha of 0.981, indicating excellent internal consistency. Descriptive statistics, the Kruskal-Wallis H test, and Spearman's rank-order correlation were employed for data analysis. The findings showed that digitalization implementation was at a very high level, with an overall mean of 4.42. Among the dimensions, operational efficiency obtained the highest mean of 4.47, followed by supply chain responsiveness at 4.44, data-driven decision-making at 4.38, and customer service adaptability at 4.38. Employee adaptability was also assessed as very high, with a grand mean of 4.35. A significant difference in digitalization implementation was found when respondents were grouped according to organizational position ($H = 11.790$, $p = .008$). However, no significant differences were found according to type of FMCG company, number of employees, years of operation, or scale of operations. Furthermore, a strong positive and statistically significant relationship was found between digitalization implementation and adaptability ($r_s = .737$, $p < .001$). The findings indicate that digitalization is not merely a technological initiative but an organizational capability that can support flexibility, responsiveness, and continuous adaptation. FMCG organizations should therefore complement technology investments with employee development, leadership support, inclusive digital adoption, and structured change-management practices.

Keywords: digitalization, organizational adaptability, FMCG industry, digital transformation, operational efficiency, supply chain responsiveness

INTRODUCTION

Digital technology has fundamentally changed the way organizations perform business activities, communicate with customers, manage information, and coordinate internal operations. The increasing availability of digital platforms, mobile technologies, enterprise systems, cloud-based applications, analytics, and automated processes has enabled organizations to redesign traditional business practices and respond more rapidly to changing market conditions. Digital transformation is increasingly viewed not simply as the introduction of new technologies but as a broader organizational process involving changes in structures, capabilities, processes, and value creation. Vial (2019) describes digital transformation as a process in which digital technologies trigger disruptions that require organizations to make strategic responses while managing structural changes and organizational barriers.

The distinction between digitization, digitalization, and digital transformation is also important in understanding the present study. Digitization generally involves converting information from physical to digital formats, whereas digitalization involves the use of digital technologies to improve or redesign existing processes. Digital transformation represents a broader organizational change in which digital technologies influence strategies, structures, capabilities, and business models. Verhoef et al. (2021) emphasize that these stages have different organizational implications and that successful digital transformation requires appropriate organizational structures and capabilities.

For organizations operating in highly competitive industries, digitalization can provide important advantages in managing information and coordinating activities. It can improve the speed and accuracy of transactions, provide greater visibility of inventory and sales information, support data-driven decisions, and facilitate communication among employees, customers, suppliers, and distribution partners. Digital tools may therefore help organizations reduce delays, identify problems more quickly, and allocate resources more effectively.

These capabilities are particularly relevant to the fast-moving consumer goods (FMCG) industry. FMCG organizations operate in an environment where products generally have high sales frequency, relatively rapid inventory movement, extensive distribution networks, and changing consumer demand. Organizations must continuously coordinate sales, inventory, warehousing, transportation, merchandising, customer service, and financial activities. Even relatively small disruptions in supply, demand, transportation, or inventory availability may affect service levels and business performance.

The FMCG sector also involves multiple organizational roles with different levels of exposure to digital systems. Managers may use dashboards and analytical reports for strategic decisions, supervisors may use digital systems to monitor activities and performance, sales personnel may use mobile applications for customer transactions and order processing, while warehouse personnel may use warehouse management systems and digital inventory tools. Consequently, the benefits and challenges of digitalization may not be experienced uniformly by all organizational positions.

Digitalization is particularly important in supply chain management. Modern supply chains increasingly depend on timely information regarding inventory, orders, transportation, demand, and customer requirements. Digital technologies can facilitate information sharing and coordination across supply chain activities. In FMCG operations, this may include enterprise resource planning systems, warehouse management systems, transport management systems, mobile sales applications, electronic ordering platforms, dashboards, and data analytics. These technologies can improve visibility and support faster operational responses.

However, the availability of digital technology alone does not guarantee organizational improvement. Organizations must possess the capability to integrate technologies into everyday work practices. Employees must understand the purpose of digital systems, acquire the skills required to use them, and be willing to adjust established routines. Leadership support, communication, training, and organizational learning therefore become important components of successful digitalization.

Hanelt et al. (2021), in their systematic review of digital transformation research, found that digital transformation is associated with organizational designs that enable continuous adaptation. Their review also indicates that digital transformation involves more than isolated technological changes; it may lead to broader organizational shifts and requires organizations to develop capabilities that support ongoing adaptation.

Organizational adaptability is particularly important in the FMCG environment because market conditions can change rapidly. Changes in customer preferences, competitor activities, product availability, logistics conditions, economic circumstances, and technology can require organizations to modify their processes and decisions. Adaptability therefore represents the organization's ability and willingness to adjust its activities, resources, and practices in response to changing circumstances.

The relationship between digitalization and adaptability is consequently an important area of inquiry. Digital technologies can provide organizations with timely information and improved coordination, while employees who are capable of using digital tools may respond more effectively to changes. At the same time, digital

transformation may require employees to learn new systems, modify established processes, and accept new ways of working. Digitalization and adaptability may therefore reinforce one another.

In the Philippine context, digital transformation has become increasingly relevant as businesses seek to improve productivity, resilience, and competitiveness. However, the extent to which digitalization contributes to organizational adaptability may differ according to industry, location, organizational structure, and employee characteristics. There remains a need for empirical evidence from specific industries and geographic areas.

Negros Occidental provides a relevant setting for examining these issues because FMCG organizations operate through diverse distribution and retail networks across urban and provincial markets. The industry involves manufacturers, distributors, sales organizations, warehouses, and frontline personnel who collectively support product availability and customer service.

Despite the increasing adoption of digital technologies, limited empirical research has specifically examined the relationship between digitalization implementation and adaptability among FMCG organizations in Negros Occidental. This study therefore sought to determine the level of digitalization implementation, assess employee adaptability, identify whether digitalization implementation differs across organizational profiles, and determine whether digitalization implementation is significantly related to adaptability.

Research Questions

- What is the profile of the respondents in terms of position, type of FMCG company, number of employees, years of operation, and scale of operations?
- What is the level of digitalization implementation in terms of operational efficiency, supply chain responsiveness, data-driven decision-making, and customer service adaptability?
- What is the level of adaptability among employees in the FMCG industry?
- Is there a significant difference in digitalization implementation when respondents are grouped according to their organizational profile?
- Is there a significant relationship between digitalization implementation and adaptability?

Research Hypotheses

H₀₁: There is no significant difference in digitalization implementation when respondents are grouped according to their organizational profile.

H₀₂: There is no significant relationship between digitalization implementation and adaptability among FMCG organizations.

RELATED LITERATURE

Digital transformation has emerged as an important research area because digital technologies increasingly influence organizational strategy, operations, and competitive positioning. Vial (2019) conceptualized digital transformation as a process involving technological disruptions, strategic responses, structural changes, and organizational barriers. This perspective indicates that technology adoption should be understood within the broader context of organizational change rather than as an isolated technical activity.

Verhoef et al. (2021) distinguish digitization, digitalization, and digital transformation as related but different stages. Their framework emphasizes that digital transformation requires organizational capabilities, appropriate structures, and changes in how organizations measure and manage performance.

Hanelt et al. (2021) similarly found that digital transformation research increasingly connects technology with organizational adaptation. Their systematic review suggests that organizations undergoing digital transformation tend to develop more flexible organizational arrangements that support continuous adaptation.

These perspectives are relevant to FMCG organizations because digitalization affects multiple operational functions simultaneously. The implementation of digital systems can change how employees receive information, process orders, manage inventory, monitor sales, coordinate deliveries, and communicate with customers.

The Technology Acceptance Model explains technology adoption through perceptions of usefulness and ease of use. When employees perceive a technology as useful for performing their responsibilities and sufficiently easy to use, they are more likely to accept and use it. In an FMCG environment, employees may be more willing to adopt mobile sales applications, inventory systems, dashboards, and other digital platforms when these tools clearly improve their work.

Diffusion of Innovation Theory provides another perspective for understanding how new technologies spread within organizations. Innovation adoption is influenced by characteristics such as relative advantage, compatibility, complexity, trialability, and observability. In FMCG organizations, technologies that demonstrate clear improvements in sales productivity, inventory accuracy, delivery efficiency, or customer service may be more readily accepted by employees.

Dynamic Capabilities Theory provides a strategic explanation for the relationship between digitalization and adaptability. Dynamic capabilities refer broadly to an organization's ability to sense changes, seize opportunities, and reconfigure resources and processes in response to environmental conditions. Digital technologies can strengthen these capabilities by improving access to information, increasing visibility, and supporting faster decisions.

Supply chain responsiveness is particularly important in the FMCG industry. Products must be available at the right location and time, while inventory must be managed carefully to avoid stockouts, overstocks, and unnecessary operating costs. Digital inventory systems can provide more accurate stock information, while transport and routing systems can support more efficient delivery planning.

Another important component of digitalization is the use of data in organizational decision-making. Digital technologies allow organizations to access larger volumes of information and analyze operational performance more frequently. In FMCG organizations, data may be used to monitor sales performance, inventory levels, customer purchasing patterns, distribution efficiency, and product availability.

Customer expectations have changed alongside the development of digital technologies. Customers increasingly expect faster responses, accurate order fulfillment, product availability, and convenient communication. FMCG organizations therefore need systems that enable employees to respond to customer requirements efficiently.

The reviewed literature consistently indicates that digital transformation is a multidimensional organizational phenomenon. It involves technology, people, processes, structures, and capabilities. Digitalization can improve operational efficiency, supply chain responsiveness, information availability, and customer service. At the same time, organizations need employee capability and organizational support to obtain these benefits.

The literature further suggests a theoretical connection between digitalization and adaptability. Digital technologies provide information and coordination capabilities, while organizational adaptability enables employees and organizations to translate these capabilities into responses to changing conditions. However, much of the existing literature focuses on broad organizational settings, large enterprises, or international contexts. The present study addresses this gap by examining FMCG organizations in Negros Occidental.

METHODOLOGY

Research Design

The study employed a quantitative descriptive-correlational research design. The descriptive component was used to determine the profile of respondents and assess the levels of digitalization implementation and adaptability. The correlational component was used to determine whether a significant relationship existed between digitalization implementation and adaptability.

Research Locale and Respondents

The study was conducted among selected FMCG organizations operating in Negros Occidental. The respondents represented different organizational positions, including managers, supervisors, sales personnel, and warehouse personnel. A total of 100 respondents participated in the study. The distribution consisted of 15 managers, 25 supervisors, 40 sales personnel, and 20 warehouse personnel.

Sampling Procedure

The final study used census or total enumeration. All 100 eligible members of the defined study population were included as respondents. Total enumeration was appropriate because the population was manageable and accessible to the researcher, allowing complete coverage of the defined population.

Research Instrument

A researcher-made questionnaire consisting of 35 items was used for data collection. The instrument measured digitalization implementation through operational efficiency, supply chain responsiveness, data-driven decision-making, and customer service adaptability, and included indicators measuring adaptability. Responses were measured using a five-point Likert scale.

Validity of the Instrument

Content validity was established through expert evaluation. Five experts reviewed the questionnaire items and assessed whether each item was essential. Lawshe's Content Validity Ratio was used to quantify expert judgments. All 35 items obtained a CVR of 1.00.

Reliability of the Instrument

A pilot test was conducted with 30 respondents who were not included in the actual study. Cronbach's alpha was used to determine internal consistency. The instrument obtained an overall Cronbach's alpha of 0.981, indicating excellent internal consistency.

Data Collection Procedure

Prior to data collection, the researcher secured the necessary permissions and coordinated with participating organizations. Respondents were informed of the purpose of the study and the voluntary nature of participation. Confidentiality and appropriate handling of respondent information were observed throughout the data collection process.

Statistical Treatment

Frequency and percentage were used to describe respondent profiles. Mean and standard deviation were used to determine levels of digitalization implementation and adaptability. The Kruskal-Wallis H test was employed to determine whether digitalization implementation significantly differed across profile groups. Spearman's rank-order correlation was used to determine the strength and direction of the relationship between digitalization implementation and adaptability. A significance level of 0.05 was used.

RESULTS AND DISCUSSION

Profile of Respondents

Profile Variable	Category	f	%
Position	Manager	15	15.0
	Supervisor	25	25.0
	Sales Personnel	40	40.0
	Warehouse Personnel	20	20.0
FMCG Type	Distributor	83	83.0
	Manufacturer	17	17.0
Number of Employees	10 and below	3	3.0
	11–50	4	4.0
	51–100	10	10.0
	101 and above	83	83.0
Years of Operation	1 year and below	17	17.0
	2–5 years	4	4.0
	6 years and above	79	79.0
Scale of Operations	Local	53	53.0
	Regional	28	28.0
	National	19	19.0

Sales personnel comprised the largest respondent group at 40%, followed by supervisors at 25%, warehouse personnel at 20%, and managers at 15%. This distribution provides substantial representation from employees directly involved in day-to-day FMCG operations.

The majority of respondents were from distributor organizations, representing 83% of the sample. This composition is relevant because distributors perform important functions in inventory management, sales execution, transportation, customer service, and order fulfillment.

Similarly, 83% of respondents were associated with organizations employing 101 or more employees. Most organizations had also operated for six years or more, accounting for 79% of the respondents. In terms of operational scale, 53% were classified as local, 28% as regional, and 19% as national.

The profile indicates that the study primarily represents established FMCG organizations with relatively large employee populations. This context should be considered when interpreting the high levels of digitalization implementation observed in the study.

Level of Digitalization Implementation

Dimension	Mean	SD	Interpretation
Operational Efficiency	4.47	0.75	Very High
Supply Chain Responsiveness	4.44	0.76	Very High
Data-Driven Decision-Making	4.38	0.79	Very High
Customer Service Adaptability	4.38	0.71	Very High
Overall	4.42	0.70	Very High

The overall mean of 4.42 indicates a very high level of digitalization implementation among the participating FMCG organizations. This finding suggests that digital technologies are already integrated into important areas of organizational activity.

Operational efficiency obtained the highest mean of 4.47. This suggests that respondents particularly recognized the contribution of digital technologies to improving work processes and operational performance. Digital systems can reduce repetitive manual activities, improve access to information, facilitate communication, and provide greater visibility of work activities.

Supply chain responsiveness obtained the second-highest mean of 4.44. This is particularly relevant to FMCG organizations because product availability depends heavily on timely coordination among sales, warehouse, logistics, and customer-facing functions.

Digital tools can facilitate information exchange and help organizations respond to changes in demand and supply conditions.

Data-driven decision-making obtained a mean of 4.38. This indicates that respondents perceived digitalization as supporting the use of information in organizational decisions. The relatively high rating demonstrates that digitalization is not limited to transaction processing but also contributes to management and operational decision-making.

Customer service adaptability also obtained a mean of 4.38. This suggests that digital tools are perceived to help organizations respond to customer requirements. In a competitive FMCG environment, customer responsiveness is important because delays or inaccurate information can affect customer satisfaction and business relationships.

Overall, the findings indicate that digitalization has become embedded in several interconnected aspects of FMCG operations rather than being limited to a single business function.

Level of Adaptability

Adaptability Measure	Mean	SD	Interpretation
Digitalization strengthens organizational flexibility and adaptability	4.51	0.83	Very High
Employees perform responsibilities effectively using digital tools	4.39	0.85	Very High
Employees are willing to learn and use digital platforms	4.38	0.89	Very High
Employees adapt to newly implemented digital systems	4.20	0.74	High
Organization quickly adjusts work processes with new digital tools	4.20	0.85	High

Grand Mean	4.35	0.75	Very High
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The grand mean of 4.35 indicates a very high level of adaptability. Respondents generally perceived employees as capable of functioning effectively within a digitally changing work environment.

The highest-rated statement was that digitalization strengthens organizational flexibility and adaptability, with a mean of 4.51. This result is important because it directly reflects the perceived connection between digital capability and organizational adjustment.

Employees' ability to perform responsibilities effectively using digital tools obtained a mean of 4.39. This indicates that digital systems are generally viewed as practical tools for supporting daily work rather than merely technological additions.

Employee willingness to learn and use digital platforms obtained a mean of 4.38. The result suggests that respondents generally demonstrate a positive orientation toward digital learning.

However, two indicators received relatively lower means of 4.20: employees' ability to adapt to newly implemented digital systems and the organization's ability to quickly adjust work processes with new digital tools. Although both remained at high levels, the results suggest that adaptation to new systems may require more time and structured support.

This finding has practical implications. Organizations may have high digitalization levels but still experience transition challenges whenever new systems are introduced. Training, user support, communication, pilot implementation, and change-management activities can help reduce these difficulties.

Differences in Digitalization Implementation According to Organizational Profile

Grouping Variable	H	p-value	Decision	Interpretation
Position	11.790	.008	Reject H_0	Significant
Type of FMCG Company	0.563	.453	Fail to reject H_0	Not Significant
Number of Employees	4.312	.230	Fail to reject H_0	Not Significant
Years of Operation	1.997	.368	Fail to reject H_0	Not Significant
Scale of Operations	0.339	.844	Fail to reject H_0	Not Significant

The Kruskal-Wallis H test revealed a statistically significant difference in digitalization implementation according to organizational position ($H = 11.790$, $p = .008$). Since the p-value is lower than the 0.05 significance level, the null hypothesis of no difference according to position was rejected.

The mean ranks provide additional insight. Supervisors obtained the highest mean rank at 61.52, followed by managers at 52.23 and sales personnel at 52.03. Warehouse personnel obtained the lowest mean rank at 32.38.

The difference may be associated with the nature of responsibilities performed by employees. Supervisors may interact with digital systems across several functions because they monitor people, activities, performance, inventory, and operational results. Managers similarly use digital information for planning and decision-making.

Sales personnel may use digital platforms for customer transactions, order generation, product information, and performance monitoring. Warehouse personnel, on the other hand, may experience digitalization differently depending on the availability, design, and usability of warehouse systems.

The lower mean rank of warehouse personnel is therefore an important finding. It does not necessarily mean that warehouse employees reject digitalization. Rather, it may indicate differences in access, exposure, training, or the types of digital systems available to different organizational groups.

In contrast, no significant difference was found according to type of FMCG company ($H = 0.563$, $p = .453$). No significant difference was also found according to number of employees ($H = 4.312$, $p = .230$), years of operation ($H = 1.997$, $p = .368$), and scale of operations ($H = 0.339$, $p = .844$).

The results imply that organizational position may be more directly associated with employees' experiences of digitalization than broad organizational characteristics. This finding supports the need for organizations to evaluate digital transformation at the employee and process levels rather than relying solely on organizational-level indicators.

Relationship Between Digitalization Implementation and Adaptability

Variables	Spearman r_s	p-value	Interpretation
Digitalization implementation and adaptability	0.737	< .001	Strong positive, significant

The Spearman rank-order correlation revealed a strong positive and statistically significant relationship between digitalization implementation and adaptability ($r_s = .737$, $p < .001$). The result indicates that higher levels of digitalization implementation tend to be associated with higher levels of adaptability.

The strength of the relationship is particularly important. A correlation coefficient of .737 represents a strong positive association, indicating that digitalization and adaptability move together substantially within the participating organizations.

This finding can be interpreted through the dynamic capabilities perspective. Digitalization can provide organizations with better information, faster communication, greater process visibility, and improved coordination. These capabilities can help employees and organizations recognize changes and respond to them more effectively.

The relationship should nevertheless be interpreted as an association rather than proof of causation. The study design does not establish that digitalization directly causes adaptability. Other factors, such as leadership, organizational culture, employee competence, training, resources, and management practices, may also contribute to adaptability.

Nevertheless, the strength and statistical significance of the association provide empirical support for viewing digitalization as an important organizational capability associated with adaptability in the FMCG context.

Implications of the Findings

The findings have several implications for FMCG management. First, digitalization should be treated as a strategic organizational capability rather than simply an information technology project. The very high level of digitalization implementation indicates that technology is already integrated into important business processes. Management should therefore focus not only on acquiring new systems but also on ensuring that existing systems are used effectively.

Second, operational efficiency should remain an important priority. Since operational efficiency obtained the highest mean, organizations should continue improving digital processes that reduce unnecessary manual activities, improve information availability, and support productivity.

Third, supply chain responsiveness should be strengthened through integrated digital information. FMCG organizations depend on coordination among sales, inventory, warehouse, logistics, and customer-facing functions. Greater visibility of operational information can support faster and more informed responses.

Fourth, the significant difference by organizational position indicates the importance of inclusive digital transformation. Digitalization programs should not focus primarily on managers and supervisors. Frontline and warehouse personnel should receive appropriate training, system access, technical assistance, and opportunities to provide feedback.

Fifth, organizations should recognize that digital transformation is an ongoing process. The relatively lower adaptability ratings related to newly implemented systems and work-process changes suggest that employees may need transition periods when new technologies are introduced.

Finally, the strong relationship between digitalization and adaptability indicates that investments in digital capabilities may contribute to an organization's ability to adjust to changing business requirements. However, technology investments should be accompanied by employee development, leadership support, communication, and change-management practices.

CONCLUSION

The study found that FMCG organizations in Negros Occidental demonstrated very high levels of digitalization implementation and adaptability. Digitalization implementation obtained an overall mean of 4.42, while adaptability obtained a grand mean of 4.35.

Among the digitalization dimensions, operational efficiency received the highest rating, followed by supply chain responsiveness, data-driven decision-making, and customer service adaptability. These results indicate that digital technologies are integrated into multiple areas of FMCG operations.

A significant difference in digitalization implementation was found according to organizational position. Supervisors obtained the highest mean rank, while warehouse personnel obtained the lowest. This suggests that employees may experience digitalization differently depending on their responsibilities, exposure, and access to digital tools.

No significant differences were found according to type of FMCG company, number of employees, years of operation, or scale of operations. This indicates that the observed variation in digitalization implementation was more evident at the employee-position level than at the broader organizational-profile level.

Most importantly, the study established a strong positive and statistically significant relationship between digitalization implementation and adaptability ($r_s = .737$, $p < .001$). This finding supports the view that organizations with stronger digital capabilities also tend to demonstrate greater adaptability.

Overall, the study concludes that digitalization is an important organizational capability in the FMCG industry. Its value extends beyond technology adoption because it can support operational efficiency, supply chain responsiveness, informed decision-making, customer service, and organizational adaptability. To maximize these benefits, organizations should combine digital investments with employee development, leadership support, inclusive implementation, and continuous organizational learning.

RECOMMENDATIONS

1. FMCG organizations should continue investing in digital technologies that improve operational efficiency, supply chain visibility, inventory management, logistics, data analytics, and customer service.
2. Management should provide targeted training, coaching, technical support, and hands-on learning opportunities for frontline and warehouse personnel.
3. Organizations should provide sufficient transition periods, clear communication, user support, and feedback mechanisms whenever new digital systems or work processes are introduced.
4. Management should encourage employees to use reliable operational data in planning, problem-solving, performance monitoring, and resource allocation.

5. Digital platforms should be connected where appropriate so that information can flow efficiently among sales, warehouse, logistics, finance, and management functions.
6. Managers and supervisors should demonstrate active support for digital initiatives and encourage employees to use technology as part of normal work practices.
7. Digital literacy and technology-related training should be treated as continuing organizational activities rather than one-time programs.
8. Employees should be involved in evaluating and improving digital systems because they have direct knowledge of operational challenges and user requirements.
9. Industry stakeholders and policymakers may provide training, infrastructure support, knowledge-sharing opportunities, and digital transformation programs for organizations with fewer resources.
10. Future studies may examine digital leadership, technology readiness, employee resistance to change, organizational culture, digital competence, and other factors that may influence adaptability.

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