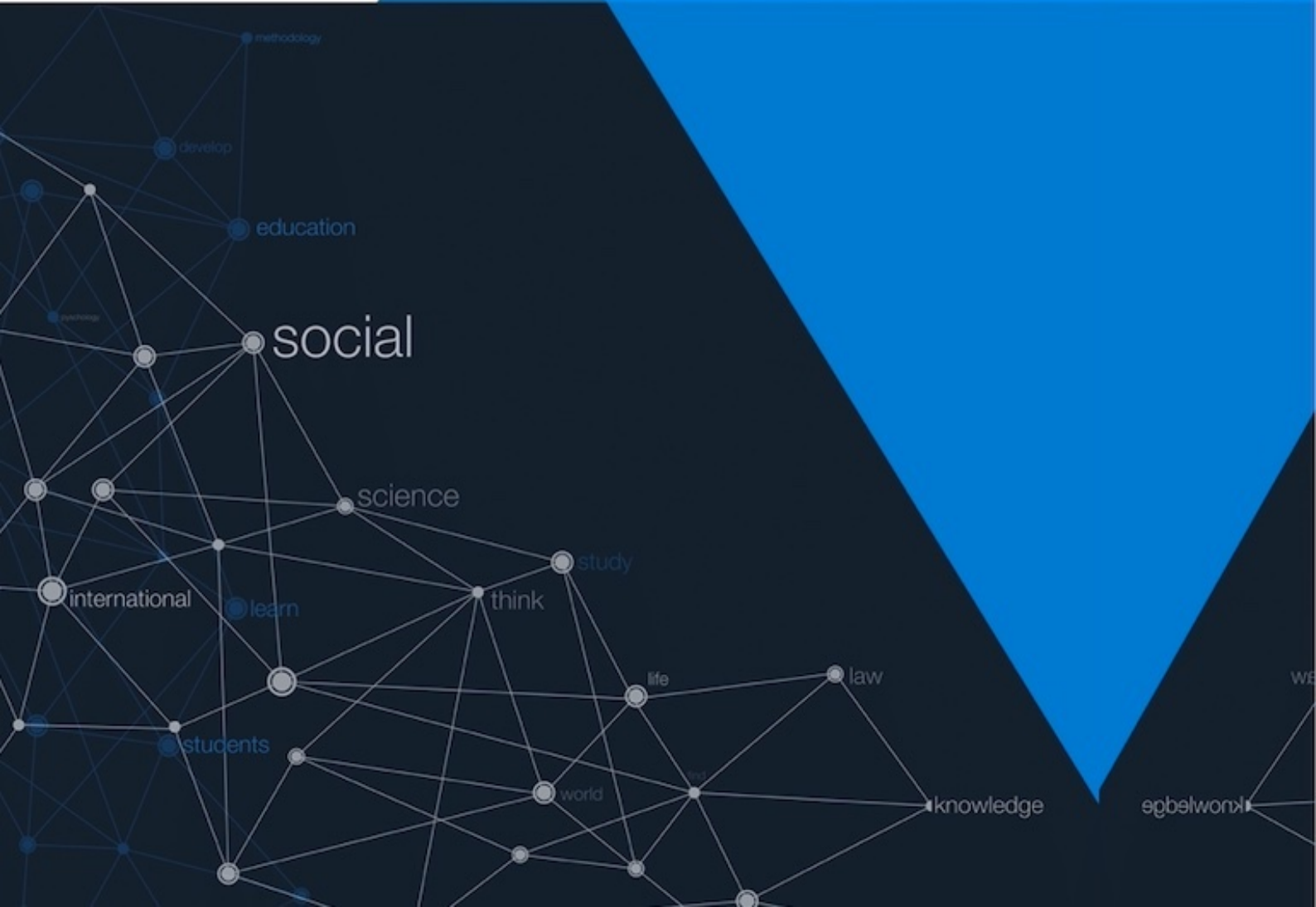
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Exploring barriers to purchasing the necessary commodities in daily life and adaptive strategies of middle-class consumers in Bangladesh

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Abstract

This study explores the barriers middle-class consumers in Bangladesh face when purchasing essential commodities and how they adapt to rising living costs. A qualitative design was employed in the Khulna and Jashore districts using purposive sampling. Data were collected through nine in-depth interviews and two focus group discussions with 29 participants, guided by a semi-structured interview guide. The findings identify income constraints, price hikes, transportation costs, limited market access, cultural norms, festivals, and social expectations as the main barriers. The study suggests that price control policies, greater market transparency, targeted subsidies, and salary adjustments could reduce financial pressure on middle-class households. Drawing on Bourdieu's social capital theory, the findings further demonstrate how individuals and families mobilize social networks to cope with economic hardship and adapt to rising commodity prices.

1. Introduction

Middle-class consumers in Bangladesh have grown significantly over the past two decades, driven by economic growth, urbanization, and rising living standards (Shahabuddin & Akhter, 2024). However, inflation, supply chain disruptions, and limited purchasing power have created substantial barriers to accessing daily necessities. The COVID-19 pandemic and recent geopolitical tensions have further exacerbated these challenges (Karim & Tasnim, 2022). One of the greatest threats facing Bangladesh's middle class is the rising cost of living, fueled by global market uncertainty and persistent inflation. Between 2021 and 2023, average annual inflation of about 7% disproportionately affected upper-middle-class households (Arman, 2023).

In 2024, the situation deteriorated further. Escalating prices for essential goods and shortages of quality food and everyday necessities have undermined the economic security of many middle-class households (Chowdhury et al., 2024). To cope with these constraints and market exclusion, some consumers relied on personal resources and social networks (Kamran et al., 2025). During periods of high inflation, middle-class consumers typically adopt coping strategies to keep household expenditures within budget, such as reducing consumption, buying smaller quantities, and choosing lower-cost alternatives. Others seek additional income by starting side businesses or taking on extra work to maintain their standard of living. Nevertheless, many consumers, particularly those with fixed incomes, cannot adapt effectively to these economic pressures, leading to a gradual decline in their overall quality of life (Natal et al., 2024). Although targeted subsidy programs are intended to support low-income households, they provide little relief to the middle class. Moreover, limited access to credit further constrains middle-class consumers' ability to cope with rising prices and unexpected financial shocks.

Previous studies have several limitations. First, most research has focused on barriers to accessing essential commodities among low-income consumers, while middle-class consumers have received limited scholarly attention. Second, relatively little is known about how middle-class consumers adapt to persistent economic challenges. Third, previous studies have largely used quantitative approaches, such as questionnaire surveys and statistical

** The study was approved by the Khulna University Ethical Clearance Committee (Date: September 8, 2025, and No. KUECC-2025-09-118). All responsibility belongs to the authors.*

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analyses, which offer limited insight into consumers' lived experiences, perceptions, and coping processes. To address these gaps, this study explores the barriers that middle-class consumers face in accessing essential commodities and examines the adaptive strategies they employ through a qualitative research design.

This study makes several contributions. First, it integrates barriers to accessing essential commodities with the adaptive strategies middle-class consumers adopt, offering new theoretical insights and directions for future research. Second, the findings have practical implications for policymakers by identifying strategies to improve access to essential commodities and to enhance the living standards of middle-class households in Bangladesh. Third, the study contributes to achieving Sustainable Development Goals (SDGs) 1 (No Poverty) and 2 (Zero Hunger). Finally, drawing on Bourdieu's social capital theory, it advances understanding of how individuals and families mobilize social networks to cope with economic hardship and adapt to rising living costs.

2. Literature review and theoretical framework

Middle-class consumers in Bangladesh typically rely on fixed incomes, making them particularly vulnerable to price volatility (Khan, 2016). Rather than spending on nonessential luxuries, they often struggle to cover basic needs such as food, healthcare, and education (Goswami & Bandyopadhyay, 2003). Growing economic inequality in Bangladesh has further intensified these challenges. Urban middle-class households are especially vulnerable because stagnant salaries and persistent inflation have eroded their purchasing power (Hossain, 2011). Although middle-class incomes have not increased proportionally, the prices of essential goods and services, including food, clothing, fuel, and healthcare, have continued to rise (Campbell & Hercowitz, 2019). Consequently, many households struggle to manage their limited incomes, often relying on debt to maintain basic consumption. At the same time, the widening gap between income growth and inflation forces families to prioritize essential needs, often at the expense of quality. Another common coping strategy is to reduce discretionary spending on entertainment, fashionable clothing, and dining out to meet basic household needs (Kumar & Chand, 2010). As a result, prolonged financial pressure adversely affects both physical well-being and overall quality of life.

Several recent studies identify price volatility as one of the most significant challenges for middle-class consumers in Bangladesh. Tao (2021) argues that market instability, inflation, and economic uncertainty disproportionately affect middle-class households because their fixed monthly incomes often fall short of essential expenses. Similarly, Yamin (2016) found that opaque pricing practices and market manipulation contribute to economic instability and financial insecurity, forcing households to adjust their consumption patterns. Deb et al. (2021) further demonstrate that, despite being relatively better off than lower-income groups, middle-class households remain highly vulnerable during periods of rapid price increases. These findings highlight the economic pressures faced by the middle class and underscore the need for greater policy attention (Rahman, 2019).

Mendoza and Thelen (2008) argue that disparities in market access between urban and rural areas place additional pressure on middle-class consumers when buying essential commodities. Stephens (2023) further notes that social expectations become particularly demanding during cultural and religious celebrations. Events such as Eid, Puja, and wedding ceremonies often create additional financial strain, as families are expected to purchase new clothing, gifts, and special food items. Previous research also suggests that middle-class consumers are frequently compelled to increase their spending during these periods despite financial constraints. Furthermore, inadequate price regulation and limited subsidy mechanisms have contributed to economic hardship. Although subsidies for essential commodities may provide temporary relief, they are unlikely to be effective unless inflation is adequately controlled. Therefore, stronger policy intervention is needed to improve the affordability of essential commodities for middle-class households (Raihan, 2013).

Sen's (1981) entitlement theory offers a relevant framework for examining the barriers middle-class consumers in Bangladesh face in accessing essential commodities. According to Sen (1981), access to resources, rather than mere availability, determines whether individuals can satisfy their basic needs. From this perspective, middle-class households' purchasing behavior offers valuable insight into the economic and social barriers that shape access to essential commodities.

Resources individuals draw on through their social networks constitute social capital. These resources include relationships with individuals, institutions, and social organizations (Bourdieu, 1986). Bourdieu's social capital theory is particularly relevant to this study because, although previous research has examined the adaptive strategies middle-class consumers adopt during periods of price increases, little is known about how social capital helps middle-class households in Bangladesh cope with these challenges. Existing research applying this theoretical perspective in the Bangladeshi context remains limited. Accordingly, this study addresses the following research questions:

RQ1. What barriers do middle-class consumers face in accessing essential commodities?

RQ2. What adaptive strategies do middle-class consumers employ to cope with these barriers?

3. Methodology

The study was approved by the Khulna University Ethical Clearance Committee (Date: September 8, 2025, and No. KUECC-2025-09-118)

3.1. Research design

Most prior studies have relied on quantitative approaches, which often overlook consumers' deeper, more subjective experiences. To address this gap, the present study adopted a qualitative research design. Data were collected through in-depth interviews (IDIs) and focus group discussions (FGDs).

3.2. Study area

As shown in Figure 1, this study was conducted in Khulna and Jashore, two prominent districts in southwestern Bangladesh. These areas are important centers of consumer activity. Khulna, the third-largest city in Bangladesh after Dhaka and Chittagong, is located near the Sundarbans and the Rupsha River. It covers 4,394.46 km² and has 188,579 households and a population of 719,557 (Population and Housing Census, 2022). Khulna was selected for its high level of urbanization, industrial development, and concentration of middle-class consumers.

In contrast, Jashore is located near the Indian border and serves as an important transportation hub. It has a population of approximately 3.2 million, comprising 798,032 households with an average household size of 3.79 persons (Census of Bangladesh, 2022). Jashore was selected to represent semi-urban settings, where issues related to market accessibility, transportation costs, and limited household income are more pronounced. Accordingly, data were collected from central urban neighborhoods in Khulna and from semi-urban communities and marketplaces in Jashore to capture a broader range of consumer experiences.

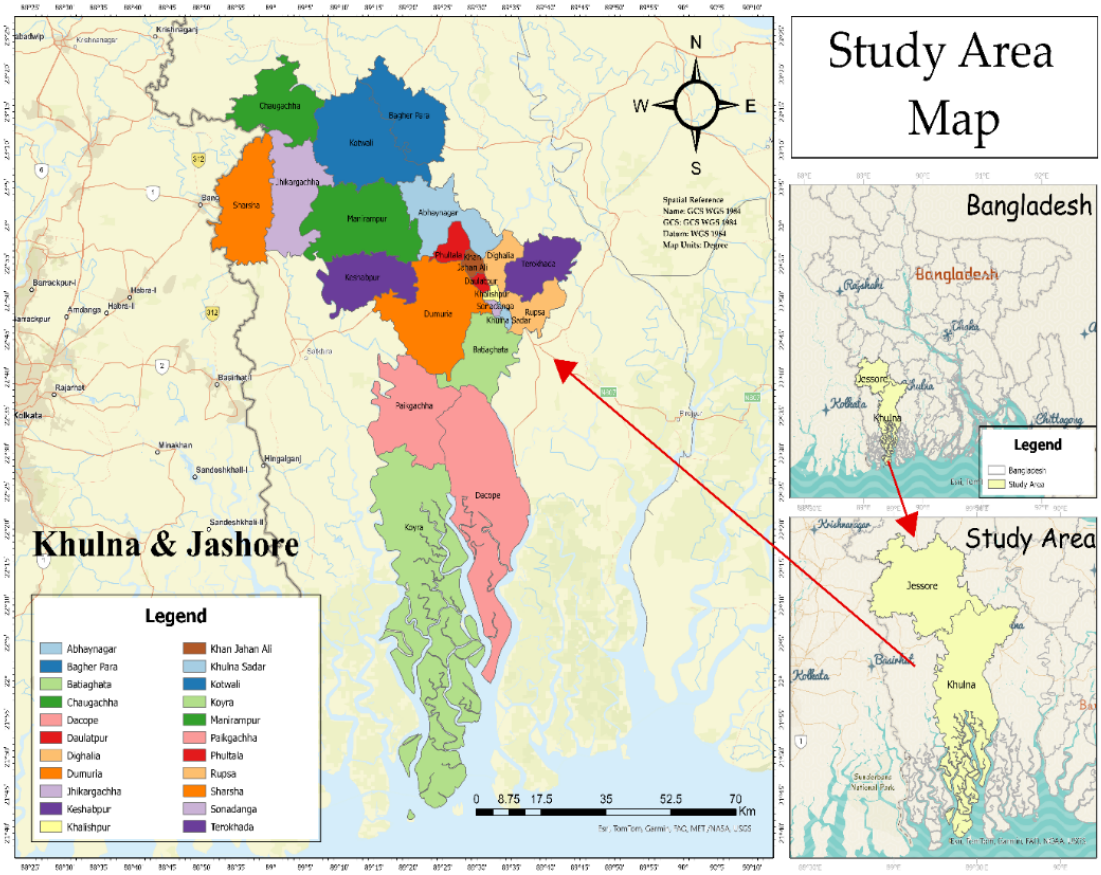


Figure 1. Study area map

Source: Generated by the author using the BD Shapefile from Humanitarian Data Exchange in ArcGIS Pro 10.8.2 Software

3.3. Unit of analysis

Participants were eligible for inclusion if they were at least 20 years old, had completed secondary education, lived in either Khulna or Jashore, and had a monthly household income between 12,900 and 21,500 BDT (Al Fidah et al., 2024).

3.4. Sampling

Purposive sampling was used to recruit participants. According to Palinkas et al. (2015), this strategy is appropriate for selecting information-rich participants who can provide meaningful insights into the research topic. The study included 29 participants. Of these, nine participated in in-depth interviews, while the remaining 20 took part in two focus group discussions, each with ten participants. Data collection continued until thematic saturation was reached, indicated by the recurrence of similar experiences and the absence of substantially new information. At this point, the sample was considered sufficient to capture the diverse experiences of middle-class consumers.

3.5. Fieldwork

After developing a semi-structured interview guide, fieldwork was conducted from September to October 2024. Primary data were collected in Bengali through face-to-face interviews and focus group discussions. Each in-depth interview lasted 28–35 minutes, and each focus group discussion lasted 60–90 minutes. With participants' informed consent, all sessions were audio-recorded. Before data collection began, participants were informed that their anonymity and confidentiality would be strictly protected.

3.6. Data processing, analysis, and interpretation

After data collection, the interview recordings were transcribed, translated into English, and prepared for analysis through editing, coding, and data organization. The data were analyzed using Braun and Clarke's (2006) six-phase thematic analysis framework. First, the researchers familiarized themselves with the data. Next, they generated initial codes, identified potential themes, and reviewed and refined them. Finally, they defined and named the themes and compiled the findings into the final report.

4. Findings

Table 1 presents the participants' sociodemographic and economic characteristics. Most participants were Muslim, although a small number of Hindu participants took part in FGD 2. Participants ranged from 26 to 42 years of age, and the average age of FGD participants was approximately 36 years. Most participants were married and lived with their spouses, while a small number were widowed, divorced, or single. Their educational qualifications ranged from the Secondary School Certificate (SSC) level to master's degrees, with the Higher Secondary Certificate (HSC) and bachelor's degrees the most common.

Participants were employed in a variety of occupations, including teaching, small business ownership, driving, security services, and freelance work. Among the IDI participants, monthly household income ranged from BDT 15,000 to BDT 22,500. The average monthly household income was BDT 18,450 for FGD 1 participants and BDT 19,600 for FGD 2 participants. Housing conditions also varied, with some participants living in rented accommodation and others in owner-occupied homes. Several participants reported additional income sources, including private tutoring and freelance work.

Using Braun and Clarke's (2006) thematic analysis framework, the researchers identified two main themes: barriers middle-class consumers faced in accessing essential commodities and the coping strategies they adopted in response.

4.1. Theme 1. Barriers faced by middle-class consumers in accessing essential commodities

Middle-class consumers in Bangladesh face significant barriers to accessing essential commodities. This theme comprises four categories: (a) limited income, (b) rising prices of everyday goods, (c) market accessibility and transportation costs, and (d) cultural norms and societal expectations.

4.1.1. Limited income

Participants frequently identified limited income as a major constraint affecting their ability to maintain an acceptable quality of life. Many reported that it was increasingly difficult to make ends meet because their earnings were insufficient to cover essential household expenses. As a result, they felt trapped in a cycle of financial insecurity.

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Table 1. Socio-demographic information of the participants

Serial no	Location	Religion	Age	Gender	Marital status	Level of education	Occupation	Monthly income	Housing type	Additional income sources
IDI 1	Harintana, Khulna	Islam	26	Male	Married	Bachelors	Photocopy computer shop	15-18k	Rented	No
IDI 2	Harintana, Khulna	Islam	28	Male	Married	HSC	Shop	15k	Owned	No
IDI 3	Sonadanga, Khulna	Islam	35	Male	Married	SSC	Tea stall	18-22k	Rented	No
IDI 4	Daulotpur, Khulna	Islam	34	Male	Married	HSC	Night guard, secondary school	15,000	Owned	No
IDI 5	Manirampur, Jashore	Islam	36	Female	Married	Bachelors	School teacher	21,000	owned	Yes, private tutoring
IDI 6	Manirampur, Jashore	Islam	38	Male	Married	Bachelors	General employee	22,200	Rented	No
IDI 7	Jhikorgacha, Jashore	Islam	42	Male	Married	Masters	Office assistant	20,000	Rented	Yes, freelance tutoring
IDI 8	Jhikorgacha, Jashore	Islam	29	Female	Married	Bachelors	Marketing executive	22,500	Owned	Yes, freelance work
IDI 9	Manirampur, Jashore	Islam	33	Male	Married	HSC	Driver	20,000	Rented	No
FGD 1	Gallamari, Khulna	Islam=10 Others=0	Avg. 36.5	Male=7 Female=3	Married=9 Widow=1	SSC=3 HSC=2 Bachelors = 4 Masters = 1	Teaching=2 Business=4 Worker= 2 Job=2	Avg. 18,450 BDT	Own=5 Rented=5	Yes=6 No=4
FGD 2	Manirampur, Jashore	Islam=8 Sanatan=2 Others=0	36.2 years	Male = 5 Female=5	Married= 8 Divorced = 1 Single = 1	SSC=3 HSC=3 Bachelors = 3 Masters = 1	Teaching=1 Business=1 Worker=1 Job=3 Freelance=1 Retail= 3	Avg. 19,600 BDT	Own= 4 Rented=6	Yes = 3 No = 7

Source: Field data, 2024

One participant stated,

"With a fixed income of 15,000 Takas, I am limited like any other person. I try my best, but cannot manage. There always remains a gap between what we want and what we get. Although essential goods prices increased significantly, my salary hasn't changed at all. I have to compromise on my food, healthcare, or my children's education expenses." -(IDI 4, Male, Age 34).

This statement reflects the financial pressure faced by individuals who rely on fixed incomes. Although many middle-class consumers receive a regular income, it is often insufficient to cover essential expenses. Sen's (1981) entitlement theory is relevant here because the central problem concerns effective access rather than the physical availability of commodities. Essential goods may be available in the market, but financial constraints prevent many middle-class households from obtaining them. These barriers reflect not only individual income limitations but also the broader effects of economic instability on consumption opportunities and adaptive behavior. To mitigate these challenges, government policies that maintain price stability and adjust salaries in line with inflation could better protect middle-class consumers.

4.1.2. Rising daily commodity prices

Participants frequently identified rising prices, particularly for food products, as a major barrier to purchasing and consuming essential goods. Many households found it increasingly difficult to manage their budgets because of sudden and unpredictable increases in the prices of everyday commodities, including fruits and vegetables.

As one female participant in FGD 2 stated,

"I have seen a hike in the prices of fruits and vegetables lately. The price of a bunch of bananas, which I used to buy for my kids, has increased by around 30-40 Takas from what it was a few days back. I stopped buying fresh fruits and vegetables altogether when the cost of bananas increased. These days, I purchase only the basics: potatoes, onions, and rice. As for the rest, it is quite a luxury, and I cannot afford it. It makes me a little sad because I want to be able to feed better food for my kids." -(FGD 2, Participant 4, Age 38)

Commodity prices were perceived as increasingly volatile and unpredictable, making household budgeting and financial planning more difficult. Consequently, families were often compelled to buy cheaper alternatives because they could not accurately anticipate future costs. This finding aligns with Sen's (1981) entitlement perspective, which holds that access to basic necessities depends not only on nominal income but also on effective purchasing power. As prices rise, consumers' ability to access essential commodities declines, prompting them to adjust consumption patterns and prioritize basic needs. To strengthen consumers' entitlements and adaptive capacity, the government should prioritize stable income support, expanded livelihood opportunities, and measures that improve household financial resilience. These interventions could increase individuals' effective ability to access essential goods, particularly during periods of economic crisis.

Another IDI participant stated,

"Now even cooking oil and lentils feel like a luxury. I must examine them before buying. These things never bothered us before. The prices have risen so much now; I wonder whether we will be able to afford them next month." -(IDI 6, Male, age 38)

This statement demonstrates how inflation undermines the affordability of basic necessities for middle-class households. It also illustrates the psychological and emotional stress caused by rising prices and uncertainty about households' future ability to access essential goods.

4.1.3. Market accessibility and transportation costs

Participants expressed concern about the difficulties they encountered when trying to obtain high-quality goods from local markets. The availability and quality of essential commodities varied across locations. Many participants reported that nearby markets either lacked fresh products or sold them at relatively high prices. Consequently, they often had to travel farther to obtain better-quality goods or lower prices.

One female participant from FGD 2 explained,

"The neighborhood market next to my house, but the prices are exorbitant. To get better quality and comparatively cheaper food, I have to go to larger markets, but that takes more time and money on transport, so I end up settling for what I can get locally." -(FGD 2, Participant 2, Age 36)

Similarly, another female participant from FGD 2 stated:

"Transport costs have become a big problem. I can't afford transport to a better market every week, so we make do with what we have at the shop near us. I often need to spend some extra money on things due to the transport cost. It is frustrating for me when the cost of getting to the market exceeds the value of the groceries I need to buy." -(FGD 2, Participant 3, Age 40)

Sen's (1981) entitlement theory is also relevant to this finding. Although markets and transportation options may be physically available, financial costs can still pose substantial barriers to effective access. Participants' accounts show that even relatively small increases in transportation expenses can accumulate and place considerable pressure on household budgets. This problem could be reduced by developing competitive, well-regulated local marketplaces, introducing transparent, regularly updated price information systems, and expanding affordable digital purchasing options. These measures would also enable the government to monitor market conditions more consistently. Such measures could help consumers compare prices, avoid unnecessary travel, and make more cost-effective purchasing decisions.

4.1.4. Cultural norms and societal expectations

The social and cultural environment in Bangladesh strongly shapes middle-class consumers' purchasing behavior. Participants generally agreed that social pressure and cultural expectations during festivals and other celebrations made it extremely difficult to stay within their household budgets. Spending typically increased during these periods because individuals felt pressure to maintain their social status and meet family and community expectations. Festivals and cultural celebrations were identified as major drivers of household spending. Most participants reported that occasions such as Eid, Durga Puja, birthdays, and weddings prompted them to spend more on clothing, gifts, and special foods, even when it required them to reduce essential spending or take on debt.

One respondent stated,

"Eid has always been a cheerful occasion for everyone, but not for families like ours. Many people feel the pressure to buy new clothes and prepare special dishes at home. Last year, I spent a month repaying the debt I took to buy Eid clothes. It's not just about tradition but also about ensuring that my family does not feel ashamed." -(IDI 5, Female, age 36)

Similarly, another respondent commented on wedding costs.

"Weddings in our culture are a huge event, and going to one more or less means costing a lot of money. Gifting something to the bride and groom is necessary, along with wearing fine clothes. Last month, my cousin got married, and so I had to purchase a sari for my wife and a gift for the couple. For managing this situation, I had to spend almost half of my monthly salary, which later created a burden for me." -(IDI 7, Male, age 42)

Participants' accounts of financial strain during cultural occasions illustrate the interplay between social expectations and economic constraints. Sen's (1981) entitlement perspective suggests that rising prices of culturally significant commodities can restrict consumers' effective access to goods important for social participation.

To address this problem, the government could establish a Periodic Price Monitoring Team (PPMT) during major occasions such as Eid and Durga Puja. Consumer protection measures targeting essential festival-related commodities, including clothing, food products, and household necessities, could also prevent excessive price increases and ease financial pressure on middle-class consumers. Repeated references to social judgment and status maintenance were also evident throughout the interviews. Many participants explained that they purchased goods from reputable stores or chose specific brands to preserve their social image within their communities. The desire to conform to prevailing social norms often influenced their purchasing decisions, sometimes at the expense of their limited financial resources.

One IDI participant stated,

"Everybody in a society notices everything when it comes to appearance and buying, that is, what they wear, what they buy, and where they buy. During the time of Eid, I feel the need to shop from good stores, as I do not want my relatives to feel embarrassed if someone asks them where they got their clothing from. Finding the right outfits isn't about unwanted luxuries, but creating a fitting image in order to match our social status." -(IDI 2, Male, age 28)

Participants also reported that the growing use of social media intensified pressure to maintain a particular standard of living. Participants described feeling compelled to display their purchases and leisure activities on

social media. Exposure to others' possessions and lifestyles also generated feelings of inadequacy when participants could not afford similar goods or experiences. The inability to achieve the idealized lifestyles portrayed on social media was therefore associated with negative psychological effects.

For example, one male participant in FGD 1 stated,

"Due to social media, everything is worse. Seeing people post all over social that's like "look at my new clothes!" or "look at my new trip!" or "look at this fancy food!" makes me feel like a loser. I can hardly manage essentials while there seems to be plenty of money around for other 'things. I always make comparisons." -(FGD 1, Participant 1, Age 28)

Overall, social and cultural pressures strongly shape the spending behavior of middle-class households in Bangladesh. Festivals and special occasions create strong expectations to spend beyond normal household budgets, often to maintain class identity and social status. Social media platforms such as Facebook and Instagram further reinforce these consumption pressures by encouraging social comparison and promoting purchasing patterns that may exceed households' financial capacity. Consumer awareness programs and financial literacy initiatives could help middle-class consumers critically evaluate socially and digitally driven consumption pressures and make purchasing decisions that better align with their financial circumstances.

4.2. Theme 2. Coping strategies for overcoming barriers to accessing essential commodities

Middle-class families in Bangladesh are increasingly affected by rising inflation and stagnant incomes. To cope with these pressures, they adopt a range of strategies, some of which may harm their financial and emotional well-being. These strategies fall into four categories: (a) budgeting and prioritizing, (b) altering spending habits, (c) seeking discounts and alternatives, and (d) relying on credit or loans.

4.2.1. Budgeting and prioritizing

Participants identified budgeting and prioritizing as the most important strategies for managing limited household finances. Carefully allocating income to essential expenses, while postponing or eliminating less important expenditures, helped families meet their basic needs. This often involved careful meal planning, buying in bulk, and strictly controlling household spending.

To continue affording essential goods and services, many families deprioritized non-essential expenditures such as clothing, entertainment, and household improvements.

One participant from FGD 2 stated:

"We prioritize spending way more now. Rent and groceries take up the largest portion of our salary. Things like transport and school fees come after those two expenses. Anything that isn't essential must wait. I no longer purchase new clothes for myself, and we do not eat out anymore. The basics have to come first." -(FGD 2, Participant No: 4, Male, age 36)

Several focus group participants reported postponing or reducing certain expenses while trying to balance essential costs such as rent, utility bills, and food. As daily living expenses rose, participants became more selective in their spending and prioritized their most urgent household needs.

4.2.2. Altering spending habits

Participants adjusted their spending in response to declining purchasing power. Common coping strategies included buying smaller quantities, buying only essential items, postponing nonessential purchases, and choosing cheaper or lower-quality products.

One participant explained how inflation had changed their shopping habits:

"Each week, we purchased some meat or fish, even if only in small quantities. The items are for only special occasions now. I purchase rice and lentils first, and then the cheapest vegetables I can find, even if they are low in nutrients. It's as if we are merely trying to live." -(IDI No: 8, Male, age 55)

Several participants reported that they had begun choosing cheaper brands or unbranded products due to rising prices. Similarly, another participant in FGD 2 stated:

"I am not only cutting back. I am surviving. In the past, I purchased good-quality items for my family. For example, I got good rice, fresh fish, and branded oil. Now, I am forced to buy something cheaper. The quality isn't the same, but what other option do I have? I wanted to buy a toy for my child last week, but I could not afford it after paying for the groceries." - (FGD 2, Participant No: 2, Male, age 34)

Participants noted that these changes often came at considerable emotional cost, particularly for those with children. Many described feelings of guilt and helplessness stemming from their inability to adequately provide for their families' basic needs.

4.2.3 Finding discounts and alternatives

To reduce household spending, participants actively sought discounts and lower-cost alternatives. Several reported visiting wholesale markets and waiting for end-of-season sales before making major purchases. Many families also switched to more affordable or unbranded products. One participant from FGD 1 stated:

> *"I have never been this sale-conscious, but nowadays I always plan my shopping based on offers. When I see a discount, I tend to buy more than what I need to stock up for later. The additional Taka I save allows me to pay my bills or buy medicine.".* -(FGD 1, Participant No: 5, Male, age 40)

This statement illustrates how financial strain reshaped participants' purchasing behavior and prompted them to seek more affordable alternatives.

4.2.4. Reliance on credit or loans

Many participants described credit and loans as short-term coping strategies used during emergencies or periods of unusually high spending, such as festivals or medical crises. Participants commonly borrowed money from friends, family, neighbors, or local vendors. However, they also noted that these debts often became burdensome over time. One IDI participant stated:

> *"Sometimes I have to borrow money either from my friends, relatives, or neighbors. For example, a few days ago, my youngest daughter's illness made me unable to pay the doctor's fee and the medicines. I am terribly ashamed to ask for money from anyone. But when my child falls ill, I have to do everything."* -(IDI 7, Male, age 42)

This finding aligns with Bourdieu's theory of social capital. Borrowing money from friends, neighbors, or relatives during periods of financial hardship shows how participants mobilize social networks to overcome economic difficulties and adapt to rising prices. Although credit provided temporary relief, many participants emphasized the long-term stress and insecurity it created, particularly as debts accumulated.

5. Discussion and conclusions

The findings indicate that financial constraints, limited market access, and price volatility are major barriers to middle-class consumers in Bangladesh accessing essential commodities. Participants also emphasized that income characteristics, including fixed and seasonal earnings, strongly influence their ability to maintain a stable standard of living. Khan (2016) similarly found that Bangladesh's middle class is particularly vulnerable to price fluctuations and rising living costs, a finding consistent with the present study.

Participants frequently reported unpredictable price increases for staple products, such as rice and cooking oil, which disrupted household planning and budgeting. Pinstrup-Andersen (2016) found that market instability negatively affects consumption patterns, particularly among households that depend on fixed incomes. Participants from less urbanized areas also reported that rising transportation costs compelled them to rely on local vendors, who sometimes charged higher prices.

Households' socioeconomic circumstances were another major factor shaping access to essential commodities. Because incomes remained relatively fixed while living costs continued to rise, participants commonly prioritized food, healthcare, and education over discretionary spending. Cavusgil et al. (2018) similarly observed that middle-class households often sacrifice nonessential consumption to meet basic needs. Hossain (2011) also provided evidence that urban middle-class households face substantial financial pressure from stagnant wages and rising living costs. Participants in the present study expressed similar concerns about the widening gap between income and inflation. Kumar and Chand (2010) found that households adjust their current consumption patterns to meet immediate needs, sometimes at the expense of long-term well-being and quality of life. The present findings extend this argument by showing that income-level differences within the middle class produce varying degrees of vulnerability and adaptive capacity.

Participants repeatedly cited inflation as a major factor eroding their purchasing power. Participants explained that they tried to allocate a larger share of their unchanged income to essential goods whose prices had risen sharply. This finding aligns with Abdujalilov and Sheraliev (2024), who argued that inflation reduces consumers'

real income and encourages households to prioritize necessities over discretionary purchases. Ehrmann et al. (2018) similarly observed that inflation may prompt consumers to buy lower-quality goods or smaller quantities.

Participants in the present study described shifting from higher-quality products to cheaper alternatives. Although these products helped them stay within their budgets, they were often perceived as less nutritious or lower in overall quality. Such adjustments may therefore reduce household well-being over time. Moreover, rising prices were not experienced solely as an economic problem. Participants also reported emotional distress, tension within families, and anxiety about their ability to meet essential needs in the future. Thus, financial hardship was closely intertwined with psychological and social pressures.

These findings also align with Khandker (2009), who suggested that middle-class households must continually reprioritize their needs amid economic pressure. Most participants reported cutting back on nonessential items, such as entertainment and clothing, and reallocating their limited resources to food, education, and other basic needs. The study also identified collective and family-related pressures, particularly during religious festivals, weddings, and other social occasions. Participants explained that they often felt compelled to spend money on celebrations and socially expected purchases despite limited financial resources. This finding supports Stephens' (2023) argument that sociocultural norms play an important role in shaping middle-class consumption decisions across demographic groups.

The findings further show that middle-class consumers cope with economic pressure by budgeting, seeking discounts, adjusting their consumption habits, and relying on credit. This aligns with Abdu (2022), who noted that middle-class households increasingly adopt cost-reduction strategies during periods of financial difficulty. Participants planned purchases around sales and discounts, bought goods in bulk when possible, and chose less expensive alternatives to stretch their limited budgets.

Credit and informal loans were also common coping strategies. Participants borrowed from friends, relatives, local vendors, or financial institutions to cover essential expenses. This finding aligns with Gang et al. (2013), who reported that middle-class households often use credit as a short-term response to financial pressure, potentially increasing their risk of becoming trapped in debt. Although borrowing provided immediate relief, participants emphasized that accumulated debt intensified financial insecurity and emotional stress over time. These findings support Sen's (1981) entitlement theory.

Sen's approach emphasizes that the availability of commodities does not necessarily ensure effective access. The present findings show that middle-class households may be unable to obtain essential goods because low or stagnant incomes, rising prices, transportation costs, and other market-related expenses weaken their purchasing power and restrict their effective entitlements. As a result, households must reduce consumption, compromise on quality, or eliminate nonessential purchases.

The findings also support Bourdieu's (1986) social capital theory, which explains how individuals and households mobilize social relationships and networks to access resources. Participants relied on relatives, friends, neighbors, local vendors, and other social contacts to obtain information, discounts, credit, and informal loans. These practices demonstrate how social capital can help households address financial constraints and market-access challenges. Participants with stronger social networks appeared to have greater access to informal support, whereas those with weaker networks had greater difficulty obtaining essential commodities.

5.1. Theoretical implications

By integrating Sen's (1981) entitlement theory with Bourdieu's (1986) social capital theory, this study offers complementary explanations for the barriers middle-class consumers face in accessing essential commodities and the coping strategies they employ. Sen's entitlement perspective helps explain how income constraints, inflation, transportation costs, market accessibility, and sociocultural expectations limit consumers' effective access to essential goods. The findings extend Sen's entitlement approach by showing that access is shaped not only by income and market prices but also by geographic accessibility, transportation costs, cultural obligations, and social expectations. Even when essential goods are physically available, consumers may lack the purchasing power or practical opportunity to obtain them.

Bourdieu's social capital theory offers an additional explanation for how middle-class consumers respond to these constraints. Participants drew on social relationships and institutional connections to access informal loans, credit, market information, discounts, and other forms of support. The study therefore shows that coping with economic hardship involves both individual strategies, such as budgeting and changing consumption habits, and relational strategies rooted in family, community, market, and institutional networks.

5.2. Practical implications

The findings have several implications for policymakers, businesses, and civil society. First, policy interventions should address not only income constraints but also the broader conditions that affect access to essential commodities. Government measures could include regular monitoring of essential commodity prices, stronger enforcement of fair-pricing regulations, targeted subsidies during economic crises, initiatives to reduce transportation costs, and improved access to local markets. Such measures may ease affordability pressures and strengthen the purchasing power of middle-class households during periods of rising living costs.

Second, retailers and service providers should adopt consumer-oriented practices that improve middle-class consumers' purchasing flexibility. Affordable product bundles, seasonal discounts, loyalty programs, smaller package sizes, and flexible payment options can help households manage limited budgets. Ethical pricing, transparent product information, and responsible marketing practices can also strengthen consumer trust and reduce vulnerability to misleading or exploitative commercial practices.

Third, community leaders, social organizations, and educational institutions can contribute by promoting financial literacy, responsible consumption, and more affordable cultural practices. Awareness campaigns may help reduce unrealistic spending expectations for festivals, weddings, and other social occasions. They may also encourage consumers to critically evaluate the consumption pressures generated by social media and social comparison. Collectively, these interventions could reduce financial stress and improve the standard of living for middle-class households in Bangladesh.

5.3. Limitations and future research directions

This study has several limitations. First, the research was conducted in selected areas of the Khulna and Jashore districts, so the findings may not fully represent the experiences of middle-class consumers across Bangladesh. Second, the qualitative design prioritizes depth and contextual understanding over statistical generalizability. Future research could employ mixed-methods designs with larger, more diverse samples from different regions of Bangladesh. Such studies could examine whether the barriers and coping strategies identified here are also observed among other segments of the middle class. However, larger samples would support broader analytical generalization rather than automatically making the findings representative of all middle-class consumers. Future studies could also hold focus group discussions with participants from diverse occupational and income groups. This approach may reveal how barriers to accessing essential commodities and coping strategies vary by profession, income level, household structure, and socioeconomic background.

In addition, key informant interviews with policymakers, market regulators, consumer-rights organizations, retailers, and industry representatives could yield further insights into institutional, regulatory, and market-related barriers. Comparing stakeholder perspectives with consumer experiences could also deepen understanding of the gap between policy design and implementation. Finally, comparative and longitudinal research across regions, socioeconomic groups, and countries could offer deeper insights into how middle-class consumers adapt to inflation and rising living costs over time. Such research may also clarify how economic shocks affect household consumption, social relationships, financial resilience, and long-term well-being.

Author contribution

Obaydur Rahman: Concept, design, data collection and entry, literature search, writing draft. **Ety Rani:** Design, supervision, writing, and critical review.

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Vocational tourism education at the secondary level in Türkiye and the competencies of trainee students from the perspective of tourism professionals

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Abstract

This study examines vocational tourism education at the secondary level in Türkiye by assessing trainee students' core competencies from the perspectives of hotel department managers. Drawing on Bandura's Social Learning Theory and organizational size theory, it investigates how organizational scale and trainee density influence student performance during work-integrated learning. Data were collected through a census of 190 department managers in hotels operating under an official ministerial protocol and analyzed using Confirmatory Factor Analysis (CFA) and Analysis of Variance (ANOVA). Findings indicate that students demonstrate significantly higher proficiency, cooperation, workplace harmony, and responsibility in smaller hotels (40 or fewer employees) and in settings with lower trainee density. However, notable weaknesses emerge in foreign-language proficiency and autonomous problem-solving. The study concludes that optimizing trainee density and learning environments, alongside curriculum redesign and stronger school–industry collaboration, can enhance the effectiveness of vocational tourism education.

1. Introduction

Tourism is a global industry, characterized by flows of people, capital, information, symbols, and material goods that circulate and penetrate almost every corner of the world (Caton et al., 2014). The global movement of people requires intercultural communication. Every human being is a citizen of the world. Global citizenship is the commitment to the entire planet Earth and the human family (Caton et al., 2014). Global citizenship ensures that students have opportunities to develop the skills necessary to operate in an increasingly interconnected global society (Stoner, 2014).

The world's resources are rapidly depleting, and for this reason, the concept of sustainability has emerged. When the world is considered a system, it must use its resources sustainably to ensure its continued existence (Sharpley, 2000). The rapidly changing and developing world has brought many new concepts, such as global citizenship, intercultural communication, and sustainability. These concepts should be included in the tourism education curriculum.

Vocational education is important in today's societies because it enables individuals to specialize in a particular field and acquire professional skills. Globalization, technological innovation, and rapid workforce transformation have further increased the need for vocational education. Many countries around the world encourage and support vocational education to adapt to rapid labor-market changes and reduce unemployment rates (OECD, 2023). This type of education has become a critical tool for individuals to achieve their career goals and contribute to economic development. While vocational education makes individuals more competitive in the labor market, it also significantly increases social welfare (ILO, 2021). Technological advances are transforming workforce requirements and constantly changing skill sets across occupations. In this context, vocational education plays a critical role not only

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in improving individuals' current skills but also in preparing them for future workforce demands (World Economic Forum, 2022). Therefore, while vocational education gives individuals the knowledge and skills to succeed professionally, it also contributes to economic growth and helps create a more efficient and sustainable workforce.

This article draws inspiration from the study "Are we teaching the right things?" by McKercher et al. (2023). When vocational education was introduced at the secondary level in Türkiye, the focus remained on tourism education. The following sections systematically address key baseline questions about rationale, curriculum content, educational structure, and industry efficacy, and provide a detailed empirical evaluation.

2. Literature review

Vocational education, which aims to meet social, economic, and personal goals, is important and valuable (Billett, 2014) and a key factor in society's sustainable development (Terentyeva et al., 2018). Vocational education is a subsystem of the education system. It aims to provide knowledge and skills related to a profession (Kılınç, 2013) and to prepare students to work in specific fields (Yasdin et al., 2023). Alkan et al. (1988) define vocational education as providing knowledge, skills, and practical application abilities related to a profession, while Widianingsih et al. (2018) and Kasnar and Santoso (2009) define it as education that prepares students to work in a specific field. In the Turkish national education system, vocational education is defined as "the type of education that provides the necessary knowledge and skills to train qualified technical personnel in professions needed in all areas of social life" (MTEGM, 2020). Although authors have offered different definitions, vocational education commonly provides individuals with knowledge and skills related to a profession.

Vocational education, which helps develop the economy by reducing unemployment (Abdullah et al., 2021), focuses on developing the practical and technical knowledge required for an individual to be successful in a job (Raj et al., 2024) and better prepares students for the labor market (Liu et al., 2024). Students in vocational and technical education develop not only knowledge and skills in the relevant field but also self-confidence and personal responsibility (Sanderse, 2021). Vocational education has become a key area of social policy and is no longer of interest only to the education community (Pugacheva, 2016). Eichhorst (2015) divided vocational education into three groups: school-based vocational training and education, formal apprenticeship schemes, and dual vocational training. In Europe, countries have adopted very different school structures, with the main difference being the focus on job transition (Brunetti and Corsini, 2019). For example, in Germany, the central government defines the vocational education curriculum, while the states individualize it (Hommel, 2024). In countries like Germany, apprenticeship systems and workplace-based training are common, whereas in England and Australia, private-sector-supported certification programs stand out (Baum, 2007). Finland is cited as an example of student-centered, project-based learning (English et al., 2022). Aykaç (2002), comparing vocational education in Türkiye with that in Germany, Switzerland, France, Spain, and Greece, notes significant differences among the countries but also that they have reformed their vocational education systems.

In the contemporary era, the global landscape of hospitality education is undergoing profound shifts driven by technological disruptions, demanding continuous re-evaluation of vocational competencies. Recent literature emphasizes that the digital transformation of tourism education presents unprecedented opportunities and challenges, requiring institutions to align classroom instruction with emerging digital ecosystems (Yang, 2025). For instance, integrating immersive technologies, such as augmented reality (AR), into event and hospitality training has been shown to significantly enhance students' experiential value and contextual authenticity (Ju et al., 2025). To meet these shifting paradigms, instructional innovation must systematically integrate artificial intelligence (AI) literacy into core tourism curricula, using pedagogical frameworks such as the TPACK model to build technical adaptability in the future workforce (Chan et al., 2026). Concurrently, as the industry becomes increasingly digitized and complex, cultivating robust professional profiles requires an unwavering focus on teaching business ethics, ensuring secondary and higher vocational graduates have the moral frameworks needed to navigate diverse operational dilemmas (Tran, 2026). Consequently, assessing whether current school-industry collaborations in Türkiye adequately prepare students for this complex, high-tech, and ethically demanding market remains a critical research gap.

3. Methodology

The study was approved by the Kastamonu University Social and Humanities Research and Publication Ethics Committee, dated 02/02/2022, decision number 7.

This section provides an overview of vocational education at the secondary education level in Türkiye. The system's structure and functioning are examined through five guiding questions. The fifth question specifically focuses on the practical training component, exploring where students undertake their workplace-based vocational

training and, from the perspective of department managers, whether the training provided is sufficient to develop the expected vocational competencies. This question is particularly significant, as it forms the starting point for the present study and provides the conceptual basis for the empirical investigation.

3.1. Why is vocational tourism education provided?

The tourism sector in Türkiye is growing rapidly, affecting other sectors both directly and indirectly. Tourism revenues rose from $326 million in 1980 to $54,316 million in 2023, and the number of tourists visiting Türkiye rose from 1,288 thousand in 1980 to 54,077 thousand in 2023 (TUIK, 2023). Türkiye's tourism plans are growing. For this reason, tourism is both a locomotive and an integral sector for development in Türkiye. Satisfying guests visiting Türkiye is essential for sustainable tourism. To ensure guest satisfaction, the tourism sector requires employee training. That is why Türkiye provides tourism education.

3.2. What is taught?

In Türkiye, children attend primary school from ages 7 to 10, then middle school from ages 11 to 14, and subsequently attend high school or vocational high school from ages 15 to 18. Vocational education begins in the 9th grade after basic education. Vocational training is offered in 53 fields and 114 branches (Çalışkan, 2022). At the secondary level, vocational high schools offer tourism education, where accommodation and travel services and food and beverage services are taught together. These schools implement intensive education, meaning theoretical and practical courses are delivered in blocks, similar to Germany's dual education system (Eichhorst, 2015). Table 1, prepared by the authors, shows the proportional distribution of courses in vocational high schools.

Table 1. Proportional distribution of courses in vocational high schools

Level	Vocational courses (%)	Academic courses (%)	Others* (%)
9th grade	25	64	11
10th grade	29	60	11
11th grade	38	33	29
12th grade	69	22	9

Source: Created by the authors. *Elective courses, guidance and directions

In vocational high schools that offer tourism education, accommodation and travel services and food and beverage services are taught together. The field of accommodation and travel services has three branches: accommodation services, travel agencies, and animators. There is only one branch in food and beverage services. Table 2 shows the curriculum framework for these fields and branches.

3.3. How is it taught?

Vocational high schools in Türkiye that offer tourism education implement intensive education. Between the second week of October and the second week of April, students receive theoretical training at school. Between May and September, they receive practical training in businesses, mostly in hotels. This system is similar to the dual vocational training system implemented in countries such as Austria, Denmark, Germany, and Switzerland (Eichhorst, 2015). Students attend these schools for 4 years, from 9th to 12th grade. The most common type of tourism in Türkiye is sea, sun, and sand tourism, also known as 3S (Alvarez, 2010). Therefore, students receive theoretical training at school from October to April and practical training in businesses from May to September, during the high tourism season. Students are insured against work accidents and occupational diseases from the 9th grade, when they start school, until the 12th grade, when they graduate. The school monitors their insurance procedures. Students receive skills training in enterprises in the 11th and 12th grades and earn 60% of the current minimum wage while working there.

3.4. Who teaches?

Theoretical training is provided between October and April at vocational high schools that offer tourism education. Teachers who graduated from universities in these fields and were appointed by the Ministry of National Education teach courses in accommodation and travel services and food and beverage services. Master instructors oversee practical training in enterprises; they have completed the Business Pedagogy (Master Instructorship) courses offered by the Ministry of National Education and are employed by the enterprise where students undergo practical training.

Table 2. Framework curriculum

Accommodation and travel services			Food & beverage services
Accommodation services branch	Travel agency branch	Animation branch	Food and beverage services branch
Professional development workshop	Professional development workshop	Professional development workshop	Professional development workshop
General tourism	General tourism	General tourism	Nutrition principles and hygiene
Accommodation and travel services workshop	Accommodation and travel services workshop	Animation services	Basic food production and service workshop
Reservation at the front desk	Tourist guidance	Special organization applications	Professional foreign language
Guest check-in and check-out Procedures	Travel agency workshop	Sports activities in animation Workshop	Cooking workshop Service workshop
Housekeeping workshop	Anatolian culture	Technical support in animation	Kitchen services management
Front office services workshop	Agency package programs workshop	Preparation for working life	Vocational training in businesses
Sustainable tourism	Sustainable tourism	Stage applications workshop	
Accommodation management	Reservation and statistical operations workshop	Dance and music activities workshop in animation	
Professional foreign language	Professional foreign language	Professional foreign language	
Vocational training in businesses	Vocational training in businesses	Vocational training in businesses	

Source: (www.megep.gov.tr). The authors compiled it using the framework curricula.

3.5. Are these efforts sufficient?

Under the 2018 protocol signed by the Ministry of Culture and Tourism and the Ministry of National Education in Türkiye, the inter-ministerial commission paired 54 of the 105 vocational high schools offering tourism education with 38 hotels holding tourism operation certificates. Some hotels are part of chains, while others are independent. After the pairing, 11th- and 12th-grade students from the 54 schools covered by the protocol are sent to the 38 businesses paired with their schools between May and September. To assess students' proficiency and educational readiness, the study evaluated the opinions of managers from the front office, service, kitchen, and housekeeping departments where students received practical training, as well as human resources managers.

3.6. Measurement instrument

To evaluate the operational effectiveness of secondary-level vocational tourism training in Türkiye, this study adopts an empirical, quantitative research design grounded in organizational size arguments and social learning considerations.

The survey instrument used in this study was adapted from Söyük and Gün (2017), who originally evaluated intern competencies in professional settings. This instrument was chosen because its operationalization of technical and behavioral competencies aligns precisely with the skill sets mandated by the hospitality operations framework curricula. After adapting the items to the tourism context, a panel of six senior tourism academics established content and face validity. Following their expert feedback, one redundant item was removed, and complex metrics were unbundled into separate items, yielding a final instrument comprising 7 demographic questions, 13 items measuring technical competencies, and 12 items capturing behavioral attributes (32 items total). A pilot study with 25 hotel department managers confirmed that the items were unambiguous, psychometrically sound, and contextually appropriate. No items were unclear or misunderstood after the pilot study. (In the survey, all department managers were contacted, and a complete count was made.)

3.7. Sampling and data collection

The target population comprises hotel department managers (Front Office, Human Resources, Food and Beverage, Housekeeping, and Kitchen/Head Chefs) in hotels subject to the official 2018 ministerial protocol. Because the study covers all 38 protocol-matched hotels across Türkiye, a census approach (a complete count) was used rather

than a traditional random sampling technique. Responses from 190 department managers reflect complete coverage of operational decision-makers in these protocol environments. According to methodological literature, a census approach eliminates sampling error and provides maximum statistical adequacy for the designated institutional framework, rendering traditional sample size calculations redundant. Data collection occurred between February and March 2022, using both in-person and online modes to accommodate pandemic-related health sensitivities (86 participants in an in-person survey, 104 participants in an online survey).

3.8. Procedural remedies for common method bias (CMB)

To address potential Common Method Bias (CMB) inherent in self-report survey designs, several ex-ante procedural remedies were strictly implemented during the questionnaire design and data collection phases, rather than relying solely on post hoc statistical testing. First, participants were explicitly assured of strict anonymity and confidentiality and told there were no right or wrong answers, reducing evaluation apprehension. Second, the physical and online layouts visually separated the independent demographic variables from the dependent competency items to prevent contextual priming. Harman's single-factor analysis showed that the largest factor explained only 44.99% of the total variance. Because this value falls below the conservative 50% threshold (Fornell & Larcker, 1981), the data are free of severe common-method bias. In the factor analysis, the 8th, 11th, and 15th items were removed because they loaded on more than one factor, and the 13th item was removed because its factor loading was below 0.40. In the factor analysis conducted after item extraction, item 14 was also removed because its factor loading was below 0.50.

3.9. Data Analysis Justification

Statistical analyses were conducted using SPSS 23.0 and AMOS 22.0. Confirmatory Factor Analysis (CFA) was systematically employed to validate the psychometric properties, construct validity, and factor structure of the adapted competency scale in the tourism industry. CFA is highly appropriate here because it rigorously tests whether the empirical data fit the pre-established theoretical measurement model. After factor stabilization, Analysis of Variance (ANOVA) tested the significance of mean differences across multi-level categorical groups (e.g., departmental roles, hotel sizes, and intern densities), isolating how structural traits influence managerial perceptions of intern performance.

4. Results

Reliability and validity results after factor extraction are presented in Tables 3 and 4. Factor loadings exceed 0.60, and Cronbach's alpha values exceed 0.70 (Cooperation & Harmony $\alpha = 0.941$; Responsibility $\alpha = 0.757$; Self-Improvement $\alpha = 0.717$; Sufficiency $\alpha = 0.803$), establishing reliability (Tavşancıl, 2005). The Average Variance Extracted (AVE) exceeds 0.50, and Composite Reliability (CR) exceeds 0.70, confirming convergent validity (Hu & Bentler, 1999). Discriminant validity is also satisfied because the square root of each AVE exceeds the corresponding inter-construct correlations (Table 4).

First, ANOVA results indicate a statistically significant difference among the task groups in cooperation and harmony ($p < 0.05$). Front office managers' scores are significantly higher than those of human resources and food and beverage managers. Regarding responsibility, front office managers score higher than managers in human resources, food and beverage, and housekeeping. Additionally, food and beverage managers scored lower on responsibility than head chefs. For self-improvement, front office managers' evaluation scores are significantly higher than those of food and beverage managers. Finally, overall intern student qualification scores are higher for front office managers than for those in human resources, food and beverage, and housekeeping.

Secondly, ANOVA tests on organizational size indicate a significant difference in the total number of personnel working in the enterprise ($p < 0.05$). Cooperation and harmony scores are lower for operations with 400 or more employees than for those with 40 or fewer employees and for those with 41–100 employees. Responsibility scores for businesses with 40 or fewer personnel are significantly higher than those for operations with 101–400 people. Similarly, operations with 41–100 employees score higher in responsibility than those with 101–400 or 400+ employees. For the sufficiency sub-dimension, operations with 40 or fewer employees and those with 41–100 employees score significantly higher than businesses with 101–400 and 400+ employees. For self-Improvement, businesses with 41–100 employees significantly outperform operations with 400 or more employees. Consequently, overall Intern student qualification scores are significantly higher in businesses with 40 or fewer employees and 41–100 employees than in larger-scale operations.

Table 3. CFA results

Factors/items	Factor loading	Cronbach's Alpha	CR	AVE
Cooperation and harmony (CH)				
9	0,941			
21	0,935			
22	0,935			
23	0,936			
24	0,935			
25	0,935	0,941	0,942	0,556
26	0,936			
27	0,939			
28	0,937			
29	0,936			
30	0,937			
31	0,935			
32	0,937			
Responsibility (RE)				
18	0,836	0,757	0,78	0,558
19	0,579			
20	0,579			
Self-Improvement (SI)				
10	0,559	0,717	0,727	0,575
12	0,559			
Sufficiency (SU)				
16	0,671	0,803	0,806	0,676
17	0,671			

Notes. CR: Composite reliability, AVE: Average variance extracted.

Table 4. Discriminant and convergent validity results

	CR	AVE	MSV	MaxR(H)	CH	SU	RE	SI
CH	0,942	0,556	0,536	0,944	0,746			
SU	0,806	0,676	0,412	0,821	0,642***	0,822		
RE	0,780	0,558	0,415	0,877	0,644***	0,436***	0,747	
SI	0,727	0,575	0,536	0,764	0,732***	0,528***	0,529***	0,758

Notes. CR: Composite reliability, AVE: Average variance extracted, CH: Cooperation and harmony, RE: Responsibility, SI: Self-improvement, SU: Sufficiency.

Table 5. Knowledge of foreign languages

18th Item: Students' foreign language knowledge is sufficient						
	H.R. manager	F.O. manager	F&B manager	Housekeeping manager	Head chef	Sum
Maks	2	3	2	2	3	3
Min	1	1	1	1	2	1
Sum	93	108	95	93	121	510
n	38	38	38	38	38	190
Mean	2,4474	2,8421	2,5000	2,4474	3,1842	2,6842
Standard Deviation	1,2236	1,2198	0,9227	1,0830	0,8961	1,1057

Thirdly, ANOVA results indicate significant differences in performance, driven by intern density ($p < 0.05$). Cooperation and harmony subscale scores are significantly higher for operations hosting 1–5 students than for those hosting 21 or more students. Responsibility scores are significantly lower for operations with 21 or more students than for departments employing 1–5 or 6–10 students. For sufficiency, departments with 1–5 students score higher than those with 16–20 and 21+ students. Self-Improvement scores follow a similar pattern, favoring low-density environments (1–5 students) over high-density environments (21+ students). Ultimately, intern student qualification evaluations are lower in departments with 21 or more trainees than in low-intern-density settings.

Descriptive results on students' foreign language proficiency highlight an industry-wide constraint, as shown in Table 5 across task managers.

Evaluating parametric and descriptive data patterns holistically reveals that: (1) the technical and practical preparation of trainee interns falls short of expectations; (2) foreign language knowledge is markedly deficient; (3) students lack autonomous, solution-oriented task management capabilities; (4) technical competencies in front office branches are rated slightly higher; and (5) optimal performance integration occurs in businesses employing 40 or fewer employees and with lower internal trainee density.

5. Discussion

This study examines the importance and current state of secondary-level vocational tourism education in Türkiye. Tourism is a labor-intensive industry in which developing human capacity is vital for sustainable development (Choy & Yeung, 2024), and it plays an important role in destination competitiveness across both developed and developing economies (Karalım, 2024). The empirical results show that student internship performance varies significantly across accommodation establishments—specifically, by organizational size and trainee density. Department managers perceive students interning at smaller establishments with fewer employees and fewer interns as more competent. This directly echoes the structural assertions of organizational theorists such as Mintzberg (1993), Pugh et al. (1969), and Blau (1970), who note that smaller scales lower formalization, decrease communication distances, and heighten behavioral visibility, fostering holistic learning participation.

Furthermore, the finding that low trainee density yields higher competency aligns with mentoring paradigms, notably Kram's (1985) model, which highlights one-on-one feedback and modeling as critical foundations. As intern counts increase, managerial feedback dilutes, mirroring Sweller's (1994) cognitive load theory, which posits that social and task complexity reduce learning efficiency. Deficiencies highlighted by managers in practical execution and field preparation align with criticisms by Güden et al. (2024), indicating a mismatch between school curricula and sectoral skill demands, a factor that threatens operational quality (Lv et al., 2023). Quality vocational pathways are necessary to sustain workforce productivity (Terry, 2024), underscoring calls for close educational-industry dialogues (Özer, 2020; Wang, 2010) and cooperative models to sustain transitions (Güden & Safaeimanesh, 2024). Finally, acute communication and language gaps validate Parasuraman et al.'s (1990) SERVQUAL model, which identifies communication as a major driver of service quality and advocates for contextualized, authentic educational alternatives over classic theoretical instruction (Herrington & Oliver, 2000).

5.1. Theoretical implications

The empirical findings of this study offer several critical contributions to the theoretical domains of work-integrated learning, organizational sociology, and educational psychology. First, the substantial performance variance across hotel sizes provides strong empirical support for Lave and Wenger's (1991) Communities of Practice framework in vocational tourism education. In small-scale establishments (40 or fewer employees), the organizational architecture features shorter communication channels, lower formality, and greater behavioral visibility. This structure facilitates deeper social integration, enabling intern students to transition more rapidly from peripheral participation to core operational roles. Informal knowledge transfer accelerates because the structural boundaries between novices and experts are minimized.

Second, the study expands Bandura's (1977) Social Learning Theory by showing that learning environments are highly sensitive to structural density. In hospitality operations with low intern-to-employee ratios, students have optimal opportunities for close behavioral modeling, systematic observation, and immediate reinforcing feedback. Smaller scales allow for personal guidance, enabling students to internalize abstract professional ethics, work disciplines, and problem-solving behaviors more effectively than in hyper-formalized, large-scale luxury or chain hotels.

Third, by demonstrating a negative correlation between high intern density and student competency scores, this study offers a fresh perspective on Kram's (1985) mentoring model. Mentoring capacity must be recognized as a scarce organizational resource. When hospitality operations are overconcentrated with trainees, the number of mentoring resources available per student decreases. Consequently, supervisory feedback becomes superficial and purely transactional, directly restricting the student's development.

Finally, this study synthesizes work-based learning dynamics with Sweller's (1994) Cognitive Load Theory. Large-scale hospitality settings with high intern densities impose excessive external cognitive load on young learners because of operational complexity and chaotic social interactions. Conversely, optimized and scaled learning

environments reduce external noise, allowing students' cognitive capacity to be fully dedicated to mastering technical tasks (germane cognitive load), which is reflected in higher performance ratings from department managers.

5.2. Practical implications

Based on empirical evidence and identified deficiencies, the following concrete, actionable recommendations have been developed for policymakers, vocational school administrators, and hospitality sector leaders:

1) Curriculum redesign and content modernization: The Ministry of National Education should urgently restructure the framework curriculum for secondary vocational tourism schools. Training modules must shift from purely mechanical tasks to higher-order skills development. In line with modern global standards, the updated curriculum should explicitly integrate dedicated modules on digital literacy, AI-supported hospitality workflows, corporate sustainability practices, and applied business ethics.

2) Task-based foreign language instructional innovation: To address the critical deficiencies in foreign language proficiency reported by managers, traditional grammar-heavy English instruction must be abandoned. Schools should implement an authentic, task-based language module. Students should be trained and assessed through live operational simulations conducted entirely in English, focusing on guest check-in and check-out procedures, reservation management, culinary terminology, service interactions, and real-time handling of customer complaints.

3) Optimizing internship placement and scale selection: Vocational school directorates and ministerial commissions must shift their strategy from mere "student placement" to deliberate "learning design." Educational institutions should prioritize formal protocols with small and medium-sized hospitality enterprises (SMEs) and boutique hotels. The findings show that these environments provide superior learning opportunities, greater task responsibility, and clearer visibility of skills for young trainees.

4) Strategic internship management and mentor-student ratios: Tourism enterprises must establish rigorous capacity planning models for their human resource operations. Hotels should regulate and limit the total number of interns accepted per department. It is highly recommended to maintain a maximum ratio of two interns per certified master instructor/mentor to protect the organization's mentoring capacity and prevent feedback dilution.

5) Management mentoring and coaching training: Because practical training depends heavily on field supervisors, hotel enterprises, in collaboration with schools, should require corporate training programs for department managers and master instructors. These programs must focus on "effective feedback mechanisms," "educational psychology," "coaching leadership styles," and "objective competency assessment systems" to standardize evaluation rubrics and mitigate personal managerial biases.

6) Integration of digital learning technologies: To bridge the gap between classroom theory and industry practice before the high tourism season begins, vocational high schools should invest in digital learning solutions. Incorporating virtual reality (VR) and augmented reality (AR) simulations into front-office and food-and-beverage workshops will let students practice complex customer interactions and master technical tools in a risk-free environment, reducing their cognitive load during the initial phase of their field placement.

7) Unified competency assessment systems: To ensure transparency and minimize the limitations of subjective managerial bias, a digitized, 360-degree performance evaluation framework should be developed jointly by schools and industry stakeholders. Students' performance during internships should be evaluated using synchronized rubrics that involve the department manager, the visiting academic/school advisor, and a structured student self-evaluation tool, with equal emphasis on technical proficiency in hardware and behavioral compliance.

5.3. Limitations and future research directions

The most important limitation of the study is its geographic scope; it was conducted in Türkiye. In addition, the study is limited to 38 hotels within the scope of the 2018 protocol between ministries in Türkiye. At the same time, the personal opinions and prejudices of the department managers in the hotels where the students receive skills training are another limitation of the study. In addition, students' performance during the evaluation period, as assessed by department managers, is another limitation.

In the future, (1) Comparative studies based on hotel typologies (luxury, chain, independent, and boutique accommodation establishments) can be used to examine the impact of organizational structure on student performance using structural equation modeling. (2) Models can be developed to examine student performance multidimensionally through 360-degree performance evaluations (from managers, guests, academic advisors, and self-

evaluation). (3) Longitudinal career tracking (the impact of internship experience on post-graduation employment and promotion speed) can be used to analyze graduates' status through 3–5-year follow-up studies. (4) Experimental interventions for language teaching (task-based language teaching interventions) can be tested using experimental and control groups. The impact of digital learning technologies (augmented reality (AR) and virtual reality (VR) based customer interaction simulations) on student service performance can be measured. (5) The impact of mentoring styles on performance (transformational, servant, and coaching leadership on student performance) can be examined through multivariate analysis.

Author contribution

Kurtuluş Tuncer: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Writing - original draft, Design; (%40). **Burhan Sevim**: Project administration, Methodology, Writing – review & editing; (%30). **Serkan Çalışkan**: Project administration, Investigation, Writing – review & editing; (%30).

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Declaration of generative AI and AI-assisted technologies in the writing process

During the preparation of this study, the authors used ChatGPT to improve the manuscript's readability and language. After using the tool, the authors reviewed and edited the content as needed and took full responsibility for the published article.

Ethics committee approval

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Appendix A. Survey Questionnaire

1st Section (Demographic Information)

1- Gender Female ( ) Male ( )
2- Age ( )
3- Professional experience (years) ( )
4- Role in the business
H.R. Manager ( ) F.O. Manager ( ) F&B Manager ( )
HK Manager ( ) Head Chef ( )
5- Education status
High school ( ) Associate Degree ( ) Undergraduate ( ) Postgraduate ( )
6- Number of personnel working in your department (Total) ( )
7- Number of students working in your department within the scope of Law No. 3308 ( )

2nd Section (Thoughts about students' competencies)

1 strongly disagree, 2 disagree, 3 moderately agree, 4 agree, 5 strongly agree

A. Hardware competencies	**1**	**2**	**3**	**4**	**5**
1- They use the tools and equipment related to their job properly					
2- They can use materials in their work without wasting them					
3- They can understand the work expected of them					
4- They can take responsibility for their work					
5- They learn new methods and methods easily					
6- They can do business without giving details about their work.					
7- They can do their job without the need for supervision					
8- They can solve the problems they encounter in their work					
9- Students can apply what they have learned					
10- Students can improve themselves regarding their work					
11- Students' foreign language knowledge is sufficient					
12- The theoretical education they received at school is sufficient					
13- The practical training they received at school is sufficient					
B. Behavioral competencies					
1-They pay attention to work discipline					
2- They pay attention to business ethics					
3- They pay attention to their speech					
4- They pay attention to their behavior					
5- They are careful in their attitude towards their colleagues					
6- They are careful in their behavior towards their colleagues					
7- They are compatible with their colleagues					
8- They diligently carry out the duties assigned by their superiors					
9- They are sensitive about work instructions					
10- They comply with the dress code					
11- They are sensitive about continuing their work					

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Work-life balance and life satisfaction: Serial mediation by basic psychological needs satisfaction

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Abstract

Several factors influence life satisfaction, including how well the work-life balance process meets an individual's basic psychological needs. In this study, a model examining the mediating effect of basic psychological needs on the relationship between work-life balance and life satisfaction was tested. The sample comprised 360 full-time employees aged 25 to 55. Data were collected using the Work-Life Balance Scale, the Basic Needs Satisfaction in General Scale, and the Satisfaction with Life Scale. Preliminary findings showed a positive and significant correlation between life satisfaction and work-life balance. Furthermore, multiple mediation analyses indicated that basic psychological needs—autonomy, competence, and relatedness—serially mediate the relationship between work-life balance and life satisfaction.

1. Introduction

In recent years, technological advancements and increasing job demands have significantly altered the boundaries between work and non-work life. The expectation that employees may simultaneously hold multiple roles also makes achieving work-life balance difficult (Feery & Conway, 2023). Studies on work-life balance (Casper et al., 2018; Jenkins et al., 2016) largely build on the pioneering work of Greenhaus and Beutell (1985) on the natural conflicts between work and family. Definitions of work-life balance vary. However, relevant conceptualizations are divided into two main dimensions: minimal conflict between work and non-work roles (Sirgy & Lee, 2018) and fulfilling the requirements of various roles both at work and outside the workplace (Greenhaus et al., 2003).

Several theoretical frameworks have been proposed to explain work-life balance. One prominent theory is the Work-Family Boundary Theory (Clark, 2000), which conceptualizes work and family as separate domains governed by distinct expectations and norms. Individuals move between these domains, and boundary flexibility has been associated with less conflict and higher satisfaction (Clark, 2000). Contemporary models (Grawitch et al., 2013; ten Brummelhuis & Bakker, 2012), building on Hobfoll's (1989) conservation of resources theory (COR), explain how resources gained or lost in the work domain relate to the work and non-work domains. From the perspective of COR theory, work-life balance, as a personal resource, has been positively correlated with individuals' ability to meet work demands and with high job performance, and negatively correlated with burnout (Hobfoll, 2001). Individuals are more likely to accumulate resources and less likely to experience persistent role conflict and negative feelings about resource depletion when they successfully manage both work and non-work-related demands (Carlson & Frone, 2003). From a personal resource allocation perspective, work-life balance can be linked to meeting basic psychological needs (Hyatt & Colsor, 2018).

Meeting basic psychological needs is a sub-theory within the broader framework of Self-Determination Theory (SDT) (Deci & Ryan, 2000, 2008; Sheldon & Prentice, 2019). According to this theory, the extent to which these

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needs are met strongly determines people's well-being (Gagne et al., 2018). SDT identifies three basic psychological needs: autonomy, competence, and relatedness. Autonomy means choosing one's own actions with personal approval (Deci & Ryan, 2000; Weinstein et al., 2016). Competence means being effective in achieving desired outcomes (Reis et al., 2016) and feeling capable of coping with one's environment (Ingledew et al., 2004). Individuals who feel competent believe they will successfully achieve their goals (Williams et al., 2002). Patrick (2014) suggested that the need for relatedness encompasses the desire to be understood and connected with by others. According to Reis et al. (2016), this need helps individuals feel supported and satisfied in their relationships and close and connected with important people in their lives.

According to SDT, healthy development and adjustment are related to the extent to which individuals' psychological needs are met within their context (Deci & Ryan, 2000). Sheldon and Niemiec (2006) found that meeting each of the three psychological needs individually was less successful in improving well-being, whereas meeting all three needs in a specific area was more effective. They also suggested that meeting these needs can be important. Establishing a healthy work-life balance depends on meeting basic psychological needs (Fernet et al., 2023). In conclusion, meeting basic psychological needs in both work and personal life is important for harmonious and healthy functioning in both areas (Fernet et al., 2023). Most previous studies on work-life balance and meeting basic psychological needs have examined the relationship between meeting the need for autonomy and work-life balance and life satisfaction (Casper et al., 2018; Deci et al., 2017; Fernandez & Moldogaziev, 2015; Fernet et al., 2017; Ienuso, 2020; Jungert et al., 2017; Van den Bosch & Taris, 2018). Meeting the need for autonomy in the workplace has been linked to reduced burnout and higher need satisfaction. Furthermore, positive correlations have been found between meeting the need for autonomy in the workplace and job satisfaction, altruism, civic virtue, job commitment, and reduced emotional burnout (Fernet et al., 2017; Gillet et al., 2015).

Meeting the need for autonomy is positively correlated with meeting the need for competence. Given this relationship, competence contributes to greater self-efficacy and personal mastery in the workplace and supports a good work-life balance (Fotiadis et al., 2019). Furthermore, highly competent employees seek avenues for advancement within the organizational hierarchy beyond routine tasks (McGrath & MacMillan, 2000). By facilitating and encouraging personal goal setting that does not conflict with work-life balance, organizations can offer these employees opportunities to further develop their skills and abilities, helping them achieve both their personal goals (e.g., meeting their psychological well-being needs) and their organizations' goals (Haynie & Shepherd, 2011).

The need for relationality can also be understood as the need to connect with others. A supportive workplace environment that values closeness and social interaction is crucial for meeting relational needs (Fotiadis et al., 2019). Unsupportive work environments and hierarchical structures can create relationship gaps, leading to feelings of distance, loneliness, and social isolation (Hannafey, 2003). Consequently, a lack of belonging can arise from negative emotions (e.g., grief, fear of failure, stress, and loneliness) often associated with isolation (Shepherd & Haynie, 2009). Gillet et al. (2019) found that meeting relationship needs is linked to reduced negative emotions and burnout. According to Gagne and Deci (2005), meeting relationship needs is positively correlated with positive attitudes and behaviors toward work, enabling individuals to internalize work-related policies and procedures. In this context, commitment and a sense of belonging to the workplace are believed to also reflect positively on one's personal life, thus increasing life satisfaction within the work-life balance context.

Life satisfaction is defined as the set of emotional and cognitive outcomes individuals derive from evaluating their lives as a whole at a given time (Yang & Srinivasan, 2016). In this sense, life satisfaction is a component of subjective well-being, the scientific expression of happiness. This relates to the satisfaction individuals feel with their lives, as well as their ability to balance the positive and negative aspects of life (Yang & Srinivasan, 2016). Cognitively, life satisfaction arises from comparing life conditions to standards set by the individual. This evaluation, made by the individual according to their own standards, is a conscious cognitive judgment about the individual's life (Pavot & Diener, 1993). While conditions such as physical health and strong, meaningful relationship networks seem to be universal components of life satisfaction, what these components mean to different individuals will likely differ. For each of these seemingly universal criteria, individuals may have different standards (Diener et al., 1985). In conclusion, life satisfaction is an overall evaluation of one's life, rather than satisfaction with a particular aspect of life (Diener, 1994).

In recent years, many studies have shown that meeting psychological needs plays a significant role in life satisfaction (Sheldon & Bettencourt, 2002; Vansteenkiste et al., 2008). In their meta-analysis, Tang et al. (2020) found a positive relationship between the satisfaction of basic psychological needs and life satisfaction, and a negative relationship with depression and apathy. In contrast, very little research has examined the relationship between life satisfaction and work-life balance (Best & Chinta, 2021; Haar, 2013; Haar et al., 2014; Noda, 2020;

Taşdelen-Karçkay & Bakalım, 2017). Noda (2020), using data from OECD countries, argues that work-life balance policies increase life satisfaction for both men and women. Haar et al. (2014), in their study of the effects of work-life balance and life satisfaction across cultural contexts, found a stronger correlation between work-life balance, job satisfaction, and life happiness in individualistic cultures than in collectivist cultures. Previous research indicates that people are more satisfied with their lives when they believe they have a satisfactory balance between work and leisure activities (Haar, 2013; Haar et al., 2014). Despite this, no studies in the literature have simultaneously examined work-life balance, the fulfillment of basic psychological needs, and life satisfaction.

In light of this information, the main objective of this study is to examine the relationships among work-life balance, satisfaction of basic psychological needs, and life satisfaction. Basic psychological needs (autonomy, competence, and relatedness) were hypothesized to play multiple mediating roles in the relationship between work-life balance and life satisfaction. Accordingly, the direct and indirect effects of these psychological needs were examined based on the following hypotheses:

H1. Work-life balance will be positively related to life satisfaction.

H2. The relationship between work-life balance and life satisfaction will be mediated by M1 (fulfillment of the need for autonomy).

H3. The relationship between work-life balance and life satisfaction will be mediated by M2 (fulfillment of the need for competence).

H4. The relationship between work-life balance and life satisfaction will be mediated by M3 (fulfillment of the need for relatedness).

H5. The relationship between work-life balance and life satisfaction will be mediated sequentially by autonomy, competence, and relatedness, based on an examination of the indirect effects of possible mediators within a sequential multiple mediating model.

2. Methodology

Ethical approval for the study was obtained from the İzmir Democracy University Social and Human Sciences Scientific Research and Publication Ethics Committee, dated 03.01.2023, decision number 2023/01-06. Participation in the online data collection process was entirely voluntary. Informed consent was obtained from all participants, who were informed of their right to withdraw from the study at any time without any consequences.

2.1. Participants and procedure

Participants comprised 360 full-time employees aged 25-55 years (M_{age} = 40.35 years, SD_{age} = 9.9) living in Western Türkiye. These participants included 188 (52.2%) females and 172 (47.8%) males. Regarding marital status, 47.8% (n = 172) were married, and 52.2% (n = 188) were not. In terms of occupations, the participants included teachers (n = 94), school counselors (n = 66), engineers (n = 32), lawyers (n = 28), academics (n = 24), doctors (n = 24), managers of small businesses (n = 13), cashiers (n = 13), waiters (n = 9), civil servants (n = 9), psychologists (n = 9), sales clerks (n = 9), other business owners (n = 6), firemen (n = 6), translators (n = 5), customs consultants (n = 5), dentists (n = 4), and social workers (n = 4).

Data were collected through an online survey administered via Google Forms. The survey link was shared on social media platforms, and participants were invited to complete the questionnaire and share the link with other potential participants. This recruitment procedure facilitated participation from respondents in several cities across Türkiye.

2.2. Measures

Work-life balance scale (WLBS): To assess the balance between individuals' work and personal lives, the WLBS was used, developed by Taşdelen-Karçkay and Bakalım (2017), which consists of eight items rated on a 7-point Likert scale from 1 ("strongly disagree") to 7 ("strongly agree"). The scale's single-factor structure was confirmed through both exploratory and confirmatory factor analyses across different participant groups. The Cronbach's alpha value reported by Taşdelen-Karçkay and Bakalım (2017) was 0.92. In the current study, Cronbach's alpha was 0.95.

Basic needs satisfaction in general scale (BPNSGS): The BPNSGS, a 21-item, 7-point Likert-type scale, assesses respondents' satisfaction with the needs for relatedness, competence, and autonomy. The overall scale's

Cronbach's alpha was 0.83, and the subscales ranged from 0.60 to 0.74. Bacanli and Cihangir Cankaya used confirmatory factor analysis to verify the scale's factor structure and found that the three-factor model fit well. In the present study, Cronbach's alpha coefficients were 0.76 for the overall scale, 0.72 for autonomy, 0.70 for competence, and 0.80 for relatedness.

Satisfaction with life scale (SWLS): Diener et al. (1985) developed the SWLS to measure overall life satisfaction. Köker (1991) adapted the Turkish version of the SWLS. Response options range from "strongly disagree" (1 point) to "strongly agree" (7 points). Higher scores indicate greater satisfaction. In the current study, the SWLS had an internal reliability of 0.89.

2.3. Data analysis

The analyses were conducted in several stages. First, the means, standard deviations, skewness, kurtosis, and bivariate correlations of the study variables were examined. Second, Model 6 of Hayes's PROCESS macro was employed to assess the serial multiple mediation effects of basic psychological needs in the relationship between work-life balance and life satisfaction. Gender, age, and marital status were included as covariates. The significance of the indirect effects was evaluated using 95% confidence intervals (CIs) based on 5,000 bootstrap samples. Following Hayes (2018), an indirect effect was considered statistically significant when the corresponding 95% CI did not include zero.

3. Results

3.1. Descriptive statistics

Table 1 presents descriptive statistics, skewness, kurtosis, bivariate Pearson correlation coefficients, and reliabilities for all study variables. As expected, life satisfaction was significantly and positively correlated with work-life balance and with the basic psychological needs of autonomy, competence, and relatedness. The results also showed that work-life balance was significantly and positively correlated with the basic psychological needs.

Table 1. Descriptive statistics and study variable correlations

Variables	*M* (*SD*)	Skewness	Kurtosis	1	2	3	4
1. Work-life balance	36.47 (8.47)	-0.560	-0.381				
2. Satisfaction of need for autonomy	12.90 (5.00)	-0.001	-0.952	0.655**			
3. Satisfaction of need for competence	12.63 (4.9)	0.081	-0.559	0.653**	0.678**		
4. Satisfaction of need for relatedness	13.27 (3.7)	-0.084	-0.744	0.641**	0.666**	0.655**	
5. Life satisfaction	14.17 (4.48)	0.066	-0.389	0.637**	0.633**	0.632**	0.627**

Note: $^{**}p < 0.001$

3.2. Statistical assumption tests

Before conducting the mediation analysis, the relevant assumptions were checked. The results showed that the research variables' skewness ranged from -0.001 to -0.560 and kurtosis from -0.381 to -0.952, supporting the normality criteria. Variance inflation factor (VIF) values ranged from 2.19 to 2.38, tolerance values from 0.43 to 0.46, and the Durbin-Watson value was 1.896. When VIF values are less than 5, multicollinearity problems do not exist (Hair et al., 2016). The VIF values of all indicators in this investigation fell below that recommended threshold. Additionally, the Durbin-Watson value suggests that the residuals are uncorrelated. As a general rule, the Durbin-Watson statistic should be between 1.5 and 2.5 to indicate the absence of autocorrelation among errors. The model also tested for common method bias (CMB) using Harman's single-factor score. The initial unrotated factor explained less than 50% of the total variance, indicating that common method variance was unlikely to significantly affect the current study (Mat Roni, 2014).

3.3. Serial multiple mediational analyses

Figure 1 and Table 2 present the findings from the serial mediation model examined, in which work-life balance predicts life satisfaction, mediated by basic psychological needs. Consistent with Hypothesis 1, the results showed

a positive direct effect of work-life balance on life satisfaction (total effect; $c = 0.337$***, $p < 0.001$, 95% CI = 0.294-0.379). When the mediators were included, the coefficient decreased but remained statistically significant ($c' = 0.128$***, $p < 0.001$, 95% CI = 0.072-0.183).

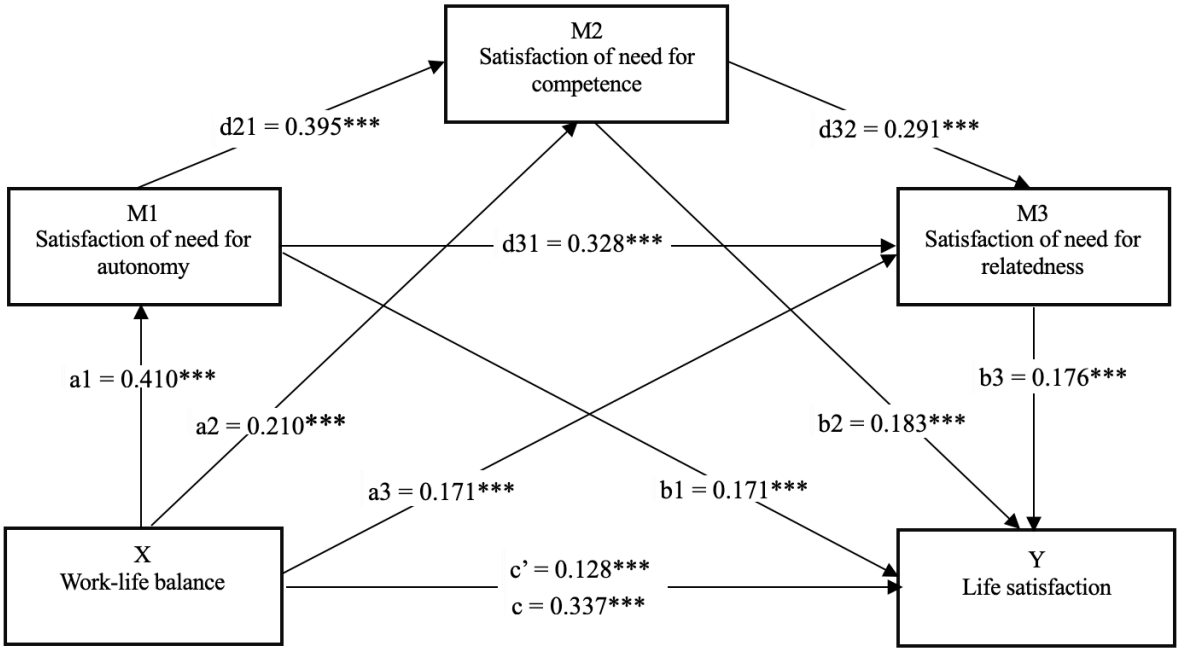


Figure 1: Serial mediation model for work-life balance, basic psychological needs (autonomy, competence, and relatedness) and life satisfaction.

Notes. ** $p < 0.001$; the values shown are unstandardized coefficients

Table 2. Serial mediation model with standardized effects for the relationship between work-life balance and life satisfaction, mediated by the basic psychological needs of autonomy, competence, and relatedness

Path	Coefficient*	*SE*	BootLLCI	BootULCI
Work-life balance→ satisfaction of need for autonomy→ life satisfaction	0.070	0.025	0.023	0.122
Work-life balance→ satisfaction of need for competence→ life satisfaction	0.037	0.013	0.013	0.064
Work-life balance→ satisfaction of need for relatedness→ life satisfaction	0.030	0.013	0.008	0.059
Work-life balance→ satisfaction of need for autonomy→ satisfaction of need for competence→ life satisfaction	0.030	0.010	0.010	0.051
Work-life balance→ satisfaction of need for autonomy→ satisfaction of need for relatedness→ life satisfaction	0.024	0.011	0.007	0.047
Work-life balance→ satisfaction of need for competence→ satisfaction of need for relatedness→ life satisfaction	0.010	0.005	0.003	0.021
Work-life balance→ satisfaction of need for autonomy→ satisfaction of need for competence→ satisfaction of need for relatedness→ life satisfaction	0.008	0.004	0.002	0.018
Work-life balance→ life satisfaction [total effect (c)]	0.337	0.022	0.294	0.379
Work-life balance→ life satisfaction [indirect effect (c')]	0.128	0.028	0.072	0.183
Total indirect effect	0.209	0.027	0.159	0.265

Notes: Boot, bootstrapping; LLCI, lower limit of the confidence interval; ULCI, upper limit of the confidence interval; SE, standard error

In the research model, three indirect effects were tested. The first indirect effect tested whether satisfaction of the need for autonomy mediated the relationship between work-life balance and life satisfaction, and it was significant (a1×b1 = 0.070, *SE* = 0.025, 95% CI = 0.023-0.122). The second indirect effect tested whether satisfaction

of the need for competence mediated the relationship between work-life balance and life satisfaction, and it was also significant (a2×b2 = 0.037, *SE* = 0.013, 95% CI = 0.013-0.064). Finally, the third indirect effect tested whether satisfaction of the need for relatedness mediated the relationship between work-life balance and life satisfaction, and it was significant (a3×b3 = 0.030, *SE* = 0.013, 95% CI = 0.008-0.059). As a result, Hypotheses 2, 3, and 4 were also supported.

The path coefficients for work-life balance indicated that all mediator variables significantly mediated the relationship between work-life balance and life satisfaction when basic psychological needs (autonomy, competence, and relatedness) were modeled as mediators. This study showed that work-life balance could have a substantial indirect impact on life satisfaction through basic psychological needs (testing serial multiple mediation; β = 0.016, *SE* = 0.007, 95% CI = 0.005-0.033), in addition to a direct impact. Additionally, Hypothesis 5 was confirmed. In summary, the serial mediation analysis using three mediators revealed that basic psychological needs mediate the total effect of work-life balance on life satisfaction (Figure 1).

4. Discussion and conclusion

Maintaining general life satisfaction requires balancing work and life. Examining the components of this interaction is important. In this context, the present study investigated the mediating roles of basic psychological needs—autonomy, competence, and relatedness—in the relationship between work-life balance and life satisfaction. The key findings within this framework indicate that: (1) work-life balance positively influences life satisfaction; (2) satisfaction of the need for autonomy mediates the relationship between work-life balance and life satisfaction; (3) satisfaction of the need for competence mediates the relationship between work-life balance and life satisfaction; (4) satisfaction of the need for relatedness mediates the relationship between work-life balance and life satisfaction; and (5) basic psychological needs serially mediate the relationship between work-life balance and life satisfaction.

The first hypothesis, that work-life balance would be positively related to life satisfaction, was confirmed. In other words, individuals with a work-life balance report higher levels of life satisfaction. This result is consistent with previous studies on this topic (Best & Chinta, 2021; Haar, 2013; Haar et al., 2014; Noda, 2020; Taşdelen-Karçkay & Bakalım, 2017). Brough et al. (2014) found that work-life balance was positively related to family and job satisfaction and negatively related to psychological tension and intentions to resign. Common elements in definitions of work-life balance include the functional interaction of work and non-work roles and the ability to minimize conflicts between work-related roles and other social roles (Sirgy & Lee, 2018).

A higher level of life satisfaction is believed to result from fewer role conflicts in an individual's work and personal life, as well as the diligent fulfillment of essential responsibilities. Individuals' life satisfaction may stem from their ability to perform their roles effectively, develop satisfying relationships, and maintain a sense of success and inner peace that comes from fulfilling their responsibilities in their professional and personal lives. Haar et al. (2014), who examined the relationship between work-life balance and life satisfaction across cultures, found that individualistic cultures show a stronger positive relationship between work-life balance and job satisfaction, while collectivist cultures show a negative relationship between work-life balance and anxiety levels. Studies on this subject have reported that individuals who believe they balance their work and non-work activities are more satisfied with their lives (Haar, 2013; Haar et al., 2014). In his study of cultural dimensions, Hofstede (1980) classified cultures in terms of individualism and collectivism and included Türkiye among collectivist cultures. Although early studies in Türkiye supported that classification, more recent studies show that Turkey displays both individualistic and collectivistic cultural characteristics (Kağıtçıbaşı, 2000; Özdemir, 2014; Yetim, 2004). In this context, this study's results align with those of Haar et al. (2014), indicating a parallel with the outcomes of individualistic cultures.

The second hypothesis was validated, proposing that fulfilling the need for autonomy would mediate the association between work-life balance and life satisfaction. This result is consistent with previous studies (Fotiadis et al., 2019). Fernet et al. (2017) demonstrated negative relationships between autonomy and burnout, decreased personal achievement, and depersonalization. Gillet et al. (2015) found that autonomy underlying individuals' success in reaching goals was associated with positive affect, whereas controlled (extrinsic) motivation was associated with anxiety. The effect of meeting the need for autonomy in the workplace has been examined longitudinally; it is significantly associated with increased job engagement and reduced turnover intentions after one year (Trepanier et al., 2015).

A study on workplace empowerment found a significant relationship between job satisfaction and measures of job-based empowerment, such as giving employees the power to make work-related decisions that foster autonomy (Fernandez and Moldogaziev, 2015). Steckermeier (2021), based on a modeling study with data from 33 European

countries, found that an individual's perceived autonomy mediates the relationship between social conditions and life satisfaction. Individuals must allocate their personal resources to both work and non-work activities, and each person determines how best to divide their finite resources (Grawitch et al., 2010). This explanation suggests that people who are happy with how they divide their time and resources between work and leisure activities, according to their own choices, will be happier at work and in their personal lives and feel more in control.

The third hypothesis was confirmed: "The relationship between work-life balance and life satisfaction will be mediated by satisfaction of the need for competence." This result aligns with previous studies in the literature (Fotiadis et al., 2019). The need for competence is defined as an individual's internal desire to feel effective in interacting with the environment (Deci & Ryan, 2000). According to Van den Broeck et al. (2010), satisfaction in meeting the need for competence is a broader emotional experience of effectiveness that arises from mastering a task. However, the tendency to engage in challenging tasks to test and improve one's skills particularly reflects the need for competence. Satisfying the need for competence enables individuals to adapt to complex and changing environments, whereas hindering competence is likely to result in powerlessness and a lack of desire (Deci & Ryan, 2000). Satisfaction of the need for competence supports work-life balance and fosters greater self-efficacy and personal mastery in the workplace (Fotiadis et al., 2019). Employee burnout is less common among those who feel confident in their ability to plan and complete their work (Consiglio et al., 2013). High-efficacy workers typically persevere in the face of difficulties (Gillet et al., 2019). Additionally, they feel positive about their work and their own achievements (Ventura et al., 2015). Consistent with the results of the present investigation, individuals who demonstrate competence and balance their roles in both business and personal life experience greater life satisfaction.

The fourth hypothesis was confirmed: "The relationship between work-life balance and life satisfaction will be mediated by satisfaction of the need for relatedness." This result aligns with previous studies (Gagne & Deci, 2005; Gillet et al., 2019). The need for relatedness may also be described as the need for connectedness with others. A supportive workplace environment that values closeness and social interaction is crucial for meeting relational needs (Fotiadis et al., 2019). Unsupportive work environments and hierarchical structures can create relationship gaps, leading to feelings of distance, loneliness, and social isolation (Hannafey, 2003). As a result, a lack of belonging may stem from negative emotions (e.g., grief, fear of failure, stress, and loneliness) often associated with isolation (Shepherd & Haynie, 2009). Gillet et al. (2019) found a link between satisfying relationship needs and reduced negative affect and burnout. According to Gagne and Deci (2005), meeting relationship needs enables individuals to internalize work-related policies and procedures, resulting in positive work-related attitudes and behaviors. In this context, a sense of commitment and belonging to the workplace within the context of work-life balance will be reflected in one's personal life and thereby increase life satisfaction.

The final hypothesis was confirmed: "The relationship between work-life balance and life satisfaction will be serially mediated by basic psychological needs." This result is consistent with previous studies (Fernet et al., 2017; Gillet et al., 2015; Gillet, 2019; Sheldon & Niemiec, 2006; Trepanier et al., 2015). Sheldon and Niemiec (2006) argued that satisfying these three needs requires attention to how well they are balanced, and that balanced satisfaction of all three psychological needs in a particular domain is more effective at enhancing well-being than satisfying each need individually. Many researchers have emphasized that employees can experience need satisfaction more holistically as a single overarching dimension (Gillet et al., 2015). In a longitudinal study, Trépanier et al. (2016) examined the relationships among basic psychological needs, workplace bullying, and employee functioning. The results showed that satisfaction of basic psychological needs is associated with life satisfaction, whereas inhibition of these needs is associated with bullying, burnout, and psychosomatic symptoms. In summary, based on the results of the current study and previous findings in the literature, it was concluded that satisfaction of basic psychological needs mediates the relationship between work-life balance and life satisfaction. Satisfying basic psychological needs is believed to be important for achieving work-life balance and increasing life satisfaction.

4.1. Theoretical implications

This study may offer three major theoretical contributions to the literature on Self-Determination Theory (SDT), work-life balance, and employee well-being. First, the findings may provide broader evidence for the explanatory power of Self-Determination Theory (SDT) in organizational contexts. The theory emphasizes that the needs for autonomy, competence, and relatedness are fundamental to individual well-being (Deci & Ryan, 2000; Ryan & Deci, 2017). Previous organizational studies have generally examined these needs either as independent predictors or as parallel mediators of well-being (Van den Broeck et al., 2016). In the present study, however, basic psycho-

logical needs are conceptualized as a sequential psychological process. The findings suggest that autonomy, competence, and relatedness operate as an integrated, sequential psychological process rather than as independent psychological needs. Accordingly, these findings extend the explanatory power of SDT by showing how these needs work together to explain the relationship between organizational experiences and individual well-being.

Second, the present findings may offer theoretical contributions to the work-life balance literature. Previous studies have consistently demonstrated a positive and significant relationship between work-life balance and life satisfaction (Haar et al., 2014; Sirgy & Lee, 2018). However, the current literature does not sufficiently explain the psychological mechanisms underlying this relationship. The present findings suggest that work-life balance increases life satisfaction by supporting the fulfillment of basic psychological needs. Therefore, the study not only confirms the relationship between work-life balance and life satisfaction but also provides a theoretical explanation of the psychological processes through which this relationship occurs.

Third, the present findings may contribute to the employee well-being literature. In the current organizational behavior literature, employee well-being is not limited to job satisfaction or performance alone but is considered a multidimensional construct encompassing an individual's psychological functioning, well-being outside of work, and overall life satisfaction (Gagné et al., 2018; Fernet et al., 2023). Accordingly, the present findings suggest that work-life balance is not only an organizational resource that contributes to work-related outcomes but also an important psychological resource that increases overall life satisfaction by supporting employees' psychological needs.

4.2. Practical implications

The research findings offer implications for managers and human resources professionals. First, managers should adopt a leadership approach that supports employees' sense of autonomy and is grounded in trust. Ensuring their participation in decision-making processes and allowing them to take initiative to a certain extent can help meet these needs. According to SDT, supporting autonomy increases employees' commitment, motivation, and psychological well-being (Deci et al., 2017; Gagne & Deci, 2005).

Second, the findings show that flexible working hours, which support work-life balance, can be important organizational practices that help employees meet their basic psychological needs. For example, hybrid working models and remote work opportunities can enable employees to manage their workloads more effectively. As a result, employees can more easily meet their basic psychological needs at work and at home. Indeed, some research shows that flexible working-hour practices increase employees' life satisfaction by supporting work-life balance and, consequently, reduce their intention to leave their jobs (Ferdous et al., 2021).

Third, the findings demonstrate the importance of practices that enhance employees' sense of competence. These practices have been shown to support employees' job performance, motivation, and well-being (Gagne & Deci, 2005; Van den Broeck et al., 2016). Organizations can achieve this by creating regular training programs, career development opportunities, work-life coaching, and constructive feedback mechanisms to help employees feel more competent. Furthermore, making achievements visible and encouraging development strengthen the sense of competence.

Fourth, the findings underscore the importance of strengthening social support mechanisms that meet employees' need for relatedness. To this end, an organizational culture that fosters teamwork, accessible and supportive managers, and employee support programs and activities that strengthen social interaction within the team can increase employees' sense of belonging. Such practices can contribute not only to improving relationships in the work environment but also to employees' overall life satisfaction. Meeting employees' need for relatedness has been shown to be associated with higher well-being and lower levels of burnout (Fernet et al., 2023).

Finally, it is suggested that human resources policies should be approached not only from a productivity-focused perspective but also holistically, in ways that support work-life balance. Examples include employee support services, burnout-prevention practices, performance metrics that consider work-life balance, and organizational practices that address employees' basic psychological needs.

4.4. Limitations and future research directions

This research has some limitations. These limitations also suggest directions for future research. Because the research uses a cross-sectional design, it cannot definitively establish causal relationships among the variables. Therefore, longitudinal or experimental research is recommended to support causal relationships among work-life balance, basic psychological needs, and life satisfaction. The research sample was obtained through accessible sampling on social media channels. Therefore, participants were limited to individuals working in the service

sector in western Turkey. Future comparative studies across different geographical regions and sectors could demonstrate the extent to which the findings are valid in different contexts.

On the other hand, the study measured the variables using self-report scales. Although Herman's one-factor test indicated that common method bias did not pose a significant problem, Podsakoff et al. (2003) note that this method alone is insufficient to assess common method bias. Therefore, future research may increase the reliability of the findings by using multiple data sources and incorporating evaluations from different sources. Future research could strengthen the validity of the findings by collecting data from multiple sources and employing more robust approaches to assess common method bias, such as marker variables or latent method factor techniques. Finally, using qualitative and mixed-methods research designs alongside quantitative methods in future research may allow for a deeper understanding of how employees experience work-life balance and basic psychological needs.

Author contribution

F.Selda Oz-Soysal: Conceptualization, statistical analyses. **Arzu Tasdelen-Karckay**: Data analyses, writing – review & editing. **Orkide Bakalım**: Conceptualization, writing – review & editing. **Egehan Koşar**: Conceptualization.

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Data availability statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

Ethics committee approval

The study was approved by the İzmir Democracy University Social and Human Sciences Scientific Research and Publication Ethics Committee, dated 03.01.2023, decision number 2023/01-06. It adhered to the Declaration of Helsinki guidelines for research involving human subjects.

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Building digital business ecosystem resilience through orchestration capability: The sequential roles of ecosystem knowledge integration and ecosystem service innovation

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Abstract

This study examines how digital business ecosystem orchestration capability enhances ecosystem resilience through sequential mediation by ecosystem knowledge integration and ecosystem service innovation, while accounting for the moderating effect of ecosystem dynamism. Data were collected via face-to-face surveys from 469 respondents between April and August 2025. Confirmatory factor analysis, bootstrapped mediation and moderated mediation analyses, and instrumental variable estimation were used to test the proposed model. The findings show that orchestration capability improves ecosystem resilience indirectly through knowledge integration and service innovation, with a significant sequential mediation effect. Moreover, ecosystem dynamism strengthens these indirect relationships. The study extends Dynamic Capabilities Theory to the ecosystem level by explaining resilience as the outcome of coordinated capability development and offers practical insights for managers seeking to build resilient digital business ecosystems.

1. Introduction

Digital business ecosystems have become the dominant organizational environment for firms to create value, exchange knowledge, and develop innovative services. Advances in digital platforms, cloud computing, artificial intelligence, and interconnected technologies have expanded collaboration beyond organizational boundaries, enabling firms to co-create value with multiple ecosystem participants rather than relying solely on internal resources (Baumann & Leerhoff, 2022; Demir et al., 2022). At the same time, these ecosystems have become increasingly vulnerable to technological disruptions, shifting customer expectations, cybersecurity risks, and rapidly evolving competitive structures. Recent large-scale digital failures have shown that disruptions affecting a single platform or ecosystem actor can quickly cascade across interconnected networks, threatening the continuity of value creation. Consequently, resilience has emerged as a strategic capability rather than merely an operational outcome. Building resilient digital business ecosystems therefore requires more than technological investment; it demands organizational capabilities to coordinate ecosystem participants, integrate distributed resources, and sustain collaborative adaptation amid changing environmental conditions (Bharadwaj et al., 2013; Dencik et al., 2023; Jacobides et al., 2018).

Growing scholarly attention has significantly advanced understanding of digital business ecosystems, yet several research streams have evolved largely independently. One body of work has focused on ecosystem structures, governance mechanisms, and platform coordination to explain how interdependent actors jointly create value (Chekfoung et al., 2020; Jacobides et al., 2018; Kornyshova et al., 2023). Another has examined orchestration capability as a strategic mechanism through which firms coordinate ecosystem relationships, allocate complementary resources, and align collaborative activities (Hewett et al., 2022; Kamalaldin et al., 2021; Korpela et al., 2013). Parallel research has emphasized ecosystem resilience, highlighting firms' ability to withstand disruptions, recover from shocks, and adapt to environmental turbulence (Bachtiar et al., 2023; Dencik et al., 2023; Gomes et al., 2023).

** The study was approved by the Tianjin University Human Sciences Research and Ethics Committee, dated 12.09.2024, decision number AQTX-42-ZHU. All responsibility belongs to the authors.*

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Meanwhile, studies on knowledge integration and service innovation show that collaborative learning and continuous innovation strengthen organizational performance in networked environments (Agarwal & Selen, 2009; Chandler et al., 2019; Dai et al., 2020). Despite these advances, the literature rarely explains how orchestration capability translates into resilience through interconnected organizational processes. Most studies emphasize individual relationships while overlooking the sequential capability development that characterizes digital business ecosystems.

This omission is important because ecosystem resilience does not emerge automatically from coordination activities. Coordinating ecosystem actors may improve collaboration, yet resilience is more likely to develop when shared knowledge is systematically integrated and transformed into innovative services that enable the ecosystem to respond effectively to changing conditions. Ecosystem knowledge integration (EKI) provides the cognitive foundation for combining dispersed expertise, while ecosystem service innovation (ESI) is the practical manifestation of that collective knowledge in new or improved digital services (Demir et al., 2022; Fernández-Portillo et al., 2024). These capabilities are unlikely to operate independently; instead, they form an interconnected capability-building process through which orchestration capability influences resilience. Furthermore, digital business ecosystems differ substantially in how quickly technologies, customer preferences, platform architectures, and competitive conditions evolve. Under highly dynamic conditions, orchestration capability may become more influential because firms must continuously coordinate ecosystem actors, integrate new knowledge, and redesign services. Examining ecosystem dynamism as a boundary condition therefore offers a more realistic explanation of why orchestration capability produces stronger outcomes in some ecosystems than in others (Alaassar et al., 2022; Kornyshova et al., 2023).

This study adopts Dynamic Capabilities Theory (DCT) as its theoretical foundation because it explains how organizations sustain performance by sensing environmental change, seizing emerging opportunities, and continuously reconfiguring organizational resources and relationships (Eisenhardt & Martin, 2000). Within digital business ecosystems, orchestration capability is a higher-order dynamic capability that enables firms to coordinate ecosystem participants, mobilize complementary resources, and facilitate collaborative adaptation. EKI and ESI are conceptualized as capability development processes through which orchestration capability is transformed into ecosystem resilience. Based on this perspective, this study makes four contributions to the literature. First, it extends DCT beyond the firm level by explaining resilience from an ecosystem perspective. Second, it introduces a sequential mediation framework that clarifies how orchestration capability influences resilience through EKI and ESI, rather than assuming a direct relationship. Third, it identifies digital business ecosystem dynamism (DBED) as an important boundary condition that affects these capability development processes. Finally, the findings provide practical guidance for managers by demonstrating that resilient digital ecosystems require coordinated capability development, systematic knowledge integration, and continuous service innovation, rather than isolated investments in digital technologies alone (Beske, 2012; Eisenhardt & Martin, 2000; Jacobides et al., 2018).

2. Literature review

2.1. Dynamic capabilities theory and digital business ecosystems

Digital business ecosystems are marked by continuous technological evolution, interdependence among multiple actors, and rapidly shifting competitive conditions. Unlike traditional business environments, firms in digital ecosystems cannot rely solely on internally controlled resources to sustain competitive advantage because value creation increasingly depends on the coordinated contributions of platform owners, technology providers, complementors, customers, and other ecosystem participants. As ecosystem boundaries become more fluid, organizational success depends less on resource ownership and more on the ability to mobilize, integrate, and continuously reconfigure distributed resources across organizational boundaries. This perspective aligns closely with DCT, which holds that sustained performance stems from higher-order capabilities that enable firms to sense environmental changes, seize emerging opportunities, and transform organizational resources in response to evolving market conditions (Eisenhardt & Martin, 2000; Teece et al., 1997). Rather than emphasizing static resource possession, DCT focuses on the continuous renewal of organizational capabilities amid uncertainty. This theoretical lens has therefore become increasingly relevant for explaining how firms operate within digital business ecosystems, where technological discontinuities, platform evolution, and shifting stakeholder relationships require ongoing capability adaptation rather than episodic organizational change (Bharadwaj et al., 2013; Jacobides et al., 2018). Recent ecosystem research likewise recognizes that competitive advantage arises from dynamic interactions among heterogeneous actors rather than from firm-specific resources alone, reinforcing DCT's suitability for ecosystem-based research (Baumann & Leerhoff, 2022; Kornyshova et al., 2023).

Applying DCT to digital business ecosystems also offers a coherent explanation of the capability development process examined in this study. Within ecosystems, digital business ecosystem orchestration capability (DBEOC) is a higher-order capability that enables firms to coordinate partners, synchronize digital resources, facilitate collaboration, and align ecosystem-wide activities toward shared objectives. However, orchestration alone does not create resilience. Its value depends on whether ecosystem participants integrate dispersed knowledge and transform it into innovative services that address changing environmental demands. From a dynamic capabilities perspective, EKI is the capability to acquire, combine, and disseminate complementary knowledge from multiple ecosystem actors, thereby strengthening collective learning and decision-making. This integrated knowledge subsequently supports ESI, through which ecosystem participants jointly redesign existing services or develop new digital solutions that enhance customer value and ecosystem adaptability. These interconnected capabilities ultimately contribute to digital business ecosystem resilience (DBER), enabling ecosystems to anticipate disruptions, absorb unexpected shocks, recover efficiently, and continuously adapt while maintaining value creation. Consequently, resilience is conceptualized not as an isolated organizational outcome but as the cumulative result of sequential capability development. This interpretation extends DCT beyond the traditional firm-level perspective by illustrating how higher-order capabilities evolve collectively across interconnected organizations operating within digital business ecosystems (Agarwal & Selen, 2009; Chandler et al., 2019; Eisenhardt & Martin, 2000; Jacobides et al., 2018).

2.2. Digital business ecosystem orchestration capability and ecosystem knowledge integration

Digital business ecosystems depend on the coordinated interaction of diverse actors who collectively generate, exchange, and exploit knowledge. Because ecosystem participants possess heterogeneous resources, expertise, and technological capabilities, the mere existence of collaborative networks does not ensure effective knowledge integration. Instead, firms require orchestration capability to align ecosystem participants, coordinate interdependent activities, facilitate information exchange, and establish governance mechanisms that enable knowledge to flow across organizational boundaries. DBEOC therefore extends beyond coordinating operational activities; it represents the strategic capability to mobilize complementary resources and synchronize ecosystem interactions toward common objectives.

Previous studies have consistently argued that orchestration strengthens collaboration by reducing coordination complexity, enhancing information transparency, and improving collective decision-making across ecosystem partners (Hewett et al., 2022; Kamalaldin et al., 2021; Korpela et al., 2013). Likewise, research on collaborative networks suggests that organizations with stronger coordination mechanisms create more favorable conditions for knowledge sharing, organizational learning, and resource integration because ecosystem participants become more willing to exchange complementary expertise and jointly solve emerging problems (Andrade et al., 2022; Cao & Zhang, 2011; Chen et al., 2023). From a DCT perspective, orchestration capability enables firms to continuously reconfigure ecosystem relationships and transform dispersed knowledge into collective strategic resources. Consequently, firms with stronger orchestration capability are expected to achieve higher levels of EKI by facilitating systematic collaboration among ecosystem actors.

However, the effectiveness of orchestration capability is unlikely to remain constant across digital business ecosystems. These ecosystems differ substantially in the pace of technological innovation, platform evolution, customer expectations, and competitive change. Under relatively stable conditions, organizations may integrate knowledge through established coordination routines. In contrast, highly dynamic ecosystems require organizations to continuously identify new partners, absorb emerging knowledge, and rapidly realign collaborative activities in response to environmental change. DCT suggests that higher-order capabilities become particularly valuable when external environments are uncertain and rapidly changing, because organizations must repeatedly reconfigure relationships and resources to sustain performance (Eisenhardt & Martin, 2000; Teece et al., 1997). Recent ecosystem research similarly argues that environmental dynamism intensifies the need for flexible governance structures, continuous collaboration, and adaptive coordination mechanisms within digital ecosystems (Alaassar et al., 2022; Gomes et al., 2023; Kornyshova et al., 2023). Accordingly, orchestration capability should have a stronger influence on EKI when firms operate in highly dynamic digital business ecosystems, where continuous adaptation depends on effective coordination among ecosystem actors and the rapid integration of newly generated knowledge.

H1. Ecosystem knowledge integration positively mediates the relationship between digital business ecosystem orchestration capability and digital business ecosystem resilience.

H4. Digital business ecosystem dynamism positively moderates the relationship between digital business ecosystem orchestration capability and ecosystem knowledge integration.

2.3. Ecosystem knowledge integration and ecosystem service innovation

The ability to integrate knowledge from multiple ecosystem participants has become a critical determinant of innovation in digital business ecosystems. Unlike traditional organizational settings, knowledge in digital ecosystems is widely dispersed across platform owners, technology providers, complementors, customers, and other ecosystem actors. These diverse knowledge sources differ in technological expertise, market insights, and operational experience, making effective integration a prerequisite for collaborative value creation. EKI therefore extends beyond information sharing, enabling organizations to combine heterogeneous knowledge into a shared understanding that supports collective learning and coordinated decision-making. Previous studies consistently show that organizations that integrate complementary knowledge are better positioned to recognize emerging opportunities, solve complex problems, and develop new solutions that individual firms could not generate independently (Abbate et al., 2022; Andrade et al., 2022; Chen et al., 2023). Within DCT, knowledge integration is an essential capability renewal process that transforms dispersed knowledge into strategic organizational assets. Rather than serving as a passive repository of information, integrated knowledge becomes an active resource that strengthens organizational adaptability and supports continuous capability development in rapidly changing environments (Eisenhardt & Martin, 2000; Teece et al., 1997).

Integrated ecosystem knowledge creates the conditions for developing innovative digital services by enabling ecosystem participants to identify unmet customer needs, combine complementary competencies, and jointly redesign service offerings. Service innovation rarely emerges from isolated organizational efforts within digital ecosystems. Instead, it evolves through continuous interaction among ecosystem participants who collectively generate, evaluate, and refine new service ideas. Earlier research has shown that collaborative learning, cross-organizational knowledge exchange, and capability integration significantly improve firms' ability to develop innovative services that enhance customer value and strengthen ecosystem competitiveness (Agarwal & Selen, 2009; Chandler et al., 2019; Dai et al., 2020). Similarly, studies on digital ecosystems emphasize that collaborative innovation depends on effectively integrating knowledge distributed among ecosystem participants, not on individual organizational expertise alone (Barile et al., 2020; Hein et al., 2019; Kamalaldin et al., 2021). Accordingly, EKI is the underlying capability through which organizations convert dispersed ecosystem intelligence into continuous ESI, thereby establishing a critical capability-building process within digital business ecosystems.

2.4. Ecosystem service innovation and digital business ecosystem resilience

Innovation has long been recognized as a primary mechanism for organizations to adapt to environmental uncertainty and sustain long-term competitiveness. Within digital business ecosystems, however, innovation extends beyond developing new products or technologies. ESI reflects ecosystem participants' collective capability to continuously design, improve, and commercialize digital services by combining complementary resources and capabilities. This innovation enables ecosystem actors to respond rapidly to technological disruptions, shifting customer expectations, and evolving competitive conditions while maintaining continuity in value creation. Previous studies suggest that organizations that continuously renew their service offerings show greater flexibility, faster adaptation, and stronger organizational performance in uncertain environments because innovation strengthens their capacity to reconfigure operational processes and exploit emerging opportunities (Agarwal & Selen, 2009; Chandler et al., 2019; Dai et al., 2020). Likewise, research on business ecosystems argues that collaborative service innovation strengthens ecosystem-wide adaptability by encouraging collective experimentation, shared problem solving, and continuous value co-creation among ecosystem participants (Barile et al., 2020; Hein et al., 2019; Kamalaldin et al., 2021). From a DCT perspective, service innovation is the reconfiguration stage in which previously integrated knowledge is transformed into new ecosystem capabilities that enhance resilience under changing environmental conditions (Eisenhardt & Martin, 2000; Teece et al., 1997). Consequently, ecosystems with stronger service innovation capabilities are expected to develop greater resilience because they can anticipate disruptions, respond more effectively to unexpected events, and sustain value creation despite environmental uncertainty.

Although ESI contributes to resilience, its effectiveness is unlikely to be uniform across ecosystem contexts. Digital business ecosystems vary widely in technological turbulence, platform evolution, customer preferences, and competitive intensity. Under relatively stable conditions, incremental service improvements may suffice to maintain ecosystem performance. However, in highly dynamic ecosystems, organizations must continuously redesign service offerings, introduce new digital solutions, and respond rapidly to emerging technological opportunities. Environmental dynamism therefore increases the strategic value of innovation because existing services become obsolete more quickly and customer expectations evolve faster. DCT holds that the benefits of organizational capabilities become more pronounced when firms operate in turbulent environments that require continuous

resource reconfiguration (Eisenhardt & Martin, 2000; Teece et al., 1997). Similarly, recent ecosystem studies emphasize that rapidly changing digital environments heighten the importance of adaptive innovation, collaborative experimentation, and continuous service renewal for sustaining ecosystem performance (Fernández-Portillo et al., 2024; Gomes et al., 2023; Kornyshova et al., 2023). Accordingly, DBED is expected to strengthen the positive influence of DBEOC on ESI because dynamic environments amplify the need for coordinated innovation across ecosystem participants.

H2. Ecosystem service innovation positively mediates the relationship between digital business ecosystem orchestration capability and digital business ecosystem resilience.

H5. Digital business ecosystem dynamism positively moderates the relationship between digital business ecosystem orchestration capability and ecosystem service innovation.

2.5. Sequential capability development toward digital business ecosystem resilience

DCT holds that sustainable competitive advantage rarely stems from a single organizational capability. Instead, superior performance emerges from a sequence of interconnected capabilities that enable organizations to continuously sense environmental changes, integrate relevant resources, and reconfigure existing competencies into new forms of value creation (Eisenhardt & Martin, 2000; Teece et al., 1997). This capability-building perspective is especially relevant to digital business ecosystems, where ecosystem outcomes depend on the coordinated actions of multiple independent actors rather than the capabilities of a single organization. Consequently, ecosystem resilience should not be viewed as the direct consequence of orchestration capability alone but as the cumulative outcome of successive capability development processes operating across the ecosystem.

Within this perspective, DBEOC is the initiating capability that coordinates ecosystem actors, aligns collaborative activities, and facilitates the exchange of complementary resources. However, coordinated interaction alone does not generate resilience unless ecosystem participants integrate the knowledge generated through these interactions. EKI transforms dispersed expertise into shared understanding, creating the cognitive foundation for collaborative learning and strategic decision-making. This collective knowledge subsequently enables ESI by supporting the development, refinement, and commercialization of innovative digital services that respond to emerging ecosystem needs. As new services enhance ecosystem flexibility, strengthen collaborative adaptation, and improve the continuity of value creation, DBER gradually emerges as the final outcome of this capability development process. Rather than operating as independent mechanisms, orchestration capability, knowledge integration, and service innovation constitute complementary and mutually reinforcing capabilities through which digital ecosystems continuously renew themselves under changing environmental conditions (Agarwal & Selen, 2009; Chandler et al., 2019; Jacobides et al., 2018; Kamalaldin et al., 2021).

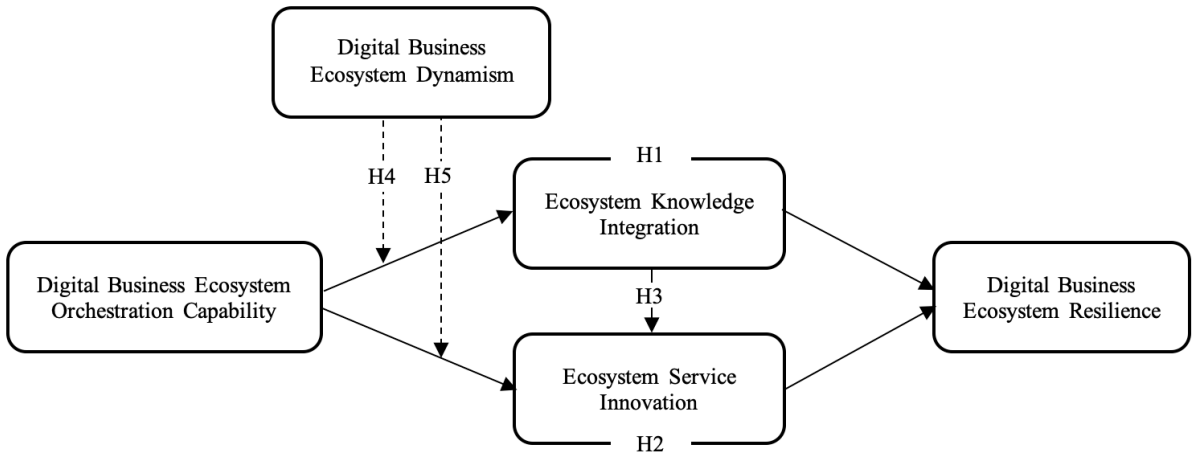


Figure 1. Conceptual model

This sequential perspective offers a more comprehensive explanation than treating knowledge integration and service innovation as parallel mediators. Although both capabilities contribute to ecosystem performance, service innovation is unlikely to occur without first integrating the heterogeneous knowledge distributed across ecosystem participants. Likewise, knowledge integration alone does not strengthen ecosystem resilience unless the integrated knowledge is transformed into innovative services that enhance ecosystem adaptability. Accordingly, the influence

of DBEOC on DBER is expected to unfold sequentially, with orchestration capability facilitating EKI, integrated knowledge stimulating ESI, and service innovation ultimately strengthening ecosystem resilience.

H3. Ecosystem knowledge integration and ecosystem service innovation sequentially mediate the relationship between digital business ecosystem orchestration capability and digital business ecosystem resilience.

3. Methodology

The study was approved by the Tianjin University Human Sciences Research and Ethics Committee, dated 12.09.2024, decision number AQTX-42-ZHU.

3.1. Sampling and data collection

This study used a quantitative design to examine relationships among DBEOC, EKI, ESI, DBER, and DBED. Data were collected through a structured questionnaire administered face-to-face from April to August 2025 among chefs and middle- and senior-management staff at 4- and 5-star hotels in the Chinese cities of Chongqing, Shanghai, Beijing, Chengdu, and Guangzhou. Face-to-face administration was preferred because it allowed respondents to seek clarification when needed and improved questionnaire completion.

A total of 469 usable questionnaires were obtained and included in the final analysis. The sample size met the minimum requirements for structural equation modeling and mediation analysis. To assess whether the sample provided sufficient statistical power, a post hoc power analysis was conducted in G*Power. The results indicated that the sample had adequate power to detect the hypothesized effects, supporting the robustness of the empirical analyses (Faul et al., 2009).

Participation in the survey was voluntary, and respondents were informed of the study's academic purpose before completing the questionnaire. The researchers maintained confidentiality and anonymity throughout data collection. All measurement items were rated on a five-point Likert scale, ranging from 1 ("strongly disagree") to 5 ("strongly agree").

3.2. Measures

The measurement instrument was developed by adapting well-established scales from prior studies to the digital business ecosystems context. Minor wording revisions improved clarity while preserving the constructs' original conceptual meanings.

DBEOC was measured using items adapted from Hewett et al. (2022), Kamalaldin et al. (2021), and Demir (2026). EKI was measured using items based on Chen et al. (2023) and Demir and Demir (2025). ESI was assessed using scales developed by Chandler et al. (2019), Dai et al. (2020), and Demir and Demir (2025). DBER was measured using items adapted from Dencik et al. (2023), Dey et al. (2023), and Fornasiero and Tolio (2024). Finally, DBED was measured using items from Korpela et al. (2013), Lettner et al. (2022), and Priyono and Hidayat (2024). Appendix A provides the complete list of measurement items.

3.3. Data analysis

The empirical analysis was conducted in several stages. IBM SPSS Statistics 26 was first used to screen the data, generate descriptive statistics, and assess the measurement scales' dimensional structure. Reliability was evaluated using Cronbach's alpha and composite reliability, and convergent validity was assessed using average variance extracted (AVE). All constructs met the recommended thresholds, indicating satisfactory internal consistency and convergent validity (Fornell & Larcker, 1981; Hair et al., 2010).

The construct validity of the measurement model was subsequently examined using confirmatory factor analysis (CFA) in AMOS 24.0. Model fit was evaluated using multiple goodness-of-fit indices, including χ^2/df, RMSEA, GFI, AGFI, NFI, IFI, TLI, and CFI. The fit indices indicated that the proposed measurement model fit the observed data adequately. Discriminant validity was evaluated using both the Fornell-Larcker criterion and the Heterotrait-Monotrait (HTMT) ratio. The results confirmed that each construct was empirically distinct from the others.

Because all variables were collected from the same respondents, common method bias was also examined. Following the recommendations of Podsakoff et al. (2012), a common latent factor approach was used to compare standardized factor loadings before and after including the method factor. The observed differences were minimal across all measurement items, indicating that common method variance was unlikely to threaten the validity of the

findings. The proposed hypotheses were tested using regression-based path analysis with bootstrapping. Direct, indirect, and sequential indirect effects were estimated using bias-corrected bootstrap confidence intervals. Mediation effects were considered significant when the 95% confidence intervals did not include zero (Preacher & Hayes, 2008). Conditional indirect effects were estimated to assess the moderating role of DBED, and moderated mediation was evaluated using the index of moderated mediation with bootstrap confidence intervals.

Finally, endogeneity was assessed using a two-stage least squares (2SLS) instrumental variable approach. Following prior management research, the industry- and region-level mean value of DBEOC, excluding the focal firm, served as the instrument. The Kleibergen-Paap LM and Cragg-Donald Wald F statistics indicated that the instrument was both relevant and sufficiently strong. Consistency between ordinary and instrumental variable estimates further supported the robustness of the proposed relationships.

4. Findings

4.1. Measurement model assessment

The psychometric properties of the measurement model were examined before testing the proposed hypotheses. Internal consistency reliability was assessed using Cronbach's alpha and composite reliability, and convergent validity was evaluated using AVE. As shown in Table 1, Cronbach's alpha coefficients ranged from 0.918 to 0.939, exceeding the recommended threshold of 0.70. Composite reliability ranged from 0.889 to 0.932, indicating strong internal consistency across all constructs. The AVE values ranged from 0.666 to 0.702, remaining well above the recommended minimum of 0.50. These findings confirm that the measurement scales demonstrate satisfactory reliability and convergent validity. Construct validity was subsequently assessed using confirmatory factor analysis. The overall measurement model fit the observed data well ($\chi^2/df = 1.287$, RMSEA = 0.035, GFI = 0.872, AGFI = 0.846, NFI = 0.938, IFI = 0.986, TLI = 0.984, and CFI = 0.986), indicating that the proposed factor structure adequately represented the data.

Table 1. Reliability and convergent validity

Construct	CR	AVE	Cronbach's α
DBEOC	0.921	0.702	0.928
EKI	0.926	0.684	0.936
ESI	0.919	0.671	0.931
DBER	0.932	0.694	0.939
DBED	0.889	0.666	0.918

Notes. *N* = 469. CR: Composite reliability, AVE: Average variance extracted, DBEOC: Digital business ecosystem orchestration capability, EKI: Ecosystem knowledge integration, ESI: Ecosystem service innovation, DBER: Digital business ecosystem resilience, DBED: Digital business ecosystem dynamism.

Table 2. Descriptive statistics, correlations, and discriminant validity

Construct	Mean	SD	1	2	3	4	5
1. DBEOC	3.214	0.982	0.838				
2. EKI	3.476	0.915	0.548**	0.827			
3. ESI	3.542	1.031	0.501**	0.469**	0.818		
4. DBER	3.185	0.948	0.421**	0.446**	0.566**	0.833	
5. DBED	3.688	0.974	0.435**	0.571**	0.489**	0.537**	0.816

Notes. *N* = 469. DBEOC: Digital business ecosystem orchestration capability, EKI: Ecosystem knowledge integration, ESI: Ecosystem service innovation, DBER: Digital business ecosystem resilience, DBED: Digital business ecosystem dynamism, $\chi^2/df = 1.287$ RMSEA = 0.035 GFI = 0.872 AGFI = 0.846 NFI = 0.938 IFI = 0.986 TLI = 0.984 CFI = 0.986 Diagonal values represent the square roots of AVE. ** $p < 0.01$

4.2. Descriptive statistics and discriminant validity

Table 2 presents descriptive statistics and correlation coefficients for the study variables. Mean values ranged from 3.185 to 3.688, and standard deviations ranged from 0.915 to 1.031, indicating adequate variation in respondents' evaluations. All correlations among the constructs were positive and statistically significant ($p < 0.01$). DBEOC was positively associated with EKI ($r = 0.548$), ESI ($r = 0.501$), DBER ($r = 0.421$), and DBED ($r = 0.435$). Similarly, EKI was positively related to ESI ($r = 0.469$), DBER ($r = 0.446$), and DBED ($r = 0.571$). Discriminant validity was first evaluated using the Fornell-Larcker criterion. As shown in Table 2, the square root of each construct's AVE exceeded its correlations with the other constructs, providing initial evidence of discriminant

validity. Table 3 further supported this conclusion with the HTMT analysis. All HTMT ratios were below the recommended threshold of 0.85, confirming that the constructs captured conceptually distinct phenomena. Because the data were collected from a single source, common method variance was also assessed. Table 4 compares the standardized factor loadings before and after introducing a common latent factor. The observed differences were consistently small across all measurement items, indicating that common method bias is unlikely to have materially influenced the findings.

Table 3. HTMT analysis

Constructs	DBEOC	EKI	ESI	DBER	DBED
DBEOC	—				
EKI	0.586	—			
ESI	0.542	0.401	—		
DBER	0.447	0.463	0.582	—	
DBED	0.471	0.614	0.593	0.518	—

Notes. $N = 469$. DBEOC: Digital business ecosystem orchestration capability, EKI: Ecosystem knowledge integration, ESI: Ecosystem service innovation, DBER: Digital business ecosystem resilience, DBED: Digital business ecosystem dynamism.

Table 4. Comparison of standardized factor loadings

Item	Baseline	With method factor	Difference
DBEOC1	0.938	0.917	0.021
DBEOC2	0.872	0.883	−0.011
DBEOC3	0.836	0.814	0.022
DBEOC4	0.821	0.834	−0.013
DBEOC5	0.867	0.853	0.014
EKI1	0.931	0.938	−0.007
EKI2	0.862	0.850	0.012
EKI3	0.837	0.845	−0.008
EKI4	0.812	0.801	0.011
EKI5	0.845	0.833	0.012
EKI6	0.829	0.819	0.010
ESI1	0.944	0.921	0.023
ESI2	0.828	0.846	−0.018
ESI3	0.834	0.808	0.026
ESI4	0.851	0.866	−0.015
ESI5	0.826	0.812	0.014
ESI6	0.869	0.875	−0.006
DBER1	0.947	0.944	0.003
DBER2	0.817	0.828	−0.011
DBER3	0.851	0.839	0.012
DBER4	0.836	0.851	−0.015
DBER5	0.814	0.827	−0.013
DBER6	0.839	0.828	0.011
DBED1	0.929	0.911	0.018
DBED2	0.839	0.853	−0.014
DBED3	0.846	0.818	0.028
DBED4	0.884	0.889	−0.005

Notes. $N = 469$. DBEOC: Digital business ecosystem orchestration capability, EKI: Ecosystem knowledge integration, ESI: Ecosystem service innovation, DBER: Digital business ecosystem resilience, DBED: Digital business ecosystem dynamism.

4.3. Structural model and hypothesis testing

The proposed hypotheses were tested using bootstrapping with bias-corrected confidence intervals. Table 5 summarizes the direct, indirect, sequential, and conditional indirect effects. The total effect of DBEOC on DBER was positive and statistically significant ($\beta = 0.405$, $p < 0.001$). However, after incorporating the proposed mediators, the direct effect became statistically insignificant ($\beta = 0.096$, $p = 0.167$), indicating that orchestration capability

influenced ecosystem resilience through indirect mechanisms rather than a direct relationship. The mediation analyses supported all proposed indirect relationships. EKI significantly mediated the relationship between DBEOC and DBER (indirect effect = 0.243, 95% CI [0.156, 0.338]). Likewise, ESI significantly mediated the relationship (indirect effect = 0.091, 95% CI [0.026, 0.154]). In addition, the sequential mediation effect through EKI followed by ESI was statistically significant (indirect effect = 0.166, 95% CI [0.103, 0.238]). Because none of the confidence intervals included zero, H1, H2, and H3 were supported.

Table 5. The effects of digital business ecosystem orchestration capability on digital business ecosystem resilience

Path	*t*	*SE*	*p*	Effect	LLCI	ULCI
Total effect of DBEOC on DBER						
DBEOC → DBER	6.842	0.059	< 0.001	0.405	0.289	0.521
Direct effect of DBEOC on DBER						
DBEOC → DBER	1.387	0.070	0.167	0.096	−0.040	0.233
Indirect effects of DBEOC on DBER						
Indirect Path		BootSE		Effect	BootLLCI	BootULCI
DBEOC → EKI → DBER		0.046		0.243	0.156	0.338
DBEOC → ESI → DBER		0.032		0.091	0.026	0.154
DBEOC → EKI → ESI → DBER		0.034		0.166	0.103	0.238
Conditional indirect effects at different levels of DBED						
Moderating effect of DBED						
Path	Level of DBED	BootSE		Effect	BootLLCI	BootULCI
DBEOC → EKI → DBER	Low (−1 SD)	0.028		0.071	0.022	0.132
	Mean	0.031		0.098	0.044	0.166
	High (+1 SD)	0.039		0.128	0.061	0.212
DBEOC → ESI → DBER	Low (−1 SD)	0.044		0.117	0.036	0.206
	Mean	0.036		0.136	0.070	0.215
	High (+1 SD)	0.043		0.162	0.084	0.251
Moderated mediation index						
Moderated mediation path	Index	BootSE			BootLLCI	BootULCI
DBEOC → EKI → DBER	0.028	0.011			0.009	0.052
DBEOC → ESI → DBER	0.021	0.010			0.005	0.044

Table 6. Instrumental variable (2SLS) regression results

Variable	First stage: DBEOC	Second stage: EKI	Second stage: ESI	Second stage: DBER
Instrumental variable: Mean DBEOC of other firms in the same industry and region	0.184*** (3.18)			
DBEOC		0.712** (2.34)	1.268** (2.59)	2.241*** (3.92)
DBED	0.226*** (3.89)	0.251** (2.48)	0.176 (1.21)	—
Firm Size	0.173* (1.76)	0.041 (0.29)	−0.119 (−0.67)	−0.284 (−0.93)
Firm Age	0.148* (1.69)	0.087 (0.71)	−0.196 (−1.12)	−0.618* (−1.84)
Constant	0.734*** (3.21)	0.461 (1.18)	−0.082 (−0.14)	−2.196** (−2.16)
Industry Fixed Effects	Yes	Yes	Yes	Yes
Regional Fixed Effects	Yes	Yes	Yes	Yes
Kleibergen–Paap rk LM statistic	19.436***			
Cragg–Donald Wald F statistic	21.782			
Observations	214	214	214	214
Adjusted R^2	0.314	0.298	0.357	0.421

Notes. $N = 469$. Standardized regression coefficients are reported. Values in parentheses are t-statistics.
* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

The moderating role of DBED was then examined by estimating conditional indirect effects at low, mean, and high levels of the moderator. For the indirect pathway through EKI, the conditional indirect effect rose from 0.071 at low dynamism to 0.128 at high dynamism. A similar pattern emerged for mediation through ESI, with the indirect effect increasing from 0.117 to 0.162 as ecosystem dynamism increased. These findings indicate that the

positive influence of orchestration capability strengthens in more dynamic digital business ecosystems. The moderated mediation analysis further confirmed these results.

The index of moderated mediation was positive and statistically significant for both mediation pathways, as the bootstrap confidence intervals did not include zero. Specifically, the index was 0.028 (95% CI [0.009, 0.052]) for the EKI pathway and 0.021 (95% CI [0.005, 0.044]) for the ESI pathway. Accordingly, H4a and H4b were supported. Table 8 summarizes the overall hypothesis-testing results and shows that all proposed hypotheses were empirically supported.

4.4. Robustness check

To address potential endogeneity concerns, a two-stage least squares (2SLS) instrumental variable approach was employed. Following prior research, the industry- and region-level mean of DBEOC was used as the instrument. As reported in Table 6, the instrumental variable significantly predicted DBEOC in the first-stage regression (β = 0.184, $p < 0.001$). The Kleibergen-Paap LM statistic confirmed instrument relevance, and the Cragg-Donald Wald F statistic exceeded the commonly accepted threshold for weak instrument diagnostics. In the second-stage estimates, DBEOC remained positively associated with EKI (β = 0.712, $p < 0.01$), ESI (β = 1.268, $p < 0.01$), and DBER (β = 2.241, $p < 0.001$). These findings suggest the reported relationships are unlikely to be driven by endogeneity and further support the robustness of the empirical results.

Table 7. Standardized measurement model results

Constructs / items	Standardized loading	Squared loading	Error variance
DBEOC1	0.886	0.785	0.215
DBEOC2	0.851	0.724	0.276
DBEOC3	0.817	0.667	0.333
DBEOC4	0.803	0.645	0.355
DBEOC5	0.829	0.687	0.313
EKI1	0.881	0.776	0.224
EKI2	0.848	0.719	0.281
EKI3	0.833	0.694	0.306
EKI4	0.814	0.663	0.337
EKI5	0.798	0.637	0.363
EKI6	0.785	0.616	0.384
ESI1	0.879	0.773	0.227
ESI2	0.842	0.709	0.291
ESI3	0.826	0.682	0.318
ESI4	0.811	0.658	0.342
ESI5	0.798	0.637	0.363
ESI6	0.751	0.564	0.436
DBER1	0.891	0.794	0.206
DBER2	0.856	0.733	0.267
DBER3	0.837	0.701	0.299
DBER4	0.822	0.676	0.324
DBER5	0.801	0.642	0.358
DBER6	0.773	0.598	0.402
DBED1	0.862	0.743	0.257
DBED2	0.831	0.691	0.309
DBED3	0.798	0.637	0.363
DBED4	0.769	0.591	0.409

Table 8. Final hypothesis testing results

Hypothesis	Proposed effect	Effect type	Result
H1	DBEOC → EKI → DBER	Positive indirect effect	Supported
H2	DBEOC → ESI → DBER	Positive indirect effect	Supported
H3	DBEOC → EKI → ESI → DBER	Positive sequential indirect effect	Supported
H4a	DBED positively moderates DBEOC → EKI	Positive first-stage moderation	Supported
H4b	DBED positively moderates DBEOC → ESI	Positive first-stage moderation	Supported

5. Discussion and conclusions

This study examined how DBEOC contributes to DBER by considering the sequential roles of EKI and ESI, while also assessing DBED's moderating influence. Although previous research has recognized the strategic importance of orchestration, innovation, and resilience within digital ecosystems, these constructs have generally been investigated in isolation or through direct relationships. By integrating them into a single capability development framework, this study offers a more comprehensive explanation of how resilience emerges in digitally connected business environments. The findings suggest that ecosystem resilience is not an immediate consequence of orchestration capability. Instead, resilience develops through a sequence of organizational processes that transform coordinated ecosystem interactions into integrated knowledge and, subsequently, into innovative ecosystem services. This interpretation extends existing ecosystem research by emphasizing capability development rather than isolated organizational resources (Agarwal & Selen, 2009; Jacobides et al., 2018; Kamalaldin et al., 2021).

The first important finding concerns the indirect role of EKI. The results indicate that orchestration capability enhances resilience by strengthening the ecosystem's ability to acquire, combine, and disseminate knowledge across multiple participants. This finding aligns with previous studies arguing that effective coordination facilitates knowledge exchange and collaborative learning among ecosystem actors (Andrade et al., 2022; Cao & Zhang, 2011; Chen et al., 2023). However, these findings also extend the literature by showing that knowledge integration should not be viewed merely as an information management activity. Rather, it functions as a dynamic organizational capability that enables ecosystem participants to transform dispersed expertise into collective strategic action. From a DCT perspective, this finding reinforces the argument that competitive advantage depends not only on accessing external knowledge but also on continuously reconfiguring and integrating distributed resources in response to environmental change (Demir, 2026; Eisenhardt & Martin, 2000; Teece et al., 1997). Consequently, orchestration capability creates value by establishing the conditions under which ecosystem knowledge can be effectively integrated rather than simply exchanged.

The second major finding highlights ESI's mediating role. While previous studies have consistently linked collaborative innovation to organizational adaptability and competitive performance, they have rarely explained how service innovation emerges from ecosystem capabilities (Agarwal & Selen, 2009; Chandler et al., 2019; Dai et al., 2020). The present findings suggest that orchestration capability contributes to resilience by enabling continuous service renewal across ecosystem participants. This result supports the growing view that digital ecosystems require ongoing innovation rather than episodic technological improvements (Barile et al., 2020; Hein et al., 2019). At the same time, the findings indicate that service innovation alone cannot explain ecosystem resilience. Instead, innovation appears to be the operational manifestation of broader capability development processes initiated through orchestration and strengthened through knowledge integration. This interpretation broadens the understanding of service innovation by positioning it within a dynamic sequence of interconnected organizational capabilities rather than treating it as an isolated outcome.

Perhaps the most important contribution of the empirical findings concerns the sequential mediation mechanism. Earlier studies have generally treated knowledge integration and innovation as independent explanatory variables. The present results suggest a different interpretation. Knowledge integration appears to provide the cognitive infrastructure through which ecosystem actors develop a shared understanding of emerging opportunities and challenges, whereas service innovation represents the practical implementation of that collective knowledge (Demir & Demir, 2025). The significant sequential mediation therefore indicates that resilience is gradually built through successive stages of capability development rather than generated directly by ecosystem coordination. This finding aligns with the central logic of DCT, which holds that sustainable performance depends on continuous capability renewal rather than isolated organizational actions (Eisenhardt & Martin, 2000; Teece et al., 1997). It also complements ecosystem research, emphasizing that value creation increasingly depends on interactions among multiple organizations rather than firm-specific resources alone (Baumann & Leerhoff, 2022; Jacobides et al., 2018; Zheng, 2026).

Another important finding concerns DBED's moderating role. The results indicate that orchestration capability becomes more influential amid rapid technological change, evolving customer expectations, and increasing ecosystem complexity. This finding supports earlier studies arguing that organizational capabilities become more valuable when firms operate in turbulent environments (Alaassar et al., 2022; Kornyshova et al., 2023; Teece et al., 1997). Nevertheless, the present study offers a more nuanced explanation than previous research. Rather than assuming that environmental dynamism directly improves organizational performance, the findings suggest that dynamism amplifies the effectiveness of orchestration capability by increasing the need for coordinated knowledge integration and collaborative service innovation. In relatively stable ecosystems, existing coordination routines

may remain sufficient to maintain performance. By contrast, highly dynamic ecosystems require organizations to repeatedly redesign collaborative relationships, integrate newly generated knowledge, and develop innovative service configurations. Consequently, environmental dynamism should be understood as a contextual condition that strengthens capability deployment rather than as an independent driver of resilience.

Another finding is that the direct relationship between DBEOC and DBER became statistically insignificant after introducing the mediating variables. This pattern suggests that orchestration capability does not generate resilience independently. Instead, it transmits its influence almost entirely through intermediate organizational capabilities. This result differs from several earlier studies that implicitly assumed orchestration directly contributes to ecosystem performance (Demir, 2026; Hewett et al., 2022; Kamalaldin et al., 2021). One possible explanation is that increasing ecosystem complexity reduces the effectiveness of coordination alone. Digital platforms may successfully connect ecosystem participants, but resilience is unlikely to emerge unless the resulting interactions are converted into integrated knowledge and, subsequently, into innovative ecosystem services. Accordingly, orchestration should be interpreted as an enabling capability whose value depends on the quality of subsequent capability development processes.

Taken together, these findings reinforce DCT's suitability for explaining organizational adaptation within digital business ecosystems and extend its application to the ecosystem level. Traditional dynamic capability research has primarily examined how individual firms sense opportunities, seize resources, and reconfigure organizational assets. This study shows that these processes increasingly unfold across interconnected ecosystems, where multiple actors collectively contribute to capability development. Resilience therefore emerges as a shared ecosystem outcome rather than a firm-specific organizational attribute. This perspective reflects the collaborative nature of contemporary digital business ecosystems, where sustained competitiveness depends on the coordinated evolution of ecosystem-wide capabilities rather than the isolated strengths of individual organizations (Bharadwaj et al., 2013; Jacobides et al., 2018; Kornyshova et al., 2023).

Overall, the findings indicate that resilient digital business ecosystems emerge from an interconnected process of orchestration, knowledge integration, and continuous service innovation. Organizations operating in digitally intensive environments should therefore move beyond technology-oriented investments and place greater emphasis on developing collaborative capabilities that strengthen ecosystem learning and innovation. By clarifying the mechanisms linking orchestration capability to ecosystem resilience and identifying the contextual role of ecosystem dynamism, this study offers a more integrated understanding of how digital business ecosystems maintain adaptability and continuity amid increasing uncertainty.

5.1. Theoretical implications

This study contributes to the literature on digital business ecosystems, dynamic capabilities, and ecosystem resilience in several ways. First, it addresses an important gap by explaining how orchestration capability translates into ecosystem resilience through an integrated capability development process. Previous studies have generally examined orchestration capability, knowledge integration, service innovation, and resilience as separate constructs or have focused primarily on their direct relationships (Chekfoung et al., 2020; Hewett et al., 2022; Kamalaldin et al., 2021). The present study demonstrates that these capabilities should not be interpreted in isolation because resilience emerges through their sequential interaction. This finding shifts the emphasis from isolated organizational capabilities to an integrated ecosystem capability perspective.

Second, the study extends DCT beyond its traditional firm-level focus. Earlier applications of the theory have primarily explained how organizations sense opportunities, seize resources, and reconfigure internal capabilities to sustain competitive advantage (Eisenhardt & Martin, 2000; Teece et al., 1997). The findings suggest that these capability-building processes increasingly occur across organizational boundaries rather than within individual firms. Digital business ecosystems require firms to coordinate multiple actors, integrate distributed knowledge, and jointly develop innovative services to achieve resilience. This broader interpretation aligns with recent arguments that competitive advantage in digital environments is increasingly created through ecosystem-wide interactions rather than firm-specific resources alone (Baumann & Leerhoff, 2022; Jacobides et al., 2018; Zheng, 2026).

Third, the study contributes to the knowledge integration literature by positioning EKI as a dynamic capability rather than a simple information-processing mechanism. Existing studies (e.g., Andrade et al., 2022; Chen et al., 2023) have primarily emphasized knowledge sharing, learning, or absorptive capacity as independent determinants of organizational performance. The findings indicate that knowledge integration plays a strategic role by linking orchestration activities to subsequent service innovation. This suggests that the value of knowledge integration depends on acquiring information and on transforming dispersed ecosystem knowledge into coordinated action.

The study also contributes to the service innovation literature by clarifying ESI's role in capability development. Earlier research has consistently linked service innovation to organizational flexibility and customer value creation (Agarwal & Selen, 2009; Chandler et al., 2019; Dai et al., 2020). However, research has paid relatively little attention to the organizational conditions that enable continuous service innovation in digital ecosystems. The findings indicate that service innovation is the operational outcome of prior orchestration and knowledge integration activities. Consequently, innovation should be viewed as a capability developed through ecosystem collaboration rather than as an isolated organizational competence.

Another theoretical contribution concerns the role of DBED. Previous studies have generally treated environmental dynamism as a contextual variable that influences organizational performance (Alaassar et al., 2022; Fernández-Portillo et al., 2024; Kornyshova et al., 2023). The present study refines this perspective by showing that ecosystem dynamism strengthens the effectiveness of orchestration capability rather than directly improving resilience. This finding suggests that rapidly changing environments do not automatically yield superior organizational outcomes. Instead, they heighten the strategic importance of higher-order capabilities that enable ecosystem actors to continuously coordinate relationships, integrate knowledge, and renew service offerings.

Finally, the lack of a significant direct relationship between orchestration capability and resilience, after including the mediators, provides an important theoretical insight. Rather than directly generating resilience, orchestration capability enables it, and its influence depends on subsequent organizational processes. This finding challenges the implicit assumption in parts of the ecosystem literature that coordination alone is sufficient to improve ecosystem outcomes (Hewett et al., 2022; Kamalaldin et al., 2021). Instead, the results suggest that resilience is better understood as the cumulative outcome of successive capability development processes operating across digitally connected ecosystems.

5.2. Practical implications

The findings offer several practical implications for managers responsible for coordinating digital business ecosystems. The results indicate that investments in digital technologies alone are unlikely to produce resilient ecosystems unless paired with mechanisms that strengthen collaboration, knowledge integration, and continuous service innovation. Managers should therefore evaluate orchestration capability not only by platform coordination but also by its ability to facilitate learning and innovation across ecosystem participants.

For ecosystem leaders and platform owners, the findings suggest that governance structures should promote systematic interaction among partners rather than focusing exclusively on operational efficiency. Digital platforms should incorporate collaborative decision-making mechanisms, shared data standards, and transparent communication protocols that enable ecosystem members to exchange knowledge more effectively. These practices can improve the quality of ecosystem learning and accelerate the conversion of new knowledge into innovative service solutions. Managers should also recognize that integrating knowledge requires deliberate organizational support. Simply providing access to digital information does not ensure that ecosystem participants will develop a shared understanding or coordinated responses. Organizations should establish cross-functional teams, joint innovation workshops, digital collaboration platforms, and structured knowledge-sharing routines that encourage the integration of expertise from suppliers, technology providers, customers, and complementary partners. These practices can reduce fragmentation within digital ecosystems and improve collective problem-solving capacity.

The findings further suggest that ecosystem resilience depends on continuous service innovation rather than on occasional technological upgrades. Managers should therefore create organizational environments that support experimentation, rapid prototyping, and collaborative service design. Rather than evaluating innovation solely by the number of new digital services introduced, organizations should assess whether new service configurations improve ecosystem adaptability, strengthen collaboration among partners, and enable faster responses to unexpected disruptions. Continuous service renewal appears particularly important in ecosystems marked by frequent technological change. DBED's moderating role also has managerial implications. Organizations in highly dynamic environments should place greater emphasis on capability development than firms in relatively stable ecosystems. Because technological change and competitive conditions evolve rapidly, managers should regularly review ecosystem governance arrangements, partnership structures, and knowledge integration mechanisms rather than relying on established coordination routines. Periodic ecosystem capability assessments may help identify weaknesses before they erode ecosystem resilience.

The findings also have implications for public policymakers and institutions that support digital transformation. Policies to strengthen digital ecosystems should go beyond investments in digital infrastructure alone. Greater attention should be devoted to initiatives that foster interorganizational collaboration, joint innovation programs,

digital skills development, and cross-sector knowledge networks. Such initiatives may enhance the long-term resilience of regional and national digital ecosystems by strengthening the collective capabilities of participating organizations rather than supporting individual firms in isolation. Finally, executives should view ecosystem resilience as a strategic capability that requires ongoing development. Rather than reacting to disruptions after they occur, organizations should invest in collaborative learning processes to improve preparedness before crises emerge. Firms that continuously strengthen orchestration capability, knowledge integration, and service innovation are likely to be better positioned to sustain value creation amid technological uncertainty and environmental turbulence.

5.3. Limitations and future research directions

Several limitations should be considered when interpreting the findings. First, the study used a cross-sectional design. Although the proposed relationships are theoretically grounded and supported by empirical evidence, causal inferences remain limited. Future studies could adopt longitudinal designs to examine how orchestration capability, knowledge integration, and service innovation evolve over time and jointly influence ecosystem resilience. Second, the data were collected from a single country over a specific period. Institutional environments, technological maturity, and ecosystem governance structures may vary across countries, potentially influencing the observed relationships. Comparative studies across multiple countries or regions would improve the findings' generalizability and deepen understanding of contextual differences. Third, the study focused on five ecosystem capabilities derived from DCT. Future research may incorporate additional constructs, such as digital trust, platform governance quality, ecosystem openness, artificial intelligence capability, cybersecurity capability, or inter-organizational absorptive capacity, to provide a more comprehensive explanation of resilience in digital business ecosystems. Finally, future research could explore alternative theoretical perspectives alongside DCT. Integrating this perspective with the Resource-Based View, Knowledge-Based View, Organizational Learning Theory, or Service-Dominant Logic may yield additional insights into how collaborative capabilities develop across digital ecosystems. Multi-level research designs that examine both firm- and ecosystem-level capabilities would also help clarify the mechanisms through which resilience emerges in increasingly interconnected digital environments.

Author contribution

Lee Han-Soo: Conceptualization, Formal analysis, Software, Supervision, Validation, Visualization, Writing-review & editing. **Albia Luna Brestov**: Investigation, Methodology, Software, Supervision, Validation, Visualization, Writing-review & editing.

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Data availability statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

Ethics committee approval

The study was approved by the Tianjin University Human Sciences Research and Ethics Committee, dated 12.09.2024, decision number AQTX-42-ZHU. It adhered to the Declaration of Helsinki guidelines for research involving human subjects.

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Appendix A. Measurement scale

Construct	Code	Measurement items
Digital business ecosystem orchestration capability (DBEOC)	DBEOC1	Our firm possesses the digital infrastructure and specialized expertise required to coordinate activities across ecosystem partners.
	DBEOC2	Our firm can align the digital resources and capabilities of different ecosystem participants.
	DBEOC3	Our firm can rapidly reconfigure relationships among digital platforms, partners, and technologies.
	DBEOC4	Our firm uses shared digital standards and interfaces to coordinate ecosystem-wide activities.
	DBEOC5	Our firm integrates information from ecosystem actors into joint strategic and operational decisions.
Ecosystem knowledge integration (EKI)	EKI1	We systematically acquire knowledge from customers, suppliers, platform owners, and other ecosystem partners.
	EKI2	Knowledge generated by different ecosystem participants is effectively combined within our firm.
	EKI3	We use digital systems to integrate knowledge from multiple internal and external sources.
	EKI4	Relevant knowledge is shared promptly across organizational and ecosystem boundaries.
	EKI5	Employees modify their decisions and work processes in response to newly integrated ecosystem knowledge.
	EKI6	Insights obtained from ecosystem partners are translated into coordinated organizational action.
Ecosystem service innovation (ESI)	ESI1	We jointly develop new digital services with ecosystem partners.
	ESI2	We frequently redesign existing services by combining complementary partner capabilities.
	ESI3	We use ecosystem data to identify and develop new digital service opportunities.
	ESI4	We rapidly introduce new service configurations in response to ecosystem changes.
	ESI5	We experiment with new digital service delivery processes together with ecosystem participants.
	ESI6	We continuously create innovative value propositions that involve multiple ecosystem actors.
Digital business ecosystem resilience (DBER)	DBER1	Our digital business ecosystem can maintain its essential functions during major disruptions.
	DBER2	Our ecosystem can rapidly restore digital operations following an unexpected disruption.
	DBER3	Ecosystem participants can coordinate effectively when normal digital processes are interrupted.
	DBER4	Our ecosystem can shift resources and responsibilities when critical partners become unavailable.
	DBER5	Our ecosystem can adapt its business model to emerging technological or market disruptions.
	DBER6	Our ecosystem learns from disruptions and becomes better prepared for future disturbances.
Digital business ecosystem dynamism (DBED)	DBED1	Digital technologies relevant to our ecosystem change rapidly.
	DBED2	Customer expectations for digitally enabled products and services change frequently.
	DBED3	Competitors and new digital entrants regularly introduce unexpected business models.
	DBED4	The roles, capabilities, and relationships of ecosystem participants change unpredictably.

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When songs become destinations: Popular music, narrative transportation, and travel intentions

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When songs become destinations: Popular music, narrative transportation, and travel intentions

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Abstract

This study examines how destination narratives embedded in popular songs influence destination image, perceived destination attractiveness, narrative transportation, and travel intentions. Thirty-seven international participants listened to destination-themed popular songs before participating in semi-structured interviews. Data were analyzed using thematic analysis, yielding four overarching themes: Music-Shaped Destination Image, Construction of Destination Attractiveness, Narrative Transportation into the Destination, and Music-Induced Travel Intentions. The findings show that popular songs create multidimensional destination meanings by stimulating cognitive evaluations, emotional responses, and imagined travel experiences. Rather than directly motivating travel, music influences behavioral intentions through a sequential interpretive process in which narrative immersion strengthens destination image and perceived attractiveness. The study extends existing tourism theory by positioning popular music as a narrative communication medium that shapes destination perceptions beyond conventional marketing channels and offers practical insights for destination branding and cultural tourism strategies.

1. Introduction

Tourism destinations are increasingly shaped not only by direct travel experiences but also by symbolic representations circulated across media (Beşirova, 2024; Demir et al., 2023). Music is one of the most enduring yet underexplored channels through which places are imagined, interpreted, and remembered. Popular songs often portray cities, countries, and regions by highlighting their landscapes, cultural traditions, lifestyles, emotions, and historical identities. These narratives help listeners form mental images of places they may never have visited, making destinations familiar long before an actual trip. As destination marketing has gradually shifted from tangible attractions to emotional and experiential communication, understanding how music contributes to destination attractiveness has become increasingly relevant. While digital platforms have broadened the global reach of destination-related songs, their influence extends beyond entertainment, shaping perceptions, curiosity, and emotional engagement with places (Baloglu & McCleary, 1999; Gartner, 1994; Gibson & Connell, 2005; Wang et al., 2023).

Existing tourism research has devoted considerable attention to destination image formation and the factors that shape tourists' perceptions and behavioral intentions. Earlier studies primarily examined traditional information sources, including destination marketing campaigns, word-of-mouth communication, and media exposure (Baloglu & McCleary, 1999; Beerli & Martín, 2004; Gartner, 1994). More recently, researchers (e.g., Correia et al., 2025; Diaz-Pacheco et al., 2024; Liu et al., 2024; Tan et al., 2025; Wang et al., 2024) have shifted their focus toward user-generated content, artificial intelligence, social media, and visual communication as mechanisms for constructing and disseminating destination images. Parallel research has also shown that music can stimulate destination awareness, reinforce place attachment, and influence travel decisions (Chen et al., 2019; Kim et al., 2023; Min et al., 2020; Yin et al., 2020).

Nevertheless, much of this literature has concentrated on music festivals, K-pop tourism, celebrity influence, indigenous music, or destination branding through musical events (Connell & Gibson, 2004; Fan et al., 2023;

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Henke, 2005; Long, 2014). By comparison, relatively little attention has been given to how listeners interpret destination narratives embedded in popular songs and transform them into perceptions of tourism attractiveness.

This gap is noteworthy because destination-related songs integrate lyrics, melody, emotion, and storytelling into a single narrative experience. Unlike promotional campaigns that intentionally market destinations, popular songs often create spontaneous, emotionally rich representations of places that listeners perceive as authentic. Through these narratives, destinations may become associated with romance, nostalgia, adventure, cultural heritage, nightlife, or local identity, thereby shaping cognitive and emotional evaluations before any physical visit (Yaşar, 2026a, 2026b). Although several studies (e.g., Chen et al., 2019; Fan et al., 2023; Yin et al., 2020) have confirmed that destination-related music can enhance destination image and travel intentions, relatively few have examined the interpretive process by which listeners construct imagined destinations after engaging with popular songs. Moreover, previous studies have relied predominantly on quantitative approaches, leaving limited understanding of how individuals explain, negotiate, and justify their interpretations of destination attractiveness.

This study adopts Narrative Transportation Theory (NTT) (Green & Brock, 2000; Green et al., 2004; Van Laer et al., 2014) and Destination Image Theory (DIT) (Baloglu & McCleary, 1999; Beerli & Martín, 2004; Gartner, 1994), situating the inquiry within the broader music-induced tourism (MIT) framework (Connell & Gibson, 2003, 2004; Gibson & Connell, 2005). NTT explains how listeners become mentally immersed in destination stories conveyed through music, whereas DIT provides the foundation for understanding how these experiences shape cognitive and affective evaluations of destinations. The MIT perspective further clarifies how such evaluations may encourage travel-related intentions. By integrating these perspectives, this study extends previous research beyond event-based or celebrity-driven music tourism and focuses instead on destination narratives embedded in popular songs. Methodologically, it contributes to the literature by employing qualitative interviews following exposure to carefully selected destination songs, enabling participants to articulate how music shapes their perceptions, imagined experiences, and travel intentions. Practically, the findings offer valuable insights for destination management organizations, tourism marketers, and cultural policymakers seeking to incorporate popular music into destination branding and storytelling strategies that resonate with potential visitors.

2. Literature review

2.1. Music as a medium for constructing destination meanings

Unlike conventional destination promotion, popular music rarely markets places explicitly. Instead, it embeds destinations in stories, emotions, memories, and cultural references that listeners encounter in lyrics and melody. Cities, countries, and landscapes often become more than geographical settings; they become symbolic spaces associated with freedom, romance, nostalgia, identity, or aspiration. These representations enable listeners to develop meanings about destinations without relying on factual information or direct experience. Music functions as a cultural medium through which people interpret, imagine, and emotionally experience places. This symbolic role distinguishes music from traditional promotional communication because listeners are generally engaged by the narrative itself rather than by persuasive marketing messages. Destination meanings constructed through music may be perceived as more authentic, memorable, and emotionally resonant than those generated through formal advertising (Connell & Gibson, 2003, 2004; Gibson & Connell, 2005; Long, 2014).

The growing interest in music within tourism research reflects a broader recognition that destinations are socially and culturally constructed rather than objectively consumed. Previous studies (e.g., Chen et al., 2019; Fan et al., 2023; Wu et al., 2025) have shown that music contributes to destination identity by communicating local culture, heritage, soundscapes, and collective memory, while strengthening emotional bonds between people and places. For example, folk music often conveys traditions and community values, whereas popular songs may project images of nightlife, cosmopolitan lifestyles, or natural scenery that become closely associated with particular destinations. Such musical representations often shape expectations before travel begins and may continue to influence visitors' evaluations afterward. However, existing research has primarily examined music as a destination attribute, a cultural product, or a marketing resource. By comparison, less attention has been paid to how listeners actively interpret destination narratives embedded in popular songs and transform them into personal understandings of tourism attractiveness.

2.3. Destination image and destination attractiveness through music

Rather than reflecting objective destination characteristics alone, destination image comprises the beliefs, impressions, emotions, and expectations individuals associate with a particular place (Artuner Özder, 2026; Baloglu &

McCleary, 1999; Gartner, 1994; Rocksand, 2025). Because most tourists cannot personally experience every destination before traveling, they rely on various information sources to form mental representations (Akbayzadeh & Liu, 2025). These representations, in turn, influence destination attractiveness, destination choice, and behavioral intentions. Consequently, destination image is increasingly viewed as a dynamic cognitive process that evolves through ongoing interaction with media, communication channels, and cultural experiences, rather than as a fixed perception of place (Beerli & Martín, 2004; Wang et al., 2023).

The literature generally distinguishes destination image into cognitive and affective dimensions. Cognitive image refers to visitors' knowledge and beliefs about destination attributes, such as cultural heritage, natural landscapes, local traditions, entertainment opportunities, accessibility, and infrastructure (Yaşar, 2026a, 2026b). Affective image, in contrast, reflects emotional evaluations of a destination, including excitement, relaxation, romance, nostalgia, and attachment (Baloglu & McCleary, 1999; Beerli & Martín, 2004). Emotional responses often strengthen or weaken cognitive evaluations, while cognitive beliefs provide the context in which emotional meanings emerge. This interaction suggests that people evaluate destinations not only by what they offer but also by how they make them feel.

Popular songs are especially effective at influencing both dimensions simultaneously. Lyrics convey descriptive information about destinations by referencing places, people, landscapes, cultural practices, and everyday life, thereby enriching listeners' mental images. At the same time, melody, rhythm, vocal performance, and musical atmosphere evoke emotional responses that shape affective evaluations of those destinations. A song about Havana, Paris, or New York, for example, may communicate distinctive cultural characteristics while evoking feelings of romance, freedom, nostalgia, excitement, or aspiration. Because these two forms of evaluation unfold together during the listening experience, destination narratives embedded in music can generate richer, more holistic destination images than information sources that rely primarily on factual descriptions. This integrated process explains why music often leaves enduring impressions of destinations despite providing relatively limited objective information.

Previous studies (e.g., Dzitse & Amoah, 2024; Ji et al., 2025; Keleş, 2021; Pan et al., 2026) show that cultural resources, gastronomy, festivals, natural environments, and entertainment opportunities enhance destination attractiveness when visitors perceive them positively. Social media, artificial intelligence, short-form videos, user-generated content, and visual storytelling have been shown to influence how destinations are imagined and evaluated (Correia et al., 2025; Diaz-Pacheco et al., 2024; Liu et al., 2024; Tan et al., 2025; Zhang et al., 2026). Nevertheless, music remains relatively underrepresented in this growing body of research. Existing studies have largely examined music as a component of destination branding, sensory marketing, or cultural identity (Fan et al., 2023; Long, 2014; Wu et al., 2025), while comparatively few have investigated how popular songs function as narrative sources through which listeners construct destination images. Musical narratives may reinforce this process by highlighting destination attributes through emotionally engaging stories rather than promotional descriptions.

Despite substantial progress in destination image research, relatively little is known about how listeners identify, prioritize, and interpret destination attributes in popular songs. Existing quantitative studies have demonstrated relationships among music, destination image, and travel intention (Chen et al., 2019; Min et al., 2020; Yin et al., 2020), yet they offer limited insight into why certain attributes become meaningful or how listeners explain their appeal.

2.4. Music-induced tourism and travel intentions

Music has become an increasingly influential part of contemporary tourism experiences, extending well beyond concerts, festivals, and performances. Advances in digital streaming services and global media platforms have enabled songs to circulate across geographic boundaries, exposing listeners to places they might otherwise never encounter. Music has become an important source of destination awareness, capable of stimulating curiosity, emotional engagement, and interest in travel. Early studies on MIT primarily examined how destinations benefit from associations with musicians, festivals, or iconic performances (Connell & Gibson, 2003; Gibson & Connell, 2005; Henke, 2005). More recent research has broadened this perspective, showing that music itself can serve as a destination communication medium, influencing how places are perceived and remembered even without direct promotional efforts (Kim et al., 2023; Wu et al., 2025).

Unlike traditional destination marketing campaigns, popular songs rarely try to persuade audiences to visit a specific place. Instead, they convey destinations indirectly through stories, emotions, and symbols. This distinction matters because listeners typically view songs as artistic expressions rather than promotional messages, making the communication seem less persuasive yet potentially more influential in practice. Destinations embedded in

musical narratives therefore become linked to particular lifestyles, cultural identities, emotional experiences, or personal aspirations. These symbolic meanings may subsequently influence destination preferences by creating emotional resonance before individuals actively search for travel information. Music contributes not only to destination visibility but also to developing emotional motivations that often precede destination choice.

Recent empirical studies support this perspective. Yin et al. (2020) found that destination-related popular songs positively influence destination image and visit intentions. Similarly, Min et al. (2020) demonstrated that destination music enhances tourists' emotional responses and behavioral intentions by strengthening experiential expectations. Research on Korean popular music has further shown that music consumption generates favorable destination perceptions and increases interest in visiting culturally associated locations (Kim et al., 2023; Oh et al., 2015). Beyond popular music, studies of folk music and tourism soundscapes indicate that auditory experiences enrich destination experiences by conveying authenticity, local identity, and cultural atmosphere (Fan et al., 2023; Wu et al., 2025).

Researchers have frequently examined how music festivals, live performances, fan tourism, and artists' places of origin influence destination development (Ahmed et al., 2025; Connell & Gibson, 2003, 2004; Gibson & Connell, 2005; Long, 2014). Although these studies have substantially advanced understanding of music tourism, they explain only part of the relationship between music and travel behavior. Fewer studies have examined how ordinary listeners respond to destination narratives embedded in commercially successful songs consumed outside tourism contexts.

2.5. Research gap and positioning of the present study

Studies grounded in DIT have primarily examined how destinations are represented across marketing communications, visual media, social media, and user-generated content (Baloglu & McCleary, 1999; Beerli & Martín, 2004; Correia et al., 2025; Liu et al., 2024). In contrast, MIT research has predominantly focused on festivals, concerts, celebrity influence, fan tourism, and destination branding through musical events (Connell & Gibson, 2003, 2004; Gibson & Connell, 2005; Kim et al., 2023). Meanwhile, research on NTT shows that stories shape perceptions and attitudes by facilitating cognitive and emotional immersion (Green & Brock, 2000; Van Laer et al., 2014), yet its application in tourism has remained relatively limited.

Another notable gap concerns how music tourism research conceptualizes destinations. Existing studies typically treat destinations as physical locations tied to musical events, performers, or cultural industries. By comparison, less attention has been paid to destinations as narrative constructs shaped by popular songs. Yet many globally recognized songs portray cities, countries, or landscapes by highlighting distinctive cultural identities, emotional atmospheres, historical references, or symbolic meanings. These narratives enable listeners to imagine destinations long before encountering them in person, suggesting that music may serve as a powerful source of destination storytelling independent of formal tourism promotion. Understanding how these narratives are interpreted is especially important in contemporary tourism, where destinations increasingly compete through symbolic meanings and emotional experiences rather than solely through tangible attractions.

Building on these observations, this study proposes an integrated perspective that combines NTT, DIT, and the MIT framework to explain how destination narratives in popular songs shape tourism-related perceptions. Rather than treating music merely as a promotional tool or cultural attraction, the study conceptualizes popular songs as narrative media through which listeners construct imagined destinations, evaluate destination attributes, and develop travel intentions. To capture these processes, the study uses a qualitative interview design in which participants listen to destination-themed songs and then reflect on their perceptions, emotions, and interpretations. This approach enables the study to uncover how meanings are negotiated during listening and how they shape perceptions of destination attractiveness.

Accordingly, this study addresses the following research questions:

RQ1. How do destination narratives embedded in popular songs shape listeners' cognitive and affective perceptions of tourism destinations?

RQ2. Which destination attributes portrayed in songs (e.g., culture, heritage, nightlife, landscapes, local identity, emotions) are perceived as the most attractive by listeners, and why?

RQ3. How do listeners interpret and construct imagined experiences of destinations after listening to songs featuring those places?

RQ4. To what extent do destination narratives in popular songs influence listeners' intentions to visit, revisit, or recommend the destinations?

3. Methodology

Ethical approval was obtained from the Scientific Research Ethics and Development Committee of Georgia State University (Approval No. GSU-2025.19-13**,** dated 19 November 2025). Before participation, all respondents were informed about the purpose of the research, the voluntary nature of participation, confidentiality procedures, and their right to withdraw at any stage without consequence. The researcher obtained written or verbal informed consent from all participants before data collection.

3.1. Research design

This study adopted a qualitative design grounded in an interpretivist paradigm to examine how destination narratives embedded in popular songs shape listeners' destination image, perceived destination attractiveness, imagined travel experiences, and travel intentions. Because the study aimed to understand participants' subjective interpretations and meaning-making processes rather than to test causal relationships, a qualitative approach was considered most appropriate (Creswell & Poth, 2016). Specifically, the study used a stimulus-based, semi-structured interview design in which participants first listened to destination-themed popular songs and then participated in in-depth interviews. Using music as a narrative stimulus enabled participants to articulate their immediate cognitive and emotional reactions, yielding rich insights into how musical narratives contribute to destination image formation and tourism-related perceptions. The study was guided by four research questions focusing on destination image, destination attractiveness, imagined destination experiences, and travel intentions.

3.2. Selection of musical stimuli

Twenty internationally recognized popular songs with explicit destination narratives were selected as research stimuli (Table 1). Song selection was guided by four criteria. First, the song title or lyrics had to explicitly mention the destination. Second, each song had to portray identifiable tourism-related destination attributes, such as culture, heritage, landscapes, nightlife, local identity, or emotional atmosphere. Third, the songs had to have achieved broad international popularity. Finally, the collection was designed to represent diverse geographical locations, tourism themes, destination types, and musical genres. Rather than assigning predetermined songs, participants were presented with the complete list of twenty songs and invited to choose the two they preferred to listen to. Allowing participants to select the songs increased engagement while preserving consistency in the overall research design. Each participant listened to the selected songs in full using headphones to minimize external distractions and standardize the listening experience. The average listening time per song was approximately 3.45 minutes. Using participant-selected musical stimuli enabled respondents to engage more naturally with destination narratives while maintaining a common analytical framework across all interviews.

3.3. Participants and sampling

A maximum variation sampling strategy (Patton, 2014) captured diverse perspectives on destination narratives embedded in popular songs. This approach was appropriate because perceptions of destinations likely vary by individuals' cultural backgrounds, travel experiences, ages, nationalities, and professional backgrounds. By deliberately including participants with diverse demographic and experiential characteristics, the study sought to identify both common patterns and unique interpretations across cultural contexts. Forty participants took part in the study. The study invited individuals who met the criteria and agreed to participate in interviews. Of the participants, 23 were female, and 17 were male. Participants ranged in age from 26 to 72 years, with a mean age of 39 years. Thirty-two participants held at least a university degree. The sample represented 13 countries, including the United States, Denmark, Türkiye, the Netherlands, Sweden, the United Kingdom, France, South Africa, South Korea, India, Egypt, Singapore, and Australia. Participants also represented diverse occupational backgrounds, including academics, engineers, physicians, journalists, hotel managers, chefs, police officers, and professional drivers. All participants had prior international travel experience. On average, participants had visited 19 countries, with a range of 8 to 63. This extensive travel experience enabled participants to evaluate destination narratives by drawing on diverse personal travel experiences rather than hypothetical assumptions.

3.4. Data collection procedure

Data collection took place from 8 January to 22 May 2026 through individual semi-structured interviews conducted in English. The research procedure consisted of three consecutive stages (Figure 1). First, participants received detailed information about the research objectives, confidentiality procedures, and their rights as participants before providing informed consent. Second, participants reviewed a list of twenty destination-themed songs and selected two songs they wanted to hear. Researchers played both songs in full using headphones before the

interview began. Third, immediately after the listening session, participants completed a semi-structured interview focused on the four research questions.

Twenty-one interviews were conducted face-to-face, while nineteen were conducted online via Zoom or WhatsApp, based on participants' preferences and geographic locations. Face-to-face interviews were held at locations convenient for participants, including airports, hotels, universities, and other public settings. Each session, including music listening and the interview, lasted about 33 minutes.

A semi-structured interview guide with eight open-ended questions was developed to explore participants' perceptions of destinations, emotional responses, imagined travel experiences, destination attractiveness, and travel intentions. The researcher used flexible probing questions whenever participants introduced new perspectives or elaborated on particularly meaningful experiences. Although thematic saturation was reached by the 29th interview, data collection continued until 40 participants had been interviewed to further confirm the stability and richness of the findings. With participants' permission, all interviews were audio-recorded and transcribed verbatim to preserve the authenticity of participants' narratives.

3.5. Data analysis

Interview data were analyzed using thematic analysis, following Braun and Clarke's (2006) six-phase framework, and managed in NVivo 14. The analysis began with repeated readings of the interview transcripts to become familiar with the data, and transcripts were compared with the original audio recordings to ensure transcription accuracy. The second phase involved generating initial codes by systematically examining meaningful text segments. Coding was primarily inductive, allowing participants' narratives to guide emerging concepts, while the four research questions provided broad analytical domains for organizing the analysis. Rather than imposing predefined categories, the researchers remained open to new meanings emerging from participants' accounts. Initial codes reflected participants' descriptions of destination imagery, emotional reactions, cultural perceptions, imagined experiences, and travel intentions.

Next, the researchers compared, merged, and organized conceptually related codes into broader analytical categories by examining similarities, differences, and conceptual relationships. The researchers then reviewed and refined the broader categories to develop coherent themes and subthemes. Each candidate theme was evaluated against both the coded extracts and the complete dataset to ensure internal consistency, conceptual distinctiveness, and alignment with the research questions. Finally, each theme and subtheme was clearly defined, named, and interpreted within the theoretical framework of NTT, DIT, and the MIT literature. To enhance analytical reliability, two researchers independently coded the interview transcripts. Intercoder reliability was assessed using Cohen's Kappa coefficient, yielding $\kappa = 0.83$, indicating almost perfect agreement according to Landis and Koch (1977). The coders resolved disagreements through discussion until they reached consensus. An external qualitative research expert also reviewed the final coding framework and thematic structure.

3.6. Trustworthiness

The study established rigor using the trustworthiness criteria proposed by Guba and Lincoln (1994): credibility, dependability, confirmability, and transferability. Throughout the study, the researchers strictly maintained participants' anonymity and confidentiality. The study removed personal identifiers from all transcripts and securely stored all research materials in accordance with institutional ethical guidelines.

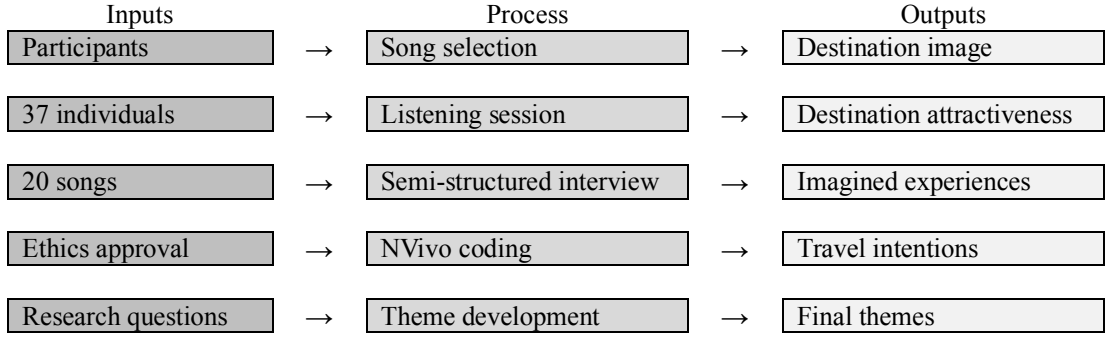


Figure 2. Research procedure

Table 1. Characteristics of popular songs featuring destination narratives

Song	Artist	Destination	Genre	Main destination attributes described	Narrative perspective	Tourism theme
Empire State of Mind	Jay-Z & Alicia Keys	New York City, USA	Hip-Hop	Ambition, iconic skyline, diversity, opportunity, nightlife	Inspirational urban narrative	Urban tourism
New York, New York	Frank Sinatra	New York City, USA	Traditional Pop	Success, dreams, prestige, energy	Aspirational	City branding
London Calling	The Clash	London, UK	Punk Rock	Political unrest, urban life, resilience	Critical/social commentary	Urban identity
Walking in Memphis	Marc Cohn	Memphis, USA	Soft Rock	Music heritage, blues culture, spirituality, local atmosphere	Personal travel experience	Cultural tourism
San Francisco (Be Sure to Wear Flowers in Your Hair)	Scott McKenzie	San Francisco, USA	Folk Pop	Peace movement, hospitality, flower culture, freedom	Invitation to visitors	Festival tourism
Havana	Camila Cabello ft. Young Thug	Havana, Cuba	Latin Pop	Cuban identity, tropical atmosphere, passion, rhythm, nostalgia, romance	Emotional attachment to hometown	Cultural Tourism
Viva Las Vegas	Elvis Presley	Las Vegas, USA	Rock and Roll	Entertainment, casinos, nightlife, excitement	Celebration	Entertainment tourism
I Left My Heart in San Francisco	Tony Bennett	San Francisco, USA	Jazz / Traditional Pop	Scenic beauty, nostalgia, emotional attachment	Homesickness	Emotional place attachment
Barcelona	Freddie Mercury & Montserrat Caballé	Barcelona, Spain	Classical Crossover / Rock	Art, culture, grandeur, Mediterranean identity	Celebration	Cultural branding
Paris	The Chainsmokers	Paris, France	EDM / Pop	Escape, romance, freedom, youthful adventure	Escaping reality through travel imagination	Lifestyle tourism
Galway Girl	Ed Sheeran	Galway, Ireland	Folk Pop	Traditional Irish music, nightlife, romance, local culture	Personal encounter with a local woman	Cultural Tourism
Budapest	George Ezra	Budapest, Hungary	Indie Folk	Symbolic sacrifice, emotional attachment, imagined destination	Metaphorical	Destination symbolism
Africa	Toto	Africa	Soft Rock	Nature, landscapes, mystery, adventure, emotional longing	Reflective	Nature & adventure tourism
America	Simon & Garfunkel	United States	Folk Rock	Transportation, self-discovery, landscapes, national identity	Road-trip narrative	Domestic tourism
Route 66 (Get Your Kicks on Route 66)	Nat King Cole	Historic Route 66 (USA)	Jazz / Rhythm & Blues	Road trip, iconic towns, freedom, exploration, Americana	Travel narrative	Road tourism
Malibu	Miley Cyrus	Malibu, California (USA)	Pop Rock	Ocean, beaches, sunshine, peaceful lifestyle, nature, emotional renewal	Personal reflection	Coastal & Wellness Tourism
Bruxelles je t'aime	Angèle	Brussels, Belgium	French Pop	Homesickness, local identity, urban memories, emotional attachment, belonging	Returning home emotionally	Place Attachment / Urban Identity
Welcome To New York	Taylor Swift	New Yor City, USA	Pop	self-reinvention, freedom, ambition, city energy, nightlife	Inspirational urban narrative	Urban tourism
Seoul City	Jennie	Seoul, South Korea	R&B / K-pop	Modern city life, glamour, nightlife, confidence, urban excitement	Personal celebration of the city	Urban tourism / Lifestyle tourism
Miami	Will Smith	Miami, USA	Hip-Hop / Pop Rap	Beaches, sunshine, nightlife, entertainment, luxury lifestyle, tropical atmosphere	Promotional and celebratory narrative	Entertainment and Coastal tourism

Table 2. Example of the coding process

Participant quotation	Initial code	Category	Final theme
"The song made me imagine walking through the streets of Havana and experiencing the local atmosphere." (P07)	Imagining destination streets; Visualizing local atmosphere	Cognitive destination imagery	Music-shaped destination image
"Listening to the song made the destination feel romantic and emotionally appealing." (P14)	Feeling romance; Emotional attraction	Affective destination responses	Music-shaped destination image
"The lyrics made me curious about Cuban culture and daily life." (P03)	Curiosity about local culture; Seeking authenticity	Perceived cultural attributes	Construction of destination attractiveness
"I could almost picture myself sitting in a café and interacting with local people." (P21)	Imagined interaction; Mental travel experience	Imagined destination experience	Narrative transportation into the destination
"The song created an image that was completely different from what I had imagined before." (P29)	Reconstructed destination perception	Destination image change	Music-shaped destination image
"The music itself made the destination feel lively even before I paid attention to the lyrics." (P34)	Emotional influence of melody; Mood creation	Emotional destination evaluation	Construction of destination attractiveness
"Although I have never visited Paris, The Chainsmokers' Paris made me associate the city with freedom, youth, and spontaneous adventures." (P31)	Freedom; Youthful lifestyle; Symbolic destination	Symbolic destination meanings	Narrative transportation into the destination
"When I listened to Malibu, I immediately imagined relaxing on quiet beaches with beautiful ocean views. It made the destination feel peaceful and refreshing." (P33)	Coastal imagery; Relaxation; Wellness	Wellness and coastal attractiveness	Construction of destination attractiveness
"This song makes New York sound like the ultimate place to achieve your dreams. Even though I know real life is probably much more complicated, the music creates an image of confidence, prestige, and success. It makes me want to experience the city's atmosphere for myself." (P04)	Aspirational destination image; Prestige; Desire to experience the city	Cognitive destination imagery	Music-shaped destination image
" *For me, the song was more about the transportation than the destination itself. It made travelling across the country seem meaningful and reflective rather than simply moving from one place to another. I imagined experiencing different landscapes and cultures along the way."* (P26)	Transportation experience; Self-discovery; Road travel	Imagined travel experience	Narrative transportation into the destination
The music immediately created images of Irish festivals, traditional dancing, and cheerful local communities. It felt like a destination where culture is experienced naturally rather than performed for tourists. That made it seem authentic and attractive." (P35)"	Festivals; Local traditions; Authentic community	Cultural destination attractiveness	Construction of destination attractiveness
"The song gave me the feeling that Brussels is more than just a capital city. It sounded like a place filled with personal memories and emotional connections. Even without visiting it, I could understand why someone would miss living there, and that emotional perspective made me curious about the city." (P37)	Belonging; Emotional memory; Curiosity	Emotional attachment	Narrative transportation into the destination
"Through the song, I imagined myself walking through the crowded streets of New York and becoming part of the city's vibrant lifestyle." (P38)	Imagining crowded streets; Urban lifestyle; Mental visualization	Imagined destination experience	Narrative transportation into the destination
"It feels like the curtain of a new life is opening in my youth. It captures the allure of the American Dream cliché and makes me feel ready to step into endless possibilities and adventures alone with a suitcase.." (P39)	New beginnings; American Dream; Endless opportunities; Adventure; Self-reinvention	Aspirational destination image	Construction of destination attractiveness
"While listening, the city itself stays in the background. What I feel is that I came here to rediscover myself, even to take refuge in the city. I don't want to conquer the city, I just want to walk alone on the sidewalks at night." (P39)	Self-discovery; Emotional refuge; Solitary urban exploration	Emotional attachment to destination	Narrative transportation into the destination
"Miami is not a place where I want to find myself; it's a place where I want to lose myself. I imagine neon lights, endless parties, alcohol, and crowded beaches. It feels like the city offers a temporary escape." (P39)	Escapism; Nightlife; Hedonism; Temporary escape	Hedonic destination image	Construction of destination attractiveness
"Jennie's Seoul City song genuinely made me want to visit Seoul and made me curious about what it would feel like to live there." (P40)	Desire to visit destination; Curiosity about local lifestyle; Imagining living experience	Destination curiosity and aspirational travel motivation	Construction of destination attractiveness
"Listening to Miami made me imagine escaping from my daily routine and experiencing the city's energetic nightlife, beaches, and carefree atmosphere. It made Miami feel like a place where I could temporarily forget my responsibilities and enjoy the moment." (P40)	Escaping daily life; Nightlife attraction; Carefree experience; Temporary freedom	Hedonic destination image	Construction of destination attractiveness

Table 3. Theme development process

Initial codes	Categories	Final themes
Visualizing landmarks; Imagining streets; Forming mental images; Remembering landscapes	Cognitive destination imagery	Music-Shaped Destination Image
Feeling nostalgia; Excitement; Romance; Emotional attachment	Affective destination responses	Music-Shaped Destination Image
Local culture; Heritage; Food; Nightlife; Authenticity	Perceived destination attributes	Construction of Destination Attractiveness
Mental travel; Self-projection; Interaction with locals; Sense of presence	Imagined destination experience	Narrative Transportation into the Destination
Curiosity; Information search; Intention to visit; Recommendation	Travel motivation	Music-Induced Travel Intentions

Table 4. Coding structure based on the research questions

Research question	Representative initial codes	Category	Theme
RQ1 How do songs shape destination perceptions?	Destination imagery; Emotional impressions; Symbolic meanings	Cognitive & affective destination image	Music-shaped destination image
RQ2 Which destination attributes are perceived as attractive?	Culture; Heritage; Nature; Local lifestyle; Nightlife	Destination attributes	Construction of destination attractiveness
RQ3 How are imagined destination experiences constructed?	Mental travel; Presence; Interaction; Story immersion	Imagined destination experience	Narrative transportation into the destination
RQ4 How do songs influence travel intentions?	Visit intention; Information search; Recommendation; Revisit intention	Behavioral intention	Music-induced travel intentions

4. Findings

The thematic analysis yielded four overarching themes aligned with the study's research questions: (1) music-shaped destination image, (2) construction of destination attractiveness, (3) narrative transportation into the destination, and (4) music-induced travel intentions. These themes show how destination narratives embedded in popular songs shaped participants' cognitive perceptions, emotional evaluations, imagined experiences, and behavioral intentions. Although different songs highlighted different destinations and tourism attributes, participants consistently described music as a powerful medium for constructing meaningful destination representations.

4.1. Music-shaped destination image

The first theme shows that popular songs simultaneously shaped participants' cognitive and affective images of destinations. Rather than merely providing factual descriptions, songs enabled listeners to construct vivid mental representations and evoke emotional responses, including admiration, nostalgia, excitement, and curiosity. Participants frequently reported that melodies and lyrics complemented each other, creating coherent, memorable destination images. Participants often imagined urban destinations through the symbolic characteristics the songs conveyed. Rather than focusing on individual attractions, participants tended to describe destinations through broader identities, such as ambition, creativity, hospitality, prestige, or cultural richness. For example, one participant explained how Empire State of Mind transformed New York into a symbol of opportunity:

> *"Listening to Empire State of Mind made me imagine New York as a city full of ambition, diversity, and endless opportunities. It felt like a place where anything is possible."* (P05)

Similarly, songs that emphasize emotional attachment strengthened the affective destination image. Participants often described feeling emotionally connected to places they had never visited. Tony Bennett's *I Left My Heart in San Francisco* evoked particularly strong emotional imagery:

> *"The song made me feel emotionally attached to San Francisco even though I have never been there. It created the impression that the city is unforgettable and leaves a lasting emotional mark on visitors."* (P22)

Music also reshaped long-held perceptions of destinations. Rather than confirming existing stereotypes, some songs prompted participants to reconsider destinations from alternative perspectives. One participant noted that *San Francisco (Be Sure to Wear Flowers in Your Hair)* portrayed the city as peaceful, welcoming, and culturally distinctive rather than simply another American metropolis:

"The atmosphere in San Francisco made the city seem peaceful, welcoming, and different from other American cities." (P19)

Likewise, participants reported that songs highlighting cultural identity prompted them to imagine destinations through artistic and historical associations. Barcelona was often described not merely as a tourist city but as an elegant cultural environment:

"The song Barcelona made the city feel artistic and elegant. I imagined walking through historical streets and visiting famous cultural landmarks." (P24)

The destination image emerged from the interplay of descriptive lyrics and an emotional musical atmosphere. Participants did not separate cognitive evaluations from emotional impressions; instead, both dimensions developed simultaneously during the listening experience, yielding rich, multidimensional representations of destinations.

4.2. Construction of destination attractiveness

The second theme shows that participants evaluated destination attractiveness primarily through the cultural and experiential attributes highlighted in the songs. Rather than focusing on conventional tourism facilities, participants emphasized authenticity, local culture, heritage, entertainment, nature, and lifestyle experiences as the main sources of attractiveness. Authenticity emerged as one of the strongest attraction factors. Participants were particularly interested in destinations portrayed through everyday local life rather than idealized tourism imagery. For instance, Walking in Memphis sparked curiosity about musical heritage and local culture:

"Listening to 'Walking in Memphis' gave me the impression that the city is much more than a tourist destination. I imagined walking through places where blues music originated and interacting with local musicians. That emotional connection sparked genuine interest in visiting Memphis." (P12)

Similarly, *Galway Girl* encouraged participants to experience Irish culture as natural rather than staged for visitors. Local music, pubs, and social interaction were considered especially appealing:

"While listening, I imagined lively pubs, traditional Irish music, and friendly locals. It felt less like a tourist attraction and more like a place where visitors could genuinely experience everyday local culture." (P30)

Entertainment-oriented songs appealed to different audiences. Rather than emphasizing authenticity, they portrayed destinations as exciting spaces associated with leisure and nightlife. One participant described Viva Las Vegas as setting expectations for excitement and entertainment.

"While listening to Viva Las Vegas, I imagined bright lights, entertainment, and an exciting nightlife that would be fun to experience." (P08)

Natural environments were also a key source of destination appeal. Participants frequently cited landscapes, wildlife, and opportunities for exploration when discussing *Africa*. These destinations were perceived as attractive because they promised unique experiences unavailable in everyday life:

"The song Africa evoked vivid images of nature and adventure. It made me think about safaris and landscapes I would like to explore one day." (P09)

Across interviews, attractiveness appeared to stem from emotionally meaningful experiences rather than from objective destination characteristics alone. Participants repeatedly emphasized that songs made destinations attractive by conveying authentic lifestyles, memorable cultural identities, and emotionally engaging atmospheres, rather than merely showcasing tourist attractions.

4.3. Narrative transportation into the destination

The third theme shows how participants became mentally immersed in destinations while listening to the songs. Rather than remaining passive listeners, many described vivid imagined experiences in which they mentally traveled through destinations, interacted with local people, and participated in everyday life. These accounts closely reflect narrative transportation. Participants frequently described visualizing themselves as physically present in destination settings. One respondent explained that Route 66 created a feeling of participating in a classic American road trip:

"Listening to Route 66 felt like joining a classic American road trip. I imagined driving through small towns and savoring the transportation." (P15)

Likewise, destinations often took shape through imagined social interactions. Songs encouraged participants to picture themselves engaging with local residents rather than merely observing tourist attractions. This was especially evident in responses about *Havana:*

> *"The rhythm alone transported me to Cuba before I even noticed the lyrics. I imagined colorful streets, music everywhere, and people enjoying everyday life. The destination felt vibrant, emotional, and full of energy."* (P16)

Interestingly, narrative transportation also occurred even when songs offered relatively little descriptive detail. Rather than reducing engagement, symbolic narratives sometimes prompted listeners to construct their own imagined experiences. As one participant noted about *Budapest:*

> *"Interestingly, the song doesn't describe Budapest in detail, yet it still made me emotionally curious about the city. I started wondering what kind of place could inspire such strong feelings. Sometimes, imagination can be even more powerful than factual descriptions."* (P10)

Several participants also described feeling emotionally immersed without prior personal experience of the destination. One respondent explained that Bruxelles je t'aime fostered a sense of belonging despite never having visited Brussels:

> *"Bruxelles je t'aime made me feel emotionally connected to a city I have never visited. The song conveyed a strong sense of belonging and sparked my curiosity about everyday life there."* (P27)

These findings suggest that narrative transportation extended beyond visual imagination alone. Participants mentally reconstructed destinations by integrating emotional engagement, symbolic interpretation, and imagined everyday experiences. Music therefore served not only as a source of destination information but also as a mechanism through which listeners temporarily experienced destinations.

4.4. Music-induced travel intentions

The final theme shows that destination narratives frequently stimulated participants' intentions to visit, learn more about, or recommend destinations. However, travel intentions rarely emerged immediately from musical exposure alone. Instead, they developed after participants first formed positive destination images, perceived attractive destination attributes, and mentally immersed themselves in imagined destination experiences. Many participants explicitly stated that listening to destination songs increased their curiosity and willingness to travel. One participant who listened to “Havana” commented:

> *"After listening to the song, I definitely wanted to visit Havana."* (P18)

Similarly, participants often described music as encouraging information-seeking before making travel decisions. Songs sparked interest rather than serving as direct promotional tools. One participant, reflecting on *London Calling,* said:

> *"The song doesn't present London as a perfect destination, but that's exactly what I found interesting. It feels authentic because it addresses social realities rather than only beautiful places. That honesty actually increased my curiosity about the city."* (P17)

Symbolic destinations also shaped behavioral intentions. Participants noted that destinations portrayed as emotional or lifestyle symbols inspired travel because they represented desired experiences rather than specific attractions. One respondent described Paris as a metaphor for freedom.

> *"This song doesn't portray Paris as a tourist destination in the traditional sense. Instead, Paris becomes a symbol of freedom and escape from everyday routines. It made me think about traveling not only to see places but also to experience a different lifestyle."* (P28)

Finally, several participants emphasized that music’s emotional familiarity reduced psychological distance and increased the likelihood of future visits. As one respondent noted:

> *"I have never been there, but the song made the destination seem familiar."* (P11)

These findings indicate that music influenced travel intentions through a cumulative interpretive process. Songs first shaped destination images, highlighted attractive destination characteristics, and facilitated narrative transportation, ultimately encouraging behavioral intentions. Rather than serving as direct promotional messages, popular songs inspired travel by creating emotionally meaningful, personally relevant destination narratives.

5. Discussion and conclusion

This study demonstrates that popular songs function as influential narrative media through which listeners construct destination meanings, evaluate destination attractiveness, and develop travel intentions. Rather than serving merely as entertainment, music enables destinations to be experienced symbolically by combining descriptive narratives with emotional engagement. The findings indicate that destination image emerged from the simultaneous interaction of cognitive interpretations and affective responses, suggesting that listeners did not distinguish between what they learned about destinations and how those destinations made them feel. This finding reinforces DIT by illustrating the reciprocal relationship between cognitive and affective image formation and extends previous research that has predominantly emphasized visual, textual, or user-generated communication channels (Baloglu & McCleary, 1999; Beerli & Martín, 2004; Correia et al., 2025; Gartner, 1994; Liu et al., 2024; Wang et al., 2023).

Another important finding concerns the role of authenticity in shaping destination attractiveness. Participants consistently valued destinations portrayed through everyday life, local culture, heritage, and emotional atmosphere more than conventional tourism attractions or promotional imagery. This observation aligns with studies suggesting that authentic cultural representations enhance destination attractiveness and experiential value, yet it also indicates that authenticity can be communicated indirectly through artistic narratives rather than through formal destination marketing (Fan et al., 2023; Ji et al., 2025; Long, 2014; Rise, 2025; Wu et al., 2025). Unlike destination advertisements that intentionally promote places, popular songs appeared to generate credibility because participants interpreted them as genuine cultural expressions, thereby reducing perceptions of persuasive intent.

The findings further demonstrate that narrative transportation is a central mechanism linking musical narratives to tourism perceptions. Participants frequently described mentally traveling to destinations, imagining interactions with local communities, and constructing detailed experiential scenarios, even without prior visits. These results strongly support NTT by showing that narrative immersion is not limited to written or visual storytelling but can also be elicited through music, in which lyrics and melody jointly facilitate psychological presence (Chen et al., 2019; Cherifi et al., 2018; Green & Brock, 2000; Green et al., 2004; Van Laer et al., 2014). Notably, several participants reported vivid imagined experiences even when songs contained relatively limited destination descriptions. This suggests that symbolic narratives may stimulate active meaning construction rather than constrain it, allowing listeners to fill informational gaps through imagination and prior knowledge.

Finally, the findings indicate that travel intentions develop through a sequential interpretive process rather than as an immediate response to musical exposure. Positive destination image, perceived attractiveness, and narrative transportation collectively reduce psychological distance and encourage curiosity, information seeking, and intentions to visit or recommend destinations. This pattern broadly aligns with previous MIT research (Kim et al., 2023; Min et al., 2020; Yin et al., 2020) and provides qualitative evidence for how these behavioral intentions emerge. Overall, the findings suggest that popular songs should be understood not merely as promotional artifacts but as culturally embedded narratives that can transform unfamiliar destinations into psychologically accessible, emotionally meaningful, and behaviorally attractive tourism experiences.

5.1. Theoretical implications

This study makes several theoretical contributions to the tourism literature by advancing understanding of how popular music constructs destination meanings. Although previous studies have established that music can influence destination image and travel behavior, they have predominantly examined music festivals, celebrity effects, K-pop tourism, or destination branding through musical events (Connell & Gibson, 2003, 2004; Gibson & Connell, 2005; Kim et al., 2023). In contrast, this study demonstrates that commercially popular songs can independently serve as narrative communication channels through which listeners construct imagined destinations before seeking any direct tourism-related information. In doing so, it broadens MIT's conceptual boundaries by shifting attention from event-based consumption to everyday music listening as a mechanism for destination image formation.

The findings also contribute to DIT by showing that destination image formation through music is a dynamic interpretive process rather than the passive reception of destination-related information. Existing research has largely conceptualized destination image as an outcome of exposure to marketing communication, visual content, or user-generated media (Beerli & Martín, 2004; Correia et al., 2025; Gartner, 1994; Liu et al., 2024). The present findings suggest that musical narratives simultaneously activate cognitive evaluations, affective responses, and symbolic associations, enabling listeners to construct multidimensional destination representations even when objective destination information is limited. This enriches destination image research by positioning music as a multimodal narrative stimulus that integrates information, emotion, and imagination into a single interpretive experience.

Furthermore, the study extends NTT by showing that transportation in tourism contexts can arise not only from textual or visual narratives but also from auditory storytelling. Participants frequently described psychological presence, imagined interactions with local communities, and emotional attachment to destinations they had never visited, indicating that transportation emerged from the combined influence of lyrics, melody, rhythm, and personal imagination. These findings therefore broaden the explanatory scope of narrative transportation beyond traditional storytelling formats and reinforce its relevance for understanding symbolic destination consumption (Chen et al., 2019; Green & Brock, 2000; Green et al., 2004; Van Laer et al., 2014).

Finally, the study proposes a more integrated explanation of MIT by showing that travel intentions emerge through a sequential process in which narrative transportation strengthens destination image, destination image enhances perceived attractiveness, and these evaluations collectively foster behavioral intentions. This qualitative evidence complements previous quantitative studies by clarifying the interpretive mechanisms underlying established statistical relationships, thereby contributing to a more nuanced theoretical understanding of how cultural narratives influence tourism decision-making (Cherifi et al., 2018; Min et al., 2020; Wang et al., 2023; Yin et al., 2020).

5.2. Practical implications

The findings offer several practical implications for destination management organizations (DMOs), tourism marketers, cultural institutions, and policymakers seeking to strengthen destination competitiveness through emotionally engaging communication strategies. Rather than relying exclusively on conventional promotional campaigns that emphasize destination attributes, stakeholders should recognize popular music as a strategic storytelling medium for creating authentic, memorable destination meanings. The findings indicate that listeners were drawn not only to iconic landmarks but also to narratives portraying everyday life, cultural identity, emotional atmosphere, and local lifestyles. Destination branding strategies should move beyond information-oriented promotion and incorporate musical narratives that convey places' experiential and symbolic dimensions.

For destination marketers, the results suggest prioritizing collaborations with musicians, songwriters, and music producers that emphasize authentic cultural storytelling over overt destination promotion. Songs that naturally integrate local traditions, neighborhoods, cultural heritage, or community life are more likely to spark curiosity and emotional engagement than content perceived as commercial advertising. This approach may strengthen destination credibility because audiences generally interpret music as artistic expression rather than as persuasive marketing. Destination campaigns could therefore incorporate popular songs into digital storytelling initiatives, social media content, destination films, and experiential branding programs to reinforce coherent destination narratives across multiple communication channels (Fan et al., 2023; Harrill et al., 2025; Hasanein et al., 2026; Tan et al., 2025; Wu et al., 2025).

The findings also indicate that cultural authenticity is a particularly influential driver of destination attractiveness. Tourism organizations should therefore promote local music, traditions, languages, festivals, neighborhoods, and everyday community experiences rather than focusing exclusively on globally recognized attractions. This approach may be especially valuable for emerging or lesser-known destinations with distinctive cultural identities but limited international visibility. By embedding these characteristics in musical narratives, destinations may build stronger emotional resonance and reduce the psychological distance that potential visitors perceive.

Finally, the study has implications for cultural policymakers who support creative industries. Policymakers should view investment in musicians, cultural productions, and locally rooted artistic initiatives not only as cultural policy but also as an indirect tourism development strategy. Supporting music that authentically reflects local identity may build long-term destination awareness, spark international curiosity, and complement formal destination marketing without resorting to explicitly promotional content. Rather than treating music and tourism as separate policy domains, decision-makers should encourage closer collaboration among tourism authorities, cultural organizations, artists, and digital media platforms to create integrated destination storytelling ecosystems that enhance both cultural visibility and tourism competitiveness.

5.3. Limitations and future research directions

Despite its contributions, this study has several limitations that offer opportunities for future research. First, the findings are based on a qualitative design with 37 participants who, although diverse in nationality and travel experience, do not permit statistical generalization. Future studies could validate the proposed interpretive process using larger, more heterogeneous samples across diverse cultural contexts. Second, participants were exposed to a limited selection of destination-themed popular songs. Subsequent research could examine whether similar

mechanisms operate across musical genres, languages, cultural traditions, or emerging digital music formats. Third, the study examined immediate perceptions following music exposure rather than the durability of these effects over time. Longitudinal and experimental research could investigate whether music-induced destination images and travel intentions persist, evolve, or diminish after repeated exposure. Finally, future studies could integrate qualitative and quantitative approaches to test the proposed sequential relationships among narrative transportation, destination image, destination attractiveness, and travel intentions, thereby providing a more comprehensive understanding of how musical narratives shape tourism decision-making across different destination settings and visitor segments.

Author contribution

Kate Torgensen: Conceptualization, Formal analysis, Supervision, Visualization, Writing-review & editing. **Simge Demir**: Investigation, Supervision, Visualization, Writing-review & editing.

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Data availability statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

Ethics committee approval

Ethical approval was obtained from the Scientific Research Ethics and Development Committee of Georgia State University (Approval No. GSU-2025.19-13, dated 19 November 2025). It adhered to the Declaration of Helsinki guidelines for research involving human subjects.

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Appendix A. Research questions

RQ1. How do destination narratives embedded in popular songs shape listeners' cognitive and affective perceptions of tourism destinations?

Q1.1. After listening to the song, how would you describe the destination in your own words? Which images or characteristics came to your mind?
Q1.2. How did the song make you feel about the destination emotionally?

RQ2. Which destination attributes portrayed in songs (e.g., culture, heritage, nightlife, landscapes, local identity, emotions) are perceived as the most attractive by listeners, and why?

Q2.1. Which aspects of the destination presented in the song attracted your attention the most?
Q2.2. Why do you think these destination characteristics were particularly attractive or meaningful to you?

RQ3. How do listeners interpret and construct imagined experiences of destinations after listening to songs featuring those places?

Q3.1. While listening to the song, did you imagine yourself being in that destination? If so, what did you imagine doing or experiencing?
Q3.2. To what extent did the song help you imagine everyday life or the atmosphere of the destination?

RQ4. To what extent do destination narratives in popular songs influence listeners' intentions to visit, revisit, or recommend the destinations?

Q4.1. Has listening to the song influenced your willingness to visit, revisit, or recommend this destination? Please explain why.
Q4.2. Overall, how much influence do you think music can have on people's travel decisions?