

**OPTIMIZATION OF BEHAVIORAL SEGMENTATION-BASED
OMNICHANNEL STRATEGIES IN MANAGING THE STUDENT JOURNEY
EXPERIENCE AT PRIVATE UNIVERSITIES IN INDONESIA: A CONCEPTUAL
REVIEW**



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Abstract

The increasing reliance of students on both digital and physical channels necessitates private universities to manage interactions and services in a more integrated and cohesive manner. An omnichannel strategy represents a relevant approach; however, its implementation in higher education institutions remains largely partial and predominantly focused on marketing communication. As a result, it has yet to effectively manage the student journey experience in a comprehensive manner. This study aims to develop a conceptual framework for optimizing omnichannel strategies based on student behavioral segmentation in managing the student journey experience at private universities in Indonesia. Employing a qualitative approach, this research adopts a narrative literature review guided by PRISMA principles, examining scholarly publications from the past five years indexed in the Scopus and SINTA databases. The findings indicate that omnichannel integration lacking a behavioral understanding of students tends to produce experiences that are generic, fragmented, and unsustainable. This study concludes that behavioral segmentation should be positioned as a fundamental basis for strategic decision-making in omnichannel management, enabling the design of contextual and consistent student experiences across all stages of the academic journey. The implications of this research provide a conceptual foundation for universities to develop adaptive, cross-channel integrated student experience management systems that support the sustainability of long-term relationships between institutions and students.

Keywords: Omnichannel Strategy; Higher Education; Student Experience; Behavioral Segmentation; Student Journey

INTRODUCTION

Competition in the higher education sector, particularly among private universities in Indonesia, has intensified significantly in recent years. This trend is driven by the rapid growth in the number of institutions, shifts in student demographics, and the accelerated adoption of digital technologies in the educational process. In this context, institutional competitiveness is no longer determined solely by academic quality but also by the ability of universities to design and manage student experiences in a consistent and sustainable manner throughout the entire student lifecycle from initial information search to post-graduation engagement (Lemon & Verhoef, 2016; Palacio, 2023). Aligned with these developments, the concept of the student journey experience has gained increasing strategic importance, as it reflects the full spectrum of student interactions with higher education institutions across multiple service touchpoints. Existing literature indicates that fragmented experiences caused by inconsistencies in service quality across channels, information discrepancies, and weak integration between digital and face-to-face interactions—can negatively affect student satisfaction, engagement, and loyalty (Bolton et al., 2018; Mirković, 2024). This issue is particularly critical for private universities, whose sustainability depends heavily on institutional reputation and the quality of long-term relationships with students.

As student preferences increasingly shift toward digital engagement, omnichannel strategies have emerged as a key approach for managing communication and service delivery. This strategy emphasizes the seamless integration of digital and physical channels, enabling users to initiate interactions in one channel and continue them in another without disrupting the continuity of their experience (Payne et al., 2017; Verhoef et al., 2019). In the higher education context, omnichannel integration involves the coordination of various platforms such as social media, institutional websites, and service systems to create a unified student service ecosystem, often supported by AI-enabled communication and human interaction (Kannan, 2017). However, existing studies reveal that the implementation of omnichannel strategies in higher education institutions remains largely limited to marketing communication and promotional activities. Channel integration is often confined to technical and visual aspects, without addressing the comprehensive management of student experiences across their academic journeys (Hutabarat et al., 2021; Bugshan & Attar, 2024). Consequently, omnichannel is frequently perceived merely as a tool for delivering consistent messages across channels, rather than as a strategic governance framework for managing student interactions holistically.

In this regard, behavioral segmentation has emerged as a relevant approach to capturing variations in student interaction patterns, channel preferences, and learning needs that are dynamic and context-dependent. Research in marketing and experience management demonstrates that leveraging behavioral data enables organizations to design more personalized and relevant services (Becker, 2020; Wedel & Kannan, 2016). Nevertheless, within higher education, behavioral segmentation is still predominantly applied as a limited marketing analysis tool and has not been systematically integrated into strategic decision making processes for omnichannel design (Setiawan, 2024; Gao & Bai, 2021). To date, there remains a lack of a comprehensive conceptual model that explicitly integrates omnichannel strategy, behavioral segmentation, and student journey experience management into a unified managerial framework.

Addressing this gap, the present study is designed as a conceptual research endeavor aimed at synthesizing recent literature (within the past five years) on omnichannel strategies, behavioral segmentation, and student journey experiences in the context of higher education, with a particular focus on private universities in Indonesia. This study seeks to develop a conceptual framework for optimizing behavior based omnichannel strategies, positioning them as an end-to-end student experience management system. Accordingly, this research is expected to contribute theoretically to the advancement of higher education management literature, while also providing a conceptual foundation for future empirical studies and strategic policy development at the institutional level.

REVIEW OF LITERATURE

This literature review aims to establish a robust theoretical and conceptual foundation for the study through a critical examination of prior research on omnichannel strategies, behavioral segmentation, and student journey experience management within the higher education context. The review adopts a conceptual synthesis approach, drawing on both empirical findings and theoretical studies published over the past five years from reputable international sources and accredited national journals. This approach is not only intended to consolidate existing knowledge but also to identify prevailing patterns of thought, conceptual limitations, and research gaps that inform the development of the proposed conceptual framework.

Theoretical and Conceptual Background

The concept of omnichannel originates from retail and service marketing literature, emerging alongside the increasing complexity of customer interactions across multiple channels. Omnichannel is defined as a holistic integration of organizational channels that enables individuals to experience seamless and coherent interactions across various touchpoints (Verhoef et al., 2015). As the field of experience management has evolved, omnichannel has been reconceptualized not merely as a channel integration strategy but as a comprehensive managerial system aimed at creating long-term value through cumulative user experiences (Becker, 2020; Payne & Barger, 2017). This perspective aligns with customer experience management theory, which conceptualizes experience as the aggregate of all interactions between individuals and organizations (Lemon & Verhoef, 2016). In higher education, this is reflected in the notion of the student journey experience a sequence of interactions that shape students' academic lives, from initial information search and enrollment to learning activities and post-graduation engagement. Empirical evidence suggests that systematically managed and well-integrated student experiences can enhance satisfaction, engagement, loyalty, and institutional reputation (Bolton et al., 2018; Mirković, 2024; Palacio, 2023).

Within this framework, behavioral segmentation plays a critical role. This approach categorizes individuals based on their interaction patterns, channel preferences, and levels of engagement, enabling organizations to design experiences that are more personalized and contextually relevant (Wedel & Kannan, 2016). Becker and Jaakkola (2020) emphasize that

effective experience management requires a deep understanding of dynamic user behavior. Therefore, the optimization of omnichannel strategies should be grounded in behavioral segmentation as a key basis for managerial decision-making.

Empirical Review and Hypotheses

Empirical studies indicate that the implementation of omnichannel strategies in higher education has the potential to enhance institutional communication and student engagement. Research conducted in Indonesia demonstrates that integrating social media, institutional websites, and digital academic services can improve perceptions of professionalism and accessibility (Hutabarat et al., 2021; Santoso & Rahmawati, 2024). However, most of these studies still frame omnichannel primarily within the context of marketing communication and institutional branding. Similar patterns are observed in international research. Bugshan and Attar (2024), as well as Mirković and Čudanov (2024), highlight the importance of cross-channel consistency in fostering student engagement, yet they do not explicitly connect this concept to the holistic management of the student journey experience. In many cases, omnichannel remains conceptualized as a communication tool rather than a comprehensive managerial system that governs the flow of student experiences across different stages.

Meanwhile, studies on behavioral segmentation reveal that variations in digital behavior, content preferences, and interaction patterns significantly influence the quality of user experience (Gao & Bai, 2021; Setiawan, 2024). Nevertheless, these studies are often conducted in isolation and have not been systematically integrated into omnichannel strategy design. Behavioral segmentation tends to be used primarily as a descriptive analytical tool rather than as a strategic foundation for decision-making. Based on this synthesis, it can be concluded that research on omnichannel strategies, behavioral segmentation, and student journey experience remains fragmented. To date, there is no comprehensive conceptual model that integrates these three elements into a unified managerial framework, particularly within the context of private universities in Indonesia. This gap provides the basis for the formulation of hypotheses and the development of the conceptual framework proposed in this study.

RESEARCH METHOD

Type and Research Approach

This study adopts a qualitative approach with a conceptual research design supported by a narrative literature review method. This approach is appropriate because the primary objective is not to empirically test causal relationships, but to develop and formulate a conceptual framework that integrates omnichannel strategies, behavioral segmentation, and student journey experience management within the context of private universities in Indonesia. Conceptual research is widely employed in the development of managerial theories and models, particularly in areas where phenomena are still evolving and lack a well-established integrative framework.

Literature Collection and Selection Procedures

The literature was collected through systematic searches in reputable academic databases, including Scopus, Google Scholar, and SINTA, covering publications from 2020 to 2025. The search utilized keywords such as *omnichannel strategy*, *behavioral segmentation*, *student journey experience*, *customer experience management*, and *higher education services*. The literature selection process was conducted in several stages. First, an initial search was performed, followed by screening based on titles and abstracts to assess relevance. Subsequently, a preliminary content evaluation was carried out to ensure alignment with the research focus, particularly within the higher education context. From an initial pool of 48 articles, duplicates were removed, resulting in 32 articles eligible for full-text review. In the next stage, 14 articles were excluded due to their lack of relevance to higher education or insufficient focus on student experience. Ultimately, 18 articles were selected for in-depth analysis, forming the basis for literature synthesis and conceptual model development.

Conceptual Model Development

Based on the synthesized literature, this study proposes a conceptual model that illustrates the theoretical relationships among the key constructs. Within this model, the omnichannel strategy is positioned as a comprehensive managerial system that governs student interactions across multiple channels. Behavioral segmentation serves as the foundation for strategic decision-making, enabling the design of student experiences that are tailored to diverse behavioral patterns throughout the academic journey.

The relationships among these constructs are visually represented in the conceptual framework presented in Figure 1.

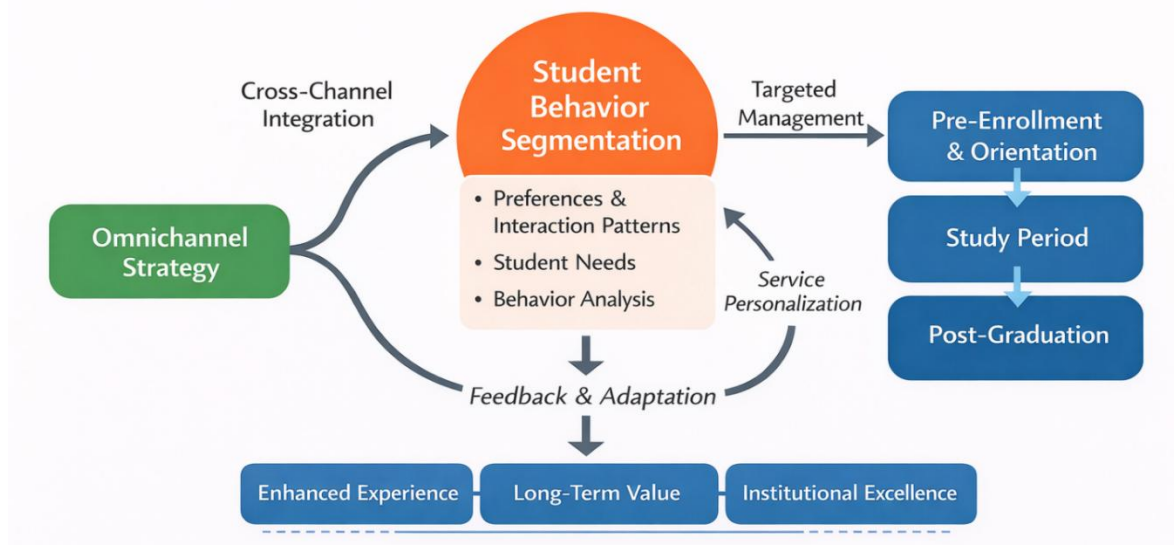


Figure 1.

Conceptual Model of Optimizing Behavior-Based Omnichannel Strategy in Managing the Student Journey Experience

Source: Adapted from Verhoef et al. (2015); Lemon & Verhoef (2016); Payne et al. (2017); Becker & Jaakkola (2020); Palacio & Abad (2023).

The model is not being constructed as a validated testing tool, but rather as a conceptual device designed to describe the structure of the logical consequence among key

constructs in the phenomenon: omnichannel strategy, student behavior segmentation and student travel experience. This typology can be a useful conceptual framework for theoretical construction and future empirical research in the domain of higher education, particularly at private universities in Indonesia.

State of the Art Research Synthesis

To enhance the concept, we carried out a state-of-the-art map (SAM) that identifies the purpose, results, and conceptual gaps of previous studies on omnichannel, behavioral segmentation, and student tourist experiences. The findings of this synthesis are detailed in Table 1 and explicitly referred to in the discussion section.

Table 1.
Synthesis of State-of-the-Art Research on Omnichannel and Student Journey Experience

Main Focus	Key Researchers	Context & Method	Key Findings	Conceptual Gaps
Omnichannel as a strategic system	Verhoef et al. (2015); Herhausen et al. (2020)	Retail and service sectors; conceptual and literature review	Channel integration enhances consistency of customer experience	Limited application within the higher education context
Omnichannel and engagement	Payne et al. (2017); Bugshan & Attar (2024)	Higher education services and branding	Integrated channels improve student engagement	Primarily focused on branding, lacking end-to-end journey management
Omnichannel in Indonesian higher education	Hutabarat et al. (2021); Santoso & Rahmawati (2024)	Indonesian private universities; qualitative and conceptual	Effective in improving institutional communication	Behavioral segmentation is not yet utilized as a strategic foundation
Student behavioral segmentation	Gao & Bai (2021); Setiawan (2024)	Higher education; qualitative approach	Segmentation enhances service relevance and personalization	Not yet integrated into omnichannel strategy design
Student journey experience	Palacio & Abad (2023); Mirković & Čudanov (2024)	Higher education; quantitative and mixed methods	Cross-stage experiences significantly influence loyalty	Not explicitly linked to omnichannel system integration

Source: Adapted from Verhoef et al. (2015); Cai & Lo (2020); Payne et al. (2017); Bugshan & Attar (2024); Hutabarat et al. (2021); Santoso & Rahmawati (2024); Gao & Bai (2021); Setiawan (2024); Palacio & Abad (2023); Mirković & Čudanov (2024).

RESULTS AND DISCUSSION

The findings of this study represent a conceptual synthesis derived from a thematic analysis of recent literature (last five years) addressing omnichannel strategies, student behavioral segmentation, and student journey experience within the higher education context. As this research adopts a conceptual approach through a narrative literature review, the term “*results*” refers not to statistical outputs or hypothesis testing, but to identified conceptual patterns, emerging research trends, and interrelationships among key constructs. The synthesis indicates that omnichannel strategies in higher education are gradually evolving toward more systematic and integrated cross-channel frameworks. However, most existing studies position omnichannel primarily as a tactical extension of marketing communication or institutional branding. In practice, integration efforts often stop at aligning messages and visual identity across channels, with limited attention given to managing the student experience consistently throughout the entire journey. This condition highlights a gap between the theoretical ideal of omnichannel integration and its practical implementation in higher education.

Furthermore, the literature suggests that the integration of digital and physical channels can enhance perceived service quality, particularly when students are able to transition seamlessly between channels without disruption to information continuity. Such consistency has been shown to strengthen student engagement. Nevertheless, many studies implicitly assume uniform student preferences, overlooking the fact that individual behaviors and channel usage patterns significantly influence how services are experienced. In addition, the review reveals that student behavioral segmentation is widely acknowledged as a valuable approach for improving service relevance and interaction quality. Despite this, its application remains largely descriptive and has not been systematically incorporated into the design or execution of omnichannel strategies. As a result, the interconnection between omnichannel strategy, behavioral segmentation, and student journey experience has yet to be articulated within a unified managerial framework.

Discussion

The findings of this study suggest that omnichannel strategies in higher education should not be viewed merely as tools for marketing communication, but rather as comprehensive strategic frameworks for managing the student experience holistically. Consistent with the perspectives of Verhoef et al. (2015) and Payne et al. (2017), omnichannel should function as a managerial system that governs student interactions across multiple channels throughout the entire academic lifecycle. When limited to message alignment and visual consistency, omnichannel implementation risks producing fragmented and discontinuous student experiences. Within this framework, behavioral segmentation emerges as a critical foundation for strategic decision-making. The literature consistently demonstrates that students exhibit diverse and dynamic behaviors, preferences, and needs that vary across contexts and stages of their academic journey. As emphasized by Becker and Jaakkola (2020) and Wedel and Kannan (2016), effective experience management requires a deep understanding of user behavior. Therefore, this study extends prior research by positioning behavioral segmentation as a core strategic logic in omnichannel design.

Moreover, this study highlights the importance of aligning omnichannel strategies with the stages of the student journey. Prospective students, active students, and alumni possess distinct expectations and service needs. Failure to account for these differences

particularly without a behavior based segmentation approach can lead to generic and ineffective interactions. This aligns with the critique of Cai and Lo (2020), who argue that omnichannel strategies lacking behavioral grounding tend to result in superficial technical integration with minimal experiential value. Finally, this argument is consistent with the Omnichannel Integrated Marketing Communication (IMC) framework proposed by Payne et al. (2017), which emphasizes the relationship between touchpoint management, engagement creation, and long-term value generation. In the context of higher education, institutional value extends beyond financial outcomes to include student loyalty, sustained institutional relationships, and academic reputation. Accordingly, the Omnichannel IMC framework provides a relevant theoretical lens for understanding how student interactions translate into engagement and long-term institutional value creation.

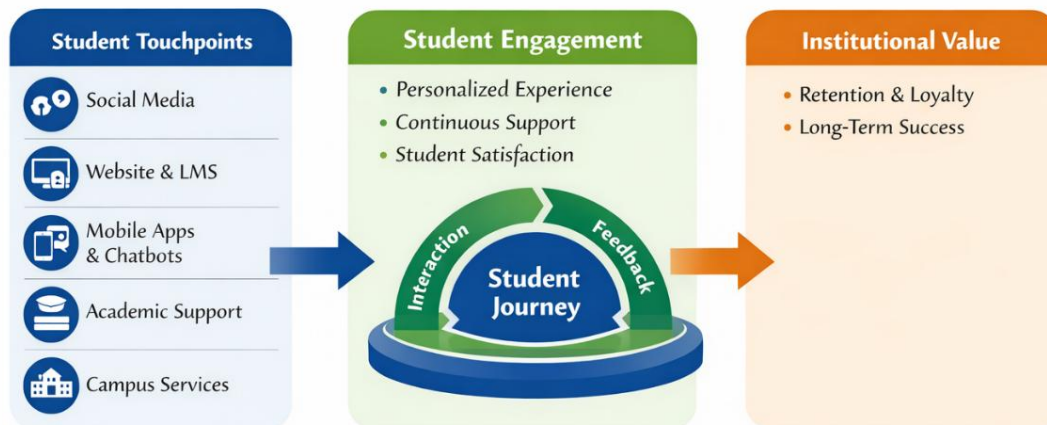


Figure 2.
Omnichannel IMC Framework: Touchpoints, Engagement, and Profitability
Source: Adapted from Payne et al. (2017)

The framework illustrated in Figure 2 demonstrates that effective management of student touchpoints serves as a fundamental requirement for fostering sustainable student engagement, which subsequently drives the creation of long-term institutional value. However, this framework does not explicitly account for student behavioral segmentation as a core basis for strategic decision making. Accordingly, this study modifies and extends the Omnichannel IMC framework by incorporating behavioral segmentation into the design and management of omnichannel systems in higher education, as reflected in the proposed conceptual model. Although prior studies have increasingly examined omnichannel strategies, behavioral segmentation, and student journey experience, the existing body of literature remains fragmented and partial. To date, no comprehensive conceptual framework has systematically integrated omnichannel as a strategic system, behavioral segmentation as a decision-making foundation, and student journey experience as the primary outcome within a unified end to end model, particularly in the context of private universities in developing countries. Therefore, the conceptual model proposed in this study aims to address this gap by bridging these fragmented perspectives and enhancing the theoretical understanding of omnichannel based student experience management.

CONCLUSION

This study concludes that omnichannel strategies in higher education should be positioned as integrated managerial systems rather than merely as extensions of marketing communication. The findings highlight that the effectiveness of omnichannel implementation depends on its alignment with student behavioral segmentation and its orientation toward comprehensive student journey experience management. Without incorporating behavioral insights, omnichannel integration tends to remain superficial and fails to deliver meaningful and sustainable student experiences. The main contribution of this study is the development of a conceptual framework that integrates omnichannel strategy, behavioral segmentation, and student journey experience into a unified model. This framework extends existing literature by repositioning omnichannel as a strategic mechanism for managing end to end student experiences, particularly within the context of private universities in Indonesia.

However, this study is limited by its conceptual nature and reliance on secondary literature, which has not yet been empirically validated. Therefore, future research is recommended to test this framework using quantitative or mixed method approaches, incorporating real-world student behavioral data across multiple interaction channels. Further studies may also explore the integration of advanced analytics and artificial intelligence to support adaptive and data-driven omnichannel management. From a practical standpoint, this study suggests that higher education institutions should adopt a more holistic and behavior-driven approach in designing omnichannel strategies. By doing so, institutions can enhance student engagement, strengthen long-term relationships, and improve institutional sustainability and reputation.

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