

# **Studying the Relationship between Loneliness and Shopping Channel Preferences for Online or Offline Shopping: The Case of International Students in UK Higher Education**

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## **Abstract**

Given the rising prevalence of loneliness among international students and its impact on well-being and consumption, this study investigates how distinct forms of loneliness (emotional, social, and cultural) influence international students' preferences for online versus offline shopping channels in UK higher education, mediated by approach-avoidance motivation. A mixed-methods design was employed. Quantitative data were collected through an online questionnaire conducted with 128 international students, measuring loneliness dimensions, approach-avoidance motivations, and shopping behaviors. Data were analyzed using regression analysis and mediation models tested with bootstrapping methods. Qualitative insights were obtained from open-ended survey questions, enriching the statistical findings with contextual details. Findings reveal that loneliness is widespread in this population, with social loneliness most prevalent. Emotional and cultural loneliness were associated with stronger online shopping behaviours, mediated by online approach motivation. In contrast, social loneliness was linked to weaker online shopping behaviours, mediated by lower online avoidance motivation. This study strengthens the understanding of loneliness within compensatory consumption theory and approach-avoidance motivation theory, while also providing practical guidance for businesses and universities.

## **Keywords**

Loneliness, shopping channel preferences, compensatory consumption, approach-avoidance motivation, international students.

## **1. Introduction**

### **1.1. Background**

Loneliness is a silent struggle that affects one in six people worldwide, casting a shadow over lives across all age groups [1]. Among the most vulnerable are young people, particularly teenagers and young adults aged 13 to 29, with 17% to 21% reporting frequent feelings of loneliness. Lonely teenagers are 22% more likely to achieve lower academic results or qualifications, whereas among adults, loneliness not only harms mental health but also increases difficulties in finding jobs. In the UK, the issue is equally pressing. Data from the Office for National Statistics [2] show that in June 2025 nearly one in four adults “often” or “always” felt lonely.

In this context, the UK, as the second most popular study destination after the United States, hosted a significant number of international students in the 2023/24 academic year. Of these, 14% of undergraduates and 51% of postgraduates came from abroad [3]. However, around 20% of them reported feeling lonely most or all of the time [4]. With higher education becoming increasingly globalized, such challenges of social isolation are particularly intense for international students.

## **1.2. Significance of the Study**

Since the UK government appointed a Minister for Loneliness in 2018 [5], the broader social and psychological implications of loneliness have been formally recognized at the national level. Even so, less attention has been given to the individual consumer perspective, where awareness of loneliness can help international students prepare for studying abroad [6]. Such awareness supports them in regulating emotions more effectively, interpreting loneliness-driven shopping impulses more rationally, and reducing feelings of guilt or self-denial [7]. Moreover, recognising the link between loneliness and consumption behaviour helps students develop a stronger sense of responsibility through mindful consumption, enhancing self-control to resist habitual, impulsive, and compulsive buying behaviours [8].

From a business side, loneliness significantly affects consumer motivation, shopping journeys, and brand loyalty [9]. The findings of this study are useful for companies to segment the international student market and present emotional or cultural elements through visual symbols, such as patterns, colours, and usage styles, to give products both symbolic meaning and commercial value [10], while also designing marketing strategies that resonate emotionally with these groups.

Furthermore, universities may leverage these findings to better support international students' emotional well-being. By designing targeted initiatives based on the times or situations when students are most likely to feel lonely, such as social events for new arrivals at the beginning of the academic year, peer support during exam periods, or community gatherings around major holidays, institutions are able to help students cope with loneliness more effectively [11]. These efforts also contribute to overall well-being in culturally diverse academic environments and foster a stronger sense of community.

Beyond these practical implications, the study also offers theoretical contributions. It deepens the understanding of consumer behaviour by integrating compensatory consumption theory and approach–avoidance motivation theory, offering a more refined framework for interpreting how different types of loneliness shape consumption patterns.

## **1.3. Brief of Literature Review**

Existing research has shown that loneliness significantly affects individuals' emotional and behavioural regulation. Emotional loneliness often drives people to form symbolic attachments with brands or objects to fulfill unmet relational needs [12]. Socially lonely individuals may adopt passive coping strategies, such as browsing without interaction or avoiding crowded places [13]. Those experiencing cultural loneliness tend to seek out familiar products, cultural cues, or native-language services to regain a sense of familiarity and security [14]. These behaviours can be explained by compensatory consumption, where purchases become emotionally and symbolically charged to counter different forms of loneliness.

On the other hand, the Approach–Avoidance Motivation Theory highlights that lonely individuals face a dual motivational tension. While they crave social connection [15], they also may fear judgment, rejection, or discomfort [16]. This dynamic helps explain the ambivalent behaviours frequently observed among lonely consumers: some seek social engagement through shopping, while others retreat into solitary consumption.

This combined framework sheds light on why shopping, whether online or offline, becomes more than a transactional act for lonely individuals. Offline shopping offers social interactions, sensory stimulation, and identity affirmation [17], while online shopping provides a low-pressure space for emotional escape and symbolic connection [18].

## **1.4. Research Gap**

In recent years, the psychological challenges faced by international students have attracted growing scholarly attention, with loneliness repeatedly identified as a particularly salient issue.

Comparative evidence indicates that international students are more likely to experience loneliness than domestic peers [19]. Broader contextual stressors, such as the COVID-19 pandemic, have aggravated feelings of strain [20].

Despite an increasing amount of research, much of the literature continues to treat loneliness as a single, undifferentiated construct. Such simplification is problematic, as it obscures the fact that loneliness is multidimensional and that different types of loneliness are associated with distinct motivations and coping mechanisms [21], thereby further limiting our understanding of consumer behaviour [22].

Additionally, the motivational mechanisms linking loneliness and consumer behaviour remain underexplored. Gaining a clearer understanding of how these motivational forces operate across different types of loneliness is essential for explaining why some individuals gravitate toward social retail spaces, whereas others retreat into solitary online consumption. Such insights not only enrich theoretical models of consumer behaviour but also offer practical guidance for developing emotionally attuned marketing strategies and student support services.

Another gap in the literature lies in methodological approaches. While loneliness has been repeatedly identified as a central emotional theme in interviews [23], the field is still largely based on qualitative designs. Although such approaches provide rich, context-specific insights, they lack generalisability and offer limited scope for testing theoretical propositions [24]. This methodological imbalance constrains the development of cumulative theory and obscures broader patterns across student populations.

To address these gaps, this study analyzes how emotional, social, and cultural loneliness influence international students' preferences for online versus offline shopping in UK higher education. By integrating compensatory consumption theory and approach-avoidance motivation theory, and using mixed methods to test these relationships, the study offers a robust framework for understanding consumer preferences under different emotional conditions.

## **1.5. Dissertation Structure**

This paper is structured as follows: the Introduction defines the research context, significance, literature background, research gaps, and objectives. The Literature Review examines existing scholarship on loneliness, international students, compensatory consumption, and approach-avoidance motivation. The Research Methodology chapter explains the research design, data collection methods, and analytical techniques, as well as limitations and ethical considerations. The Results chapter presents the quantitative and qualitative findings. The Findings chapter discusses key insights, relating them to hypotheses and theory. Finally, Recommendations and Conclusions outlines practical recommendations and summarizes the conclusions of the research.

## **2. Literature Review**

### **2.1. UK Higher Education and International Students**

Similar to other high-income countries, the UK features a robust higher education system, producing 6.3% of the world's academic publications and 13.4% of its most highly cited research output despite having only 4% of global researchers and less than 1% of the world's population [25]. In addition, four of the world's top ten universities in life sciences and medicine are based in the UK [26], reinforcing its academic prominence.

Nevertheless, as the marketisation of higher education intensifies, the proportion of government funding has steadily declined, forcing universities to increasingly rely on tuition fees for operational sustainability. Given that international students typically pay substantially

higher tuition fees than domestic students, they have emerged as a vital financial resource for many universities [27]. According to recent data from the Office for Students [2], 43% of higher education institutions in England are expected to run a deficit in the 2024/2025 academic year, with lower-than-expected international student enrolment cited as a major contributing factor. Beyond their economic role, international students enrich the academic environment in diverse ways [28]. They promote intercultural communication on campus [29], help foster diversity and inclusion [30], and contribute to enhancing the global reputation of institutions by increasing the proportion of international staff and students [31].

For international students themselves, the experience of studying abroad provides richer and more context-based language experiences, allowing students to engage regularly with native speakers and immerse themselves in local cultures [32]. This, in turn, shapes their language proficiency, identity, global outlook, self-development, and even future career decisions [33]. Many students view overseas study as a pathway to academic and personal excellence [34]. However, these opportunities are accompanied by substantial challenges, including language and cultural differences, structural barriers, difficulties in forming local relationships, and identity-related struggles [35]; additionally, high tuition fees and living costs heighten their fear of failure, increasing academic and financial stress. It is a resilience-building experience for international students.

## **2.2. Loneliness**

Loneliness is a subjective sense of social disconnection, typically arising from a gap between the relationships one desires and those actually experienced [36]. It is often accompanied by unpleasant emotional states and is regarded as a form of perceived social isolation [37]. From a human needs perspective, loneliness occurs when the fundamental need for belonging is not adequately met [38].

Loneliness is widely reported across diverse national and cultural contexts [39] and transcends demographic boundaries such as age, gender, ethnicity, and socioeconomic status [40], emerging at various life stages [41]. Qualitative evidence also indicates that loneliness is a culturally meaningful construct, observable across societies with differing social integration and relational norms [42]. There is strong evidence showing that loneliness is multi-dimensional, and different types of loneliness are related but distinct [43]. Weiss [44] was the first to distinguish between emotional loneliness and social loneliness.

Emotional loneliness refers to the lack of emotionally supportive attachments, such as a partner, family member, or close friend, that individuals can rely on. According to the multiple regression results reported by Dahlberg and McKee [43], it is a person's psychological factors, like self-esteem and health status, that contribute most significantly to emotional isolation. To compensate for these deficits, individuals may form symbolic or substitute bonds with brands, pets, or virtual characters [12], which is consistent with Heinrich and Gullone's [38] argument that people with emotional loneliness often adopt active coping strategies to establish new connections.

For people who experience social loneliness, this condition involves the absence of a satisfying social network that offers a sense of belonging and companionship. Building on the observed reductions in mobile phone use, Bluetooth connections, and physical activity among socially lonely students [13], these behavioural patterns reflect a passive or withdrawn coping style [43]. Social loneliness is the type most frequently referred to in the literature when the general term "loneliness" is used, as prevailing definitions emphasise perceived deficiencies in the quantity or quality of social connections [45].

However, within international students' lived contexts, emotional and social loneliness alone may not fully explain the persistent sense of isolation some individuals experience, even when they appear to have adequate support. As a complementary perspective, Sawir et al. [19]

introduced the concept of cultural loneliness in their study of international students in Australia. This form of loneliness comes from language barriers, unfamiliar social norms, differing communication styles, and a perceived lack of cultural resonance with the host society. The lack of recognition for their cultural background [14], together with the difficulties of cultural adaptation [24], left many students struggling to express themselves authentically—many reported feeling like outsiders in daily life. Especially those from collectivist cultural backgrounds, such as East Asian countries, often struggle to adapt to the UK's student-centered and autonomy-focused educational model [46].

### **2.3. Loneliness Among International Students**

International students at different stages of their academic journeys experience varying forms of psychological stress and loneliness. For undergraduate students, studying abroad is often their first step into adulthood. Relocating to a foreign country during this formative stage can impose significant psychological and academic pressures [47]. Taught postgraduate students are typically under pressure due to the intensity and tight scheduling of their coursework [48]. In addition, research-based doctoral students often face loneliness stemming from the high degree of independence in their studies, the lack of day-to-day social interaction, and challenges in supervisory relationships [49]. As a result, many international students have been described as “lonely explorers” [50], reporting profound experiences of isolation and psychological strain. International students in the UK commonly encounter three distinct yet interrelated types of loneliness: emotional loneliness, social loneliness, and cultural loneliness. Studies suggest that emotional and social loneliness are most intense during the early stages of arrival, particularly when students have not yet established local support networks, often manifesting as a lack of emotional support and companionship [24]. While social loneliness may gradually decrease as social networks expand over time, cultural loneliness tends to be situational and recurrent, often triggered during classroom participation, social interactions, or everyday communication when cultural dissonance arises [51]. Cultural barriers not only obstruct social integration but also reduce opportunities for meaningful emotional bonds among international students.

Stead et al.[49] highlight that social loneliness, though common among international students, can be eased through structured social opportunities. In contrast, emotional loneliness is often more complex and hidden: even active participation in social activities may not meet deeper emotional needs. This aligns with findings that emotional loneliness is more prevalent than social loneliness among international students [52] and that, during the COVID-19 pandemic, frequent social media use was linked more strongly to emotional than social loneliness [53]. Taken together, these insights suggest that emotional loneliness constitutes the dominant form of loneliness among international students in UK higher education, leading to the following hypothesis:

H1: Emotional loneliness is the most prevalent among international students in UK higher education.

### **2.4. Loneliness and Consumer Behaviour**

Early research often viewed loneliness as a one-dimensional emotion, examining its direct effects on consumer choices. For instance, lonely individuals were found to prefer second-hand items [54], anthropomorphised products[55], angular designs [56], and bright lighting [57]. Loneliness has also been associated with increased materialism[58], conspicuous consumption [59], and green purchasing [60]. Moreover, compared with individuals reporting lower loneliness, highly lonely individuals are more likely to experience nostalgic feelings and are often less motivated to cope with self-threats [61].

In contrast, such a one-dimensional view has increasingly been challenged by studies adopting a multidimensional perspective, showing that different forms of loneliness influence consumer

behaviour through distinct mechanisms. Li and Wang [62] found that both temporary and chronic loneliness increase variety-seeking, but for different reasons: the former due to a sense of lost control, and the latter driven by a desire for uniqueness and stimulation. Similarly, Li, Zhang, and Liu [63] observed that individuals with high trait loneliness tend to view travel destinations as emotional safe havens, increasing their intent to revisit, while those experiencing state loneliness revisit familiar places to regulate short-term emotions. Emotional loneliness, compared to social loneliness, is more likely to increase preference for unhealthy food [64] and foster stronger emotional bonds with brands, enhancing brand attachment and loyalty [12].

However, much of this research remains fragmented, and cross-comparisons between different types of loneliness are limited, leaving unclear how these dimensions jointly shape consumer decision-making.

## **2.5. Compensatory Consumption**

The impact of loneliness on consumer behaviour can be effectively understood through the lens of compensatory consumption theory. This theory treats compensatory consumption as a way people attempt to address a gap between who they are and who they want to be. To reduce this gap or feel better about themselves, they may employ distinct coping strategies, such as direct resolution, symbolic self-completion, dissociation, escape, and fluid compensation [65]. Lisjak et al. [66] also suggest that these strategies can be grouped by domain: within-domain, addressing the discrepancy within the same area of self-threat or cross-domain, compensating in a different area. However, research shows that within-domain strategies may sometimes backfire by reminding people of their weaknesses, thereby increasing self-doubt and worsening negative emotions [67].

A well-known example of compensatory consumption is retail therapy [68]. During periods of loneliness, consumers often use shopping to obtain sensory stimulation and emotional diversion from distressing thoughts and feelings [69]. They may repeatedly purchase probabilistic or surprise-based items in search of excitement [70]. However, this coping mechanism may come at a cost. Excessive reliance on shopping as a form of emotional compensation has been associated with a higher risk of addictive buying behaviours [71], particularly among chronically lonely individuals [72], and in extreme cases may even manifest as hoarding disorder [73].

## **2.6. Loneliness and Offline Shopping**

For individuals experiencing loneliness, offline shopping is not only a means of material acquisition but also a source of emotional comfort and social belonging. Firstly, it provides face-to-face interactions and sensory experiences, as consumers communicate directly with sales staff [74], and both social and emotional loneliness motivate them to seek such interactions [75]. Experiential consumption, such as travel or movies, likewise enhances emotional value, fosters social ties, and reduces loneliness [76].

Secondly, physical retail spaces like shopping malls act as “third places,” a concept by Oldenburg (1999) describing venues outside home and work, that foster social interaction and community cohesion, thereby helping to reduce loneliness and improve well-being [77]. Evidence from Kim, Kim and Kang [78] indicates that adolescents experiencing emotional isolation tend to enjoy being surrounded by crowds and engaging in relaxed interpersonal interactions, such as queuing or ordering food. In contrast, those who experience social loneliness are more likely to be attracted by the expressive traits of shopping centres, such as status, atmosphere or aesthetic appeal. It is worth noting that Ludwig et al. [79] found that merely maintaining close contact with others in public places can help reduce feelings of loneliness.

Finally, in the context of immigration and cultural adaptation, offline shopping can also offer comfort and support a sense of identity. Far from their hometown culture, many immigrants feel culturally lonely. In this case, going to ethnic supermarkets, buying familiar food and meeting people from the same background can help them feel connected and reduce feelings of loneliness. These activities provide a sense of continuity and belonging in an unfamiliar environment [80]

## **2.7. Loneliness and Online Shopping**

The online environment offers various mechanisms to alleviate loneliness. Research suggests that the relationship between loneliness and social media use is complex, functioning as a double-edged sword. Social platforms can help lonely individuals practise social skills, gain interactional experience, build social capital, and find support [81]. Yet heavy use may worsen loneliness, with greater duration linked to higher perceived and especially emotional loneliness [82]. Behaviours like online impression management and negative comparisons also intensify these feelings [83]. Intervention studies also reveal mixed outcomes. While reducing usage to under 10 minutes per day can alleviate loneliness, complete withdrawal may harm well-being [84].

Beyond social media, lonely individuals turn to broader digital environments to meet unmet needs. They anthropomorphise smartphones, attributing emotional traits that may lead to dependence [85], prefer dense product patterns for a symbolic sense of fullness to ease emptiness [86], and immerse themselves in online gaming communities or online fiction for belonging and psychological escape [87]. These behaviors collectively reflect a strong desire for connection, driving compensatory and hedonic browsing to address emotional and social needs [18].

This compensatory tendency is especially visible in online shopping. Consumers in negative emotional states regulate feelings through shopping [88], and lonely individuals favour social e-commerce platforms with rich social cues [37]. Compared with traditional e-commerce, social media advertisements with likes and comments enhance reliance on social feedback and foster trust [89], while anthropomorphic avatars improve attitudes, loyalty, and satisfaction [90]. In live streaming, host interaction, social atmosphere, and promotions increase purchase intent [91]. Moreover, recent studies on TikTok have shown that loneliness is often regarded as an introjected motive that drives users to engage in emotionally compensatory impulsive buying [92].

## **2.8. Approach–Avoidance Motivation Theory**

Loneliness not only affects why people shop but also how they choose to shop [93]. Although consumers may use both online and offline shopping to ease loneliness, little is known about how motivations trigger different contexts. To explain this process, this study applies Approach–Avoidance Motivation Theory, which highlights conflicts when contexts present both appealing and threatening features [94]. The theory posits that behaviour is governed by two systems: approach motivation, which drives reward-seeking, and avoidance motivation, which prompts withdrawal due to anxiety or fear of rejection [95]. These systems operate independently and are supported by strong empirical evidence [96]. A key neural marker is frontal cortical asymmetry, with left frontal alpha activity linked to approach and right to avoidance [97], while resting parasympathetic activity also reflects motivational regulation.

Most studies show that loneliness is primarily linked to avoidance motivation, as lonely individuals often display interpretation bias, sensitivity to rejection, and social withdrawal [98]. Neurocognitive evidence also supports this association, with greater right frontal EEG activity and behavioural inhibition correlating with loneliness [99]. However, some studies suggest that loneliness can also activate approach motivation in certain contexts, such as when individuals

with higher parasympathetic activity seek social support [15] or when situational loneliness signals the need to reconnect [100]. Understanding this duality is essential for explaining consumer behaviour, as loneliness triggers both approach and avoidance patterns in offline and online shopping.

In offline environments, approach motivation transforms shopping into an emotional release and social participation [73], with lonely individuals often preferring it for interpersonal contact, sensory experiences, or “third spaces” to ease loneliness [101]. Conversely, avoidance motivation drives them to offline shopping to escape digital discomforts, favoring predictable brick-and-mortar settings over neglect, technological complexity, or algorithmic control [102]. Within digital marketplaces, approach-motivated consumers seek social connections via live-streams, community shopping, social commenting, and anthropomorphised AI, gaining emotional compensation [87], while avoidance-motivated ones use it to avoid offline social anxiety, judgment, or stress, valuing its private, asynchronous control [103].

In this study, approach and avoidance motivations are further divided into four types based on the shopping context. Online approach motivation refers to the psychological tendency to shop online for positive outcomes, such as pleasure, anticipation, or emotional reward. Online avoidance motivation means preferring online shopping to avoid negative experiences, such as social pressure or anxiety during interactions. Offline approach motivation refers to actively visiting physical stores to enjoy real interaction, social connection, or comfort. Offline avoidance motivation refers to choosing offline shopping to avoid the discomforts of online experiences, such as neglect, technical problems, or loss of control. This four-dimensional framework provides a more nuanced basis for understanding consumer preferences under different emotional conditions.

**Table 1.** Definitions of the Four Approach–Avoidance Motivations

| Motivation Type              | Definition                                                                                                                                                                    |
|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Online Approach Motivation   | The psychological tendency to shop online in pursuit of positive outcomes, such as pleasure, anticipation, or emotional reward.                                               |
| Online Avoidance Motivation  | The tendency to prefer online shopping in order to avoid negative experiences, such as social pressure or anxiety during interactions.                                        |
| Offline Approach Motivation  | Actively visiting physical stores to seek real interaction, social connection, or emotional comfort.                                                                          |
| Offline Avoidance Motivation | The preference for offline shopping as a way to avoid the discomforts of online experiences, such as feelings of neglect, technical problems, or a perceived loss of control. |

## 2.9. Approach–Avoidance Motivation as a Theoretical Mediator

Consumers’ psychological motivations are key variables in explaining decision-making behaviours, playing a vital role in analysing and predicting choices [104]. Different types of loneliness are associated with distinct motivational tendencies.

Heinrich and Gullone [38] argue that emotionally lonely individuals often adopt proactive strategies to establish new connections. Saine and Zhao [64] further show that emotional loneliness predicts stronger preferences for comfort-oriented food, reflecting compensatory approach behaviour. Moreover, emotional loneliness is positively associated with nostalgia [12], which in turn promotes approach motivation [105]. Taken together, these findings indicate that emotional loneliness is closely tied to approach coping strategies.

For international students, emotional connections typically depend on long-term bonds with family or close friends. Yet such ties are constrained after moving abroad: families remain geographically distant, communication is largely mediated through phone or video calls, and meaningful friendships require time, cultural understanding, and shared experiences to



develop. In this context, students experiencing persistent emotional loneliness are especially likely to turn to online environments for emotional comfort, symbolic affiliation, and a sense of connection. However, little is known about how these motivational tendencies shape consumer behaviour in the international student context. Accordingly, the following hypothesis is proposed:

H2: Students experiencing emotional loneliness are more likely to prefer online shopping, and this relationship is mediated by online approach motivation.

With regard to social loneliness, some evidence suggests that younger people may display stronger social approach motivation, whereas older adults are more likely to show avoidance [106]. Nevertheless, most studies associate social loneliness with avoidance tendencies, showing that socially lonely individuals often avoid close, face-to-face contact in favour of more distant or indirect interactions [107], adopt withdrawn and passive coping styles [21], and exhibit reduced engagement in both digital and physical activities [13].

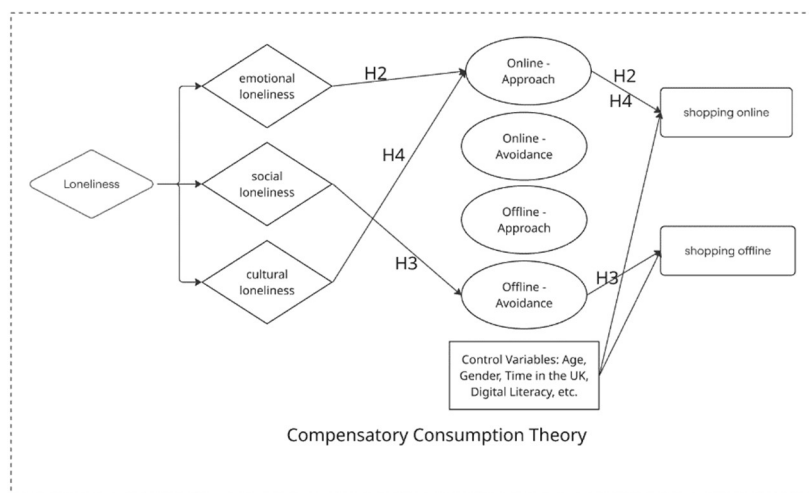
For international students, such avoidance tendencies are often reflected in actively or passively participating in relatively “low-risk” offline activities, such as classroom discussions, orientation events, or student clubs, which provide only limited opportunities for social contact without requiring deeper involvement. This pattern extends to consumption contexts, where offline shopping may serve as a similarly low-risk avenue for social engagement.

H3: Students experiencing social loneliness are more likely to prefer offline shopping, and this relationship is mediated by offline avoidance motivation.

Cultural loneliness may lead international students to withdraw from offline interactions to avoid cultural discomfort [19][51]. Yet it can also activate approach motivation, prompting them to seek cultural resonance and belonging, by preferring home-country products on e-commerce platforms [108], or trusting reviews in their native language [109]. When their social identity is threatened, they show a stronger tendency to connect with culturally similar groups, underscoring the role of social ties in adaptation [110].

However, for many international students, such communities are scarce or geographically dispersed, limiting offline opportunities for cultural belonging. In these circumstances, online platforms become essential compensatory spaces. Based on this, it is hypothesised that:

H4: Students experiencing cultural loneliness are more likely to prefer online shopping, and this relationship is mediated by online approach motivation



**Figure 1.** Hypothesized Research Model

### **3. Research Methodology**

#### **3.1. Introduction**

This chapter outlines the methodological framework used to achieve the research aim and objectives. It begins by restating the research aim and objectives, introduces the pragmatist philosophy underpinning the study, and justifies the adoption of a mixed-methods design. It then details data sources, sampling, recruitment strategies, survey instruments, and the measurement of variables, followed by the data analysis methods used. Finally, it discusses limitations and ethical considerations, ensuring rigour and alignment with the research objectives.

#### **3.2. Research Aim and Objectives**

##### **Research Aim**

Drawing on compensatory consumption theory and approach–avoidance motivation theory, the study aims to investigate how different types of loneliness, emotional, social, and cultural, shape international students' preferences for online and offline shopping channels.

##### **Research Objectives**

To achieve this aim, the study sets out the following objectives:

- 1) Assess the main type of loneliness experienced by international students in the UK;
- 2) Investigate the relationship between loneliness type and shopping preferences (online vs. offline);
- 3) Study whether related theoretical models, such as compensatory consumption and approach-avoidance motivation (moderator), explain these behavioural patterns;
- 4) Gain deeper insight into emotional and contextual factors through qualitative questions, enhancing understanding of how international students interpret and respond to their experiences.
- 5) Provide practical insights for retailers and student support services in designing emotionally responsive consumer experiences.

#### **3.3. Research Design**

This study follows the research philosophy of pragmatism, which focuses on solving real problems and finding useful outcomes, rather than sticking to one strict way of thinking about knowledge [111]. Instead of choosing between objectivism and subjectivism, pragmatism allows for flexible methods and values knowledge that can be used in real-life situations [112]. Because this research aims to answer practical questions that matter in both theory and practice, pragmatism is a suitable approach.

To effectively address the stated research aims and hypotheses, this study adopts a mixed-methods research design that integrates both quantitative and qualitative approaches, which not only enhances the study's explanatory power but also improves its validity through methodological triangulation, ultimately providing a more nuanced and practically relevant understanding of the phenomenon [113].

In this study, the quantitative component was conducted through an online questionnaire consisting of four sections: dependent variables, independent variables, mediating variables, and control variables. This survey played a central role in the research design by enabling the objective and systematic measurement of core variables and behavioural outcomes [114]. Meanwhile, the qualitative component, consisting of three open-ended questions, provides deeper insight into emotional and contextual factors often missed by structured surveys, helping to understand how individuals interpret and respond to their experiences [115].

### **3.4. Data Source and Collection**

This study uses primary data, collected directly from international students currently residing in the UK. Data gathering is conducted via an anonymous online questionnaire using Google Forms. Online surveys save time and cost, and often yield higher response rates [116].

#### **3.4.1. Sample and Recruitment**

A total of 154 responses were collected, of which 128 were valid, exceeding the minimum sample size required for medium mediation effects [117]. Half were recruited through personal and academic networks via social media (WeChat, WhatsApp, international student groups), using self-selection and snowball sampling. The other half were recruited via the Prolific, an online research platform, because it was difficult to reach a sufficient number and diversity of international student responses through personal and academic networks alone. Prolific ensures participants are aware of recruitment details, compensation, and their rights, while offering more transparent participant pools through multi-dimensional pre-screening [118]. In this study, participants were pre-screened based on three criteria: currently residing in the UK, studying in higher education, and having international student status.

#### **3.4.2. Variable Definitions and Survey Instrument**

Independent Variables:

Three types of loneliness were assessed: emotional, social, and cultural. Emotional and social loneliness were measured using six items from the De Jong Gierveld Loneliness Scale [119], a reliable instrument validated in UK international student contexts [120]. Cultural loneliness is assessed using three items adapted from Sawir et al., who were among the first scholars to introduce the concept of cultural loneliness among international students and identified its key contributing factors. The item “I feel lonely when I can’t express myself freely in English” reflects the challenge of linguistic adaptation. The statement “I wish there were more people from my cultural background around me” captures the need for cultural support and a sense of belonging. Lastly, “I often feel culturally misunderstood by local students” addresses the issue of intercultural understanding. A 5-point Likert scale was used, where scores of 1–2 indicate not lonely, scores greater than 2 and up to 3 indicate mildly lonely, and scores greater than 3 indicate severely lonely.

Dependent Variable:

Participants were asked how frequently they engaged in online and offline shopping during the past week. In addition, two sets of items, adapted from Zielke and Komor [121], were used to assess participants’ motivations for choosing a particular shopping channel.

Mediating Variable:

Approach–avoidance motivation is measured using 12 items adapted from Carver and White [122], designed to capture consumers’ motivational responses to loneliness in the context of shopping. The scale is divided into four subdimensions, each consisting of three items: online approach motivation is the drive to shop online to gain positive outcomes; online avoidance motivation is the preference for online shopping to avoid negative experiences; offline approach motivation is the desire to visit physical stores for benefits; offline avoidance motivation is the preference for offline shopping to avoid online frustrations.

Control Variables:

Previous studies have shown that demographic, contextual, and digital factors related to influence loneliness and shopping channel choice. Demographics cover gender, age, and study level [123], plus origin, first-time in the UK, duration, and self-rated English skills [124]. Contextual factors include living situation [125], proximity to markets, delivery app use, employment, and relationship status [126]. Digital literacy is measured with an adapted item from Liu et al. [127].

Open-ended questions:

To complement the structured survey items, three open-ended questions were included to capture participants' lonely experiences and provide deeper contextual insights. "Could you describe the latest situation where you felt lonely?" encourages participants to reflect on recent, real-life experiences of loneliness. "Do you think shopping helps reduce your feeling of loneliness? How?" aims to explore participants' subjective evaluation of shopping as a coping mechanism, and helps assess the validity of compensatory consumption theory. "How do you decide between shopping online and offline when you are feeling lonely?" seeks to uncover decision-making factors that may be overlooked in structured survey items.

| Research Objective                                                                                         | Variable Type         | Variables                                                              | Reference/Source                                                                                                     |
|------------------------------------------------------------------------------------------------------------|-----------------------|------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|
| 1. Assess the main type of loneliness experienced by international students in the UK                      | Independent Variables | Emotional Loneliness; Social Loneliness; Cultural Loneliness           | De Jong Gierveld and Van Tilburg (2006); Sawir et al. (2008)                                                         |
| 2. Investigate the relationship between loneliness type and shopping preferences (online vs. offline)      | Independent Variables | Emotional Loneliness; Social Loneliness; Cultural Loneliness           | De Jong Gierveld and Van Tilburg (2006); Sawir et al. (2008)                                                         |
|                                                                                                            | Dependent Variables   | Shopping Online; Shopping Offline                                      | Zielke and Komor (2025)                                                                                              |
| 3. Examine whether compensatory consumption and approach-avoidance motivation explain behavioural patterns | Mediating Variables   | Online Approach; Online Avoidance; Offline Approach; Offline Avoidance | Carver and White (1994)                                                                                              |
|                                                                                                            | Control Variables     | Demographics, Contextual and Digital Factors                           | Barreto et al., (2021); Su, Lin, and McElwain, (2023); Çil et al.,(2024); Botha and Bower, (2024); Liu et al.(2018). |
| 4. Gain deeper insight into emotional and contextual factors                                               | Open-ended questions  | Loneliness Experiences; Coping Shopping; Shopping Channel Decisions    | Sawir et al. (2008)                                                                                                  |
| 5. Provide practical insights for retailers and support services                                           | All Variables         |                                                                        |                                                                                                                      |
|                                                                                                            | Open-ended questions  |                                                                        |                                                                                                                      |

**Figure 2.** Overview of Data Collection Instrument: Objectives, Variables, and References (see Appendix B for full questionnaire)

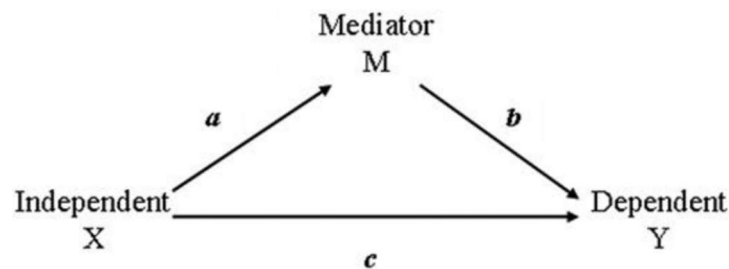
### 3.5. Data Analysis Methods

Data were analysed using JASP (Version 0.19.1) for regression [128], and SPSS Statistics (Version 29.0.2.0), which can efficiently estimate all paths (direct, and indirect effects) simultaneously through bootstrapping [129].

First, descriptive statistics (means and standard deviations) were used to summarise the main characteristics of the sample. The internal consistency of the scales used in this study was tested by calculating Cronbach's alpha. Exploratory factor analysis (EFA) was conducted on two sets of adapted items: the cultural loneliness scale and the shopping motivation scale. Given the limited sample size ( $n = 128$ ), splitting the dataset into separate subsamples for EFA and confirmatory factor analysis (CFA) was deemed impractical, as this could reduce statistical power and increase the likelihood of Type II errors [130]. Therefore, both EFA and CFA were conducted using the full dataset. Promax rotation was used in the EFA, with the factor structure assessed through eigenvalues, variance explained, the Kaiser-Meyer-Olkin (KMO) measure, Bartlett's Test of Sphericity, and Average Variance Extracted (AVE). Subsequently, CFA was conducted, with model fit assessed using standard indices such as mean factor loadings, mean  $R^2$  values, and other commonly reported fit statistics [131]. Pearson correlations were then performed to explore the relationships among loneliness, motivations, and behaviours.

Finally, the mediation effect of shopping motivation between types of loneliness and shopping behaviour was tested using the multi-step regression method proposed by Baron and Kenny [132]. Specifically, the analysis first confirmed whether loneliness (independent variable) significantly predicted shopping behaviour (dependent variable) (path c). Second, it examined whether loneliness significantly predicted shopping motivation (mediator) (path a). Third, it assessed the effect of shopping motivation on shopping behaviour (path b). Finally, it tested the

direct effect of loneliness on shopping behaviour while controlling for shopping motivation (path  $c'$ ). If the effect of loneliness on shopping behaviour became non-significant after including the mediator, it indicated full mediation; if the effect was reduced but still significant, it indicated partial mediation. To further test the mediation effect, Hayes' PROCESS macro (Model 4) in SPSS was employed, which addresses some limitations of the Sobel test [133]. The model was tested with 5,000 bootstrap samples to ensure robustness, and a 95% bias-corrected confidence interval was used to adjust for bias in the bootstrap estimates.



**Figure 3.** Mediation model

X represents the independent variable, M the mediator, and Y the dependent variable. Path  $a$  denotes the effect of X on M, path  $b$  denotes the effect of M on Y, and path  $c$  denotes the direct effect of X on Y. Adapted from Baron and Kenny (1986).

### 3.6. Limitations and Potential Challenges

Despite the strengths of the current research design, several limitations should be acknowledged. First, all variables in this study were measured using self-report questionnaires, which introduces the risk of common method bias [134]. Additionally, given the sensitivity of topics such as loneliness, participants' responses may have been influenced by social desirability bias [135]. Although anonymity was ensured throughout the survey to mitigate this issue, the potential impact of subjective reporting cannot be entirely ruled out. Second, while both EFA and CFA were conducted, EFA was limited to the newly adapted items, and CFA was performed on the same dataset without cross-validation. This raises concerns about potential overfitting and inflated model fit indices. Ideally, future research should apply split-sample validation or use an independent dataset to confirm the factor structure, thereby improving the robustness and generalisability of the results. Finally, although the bootstrap method was employed in the mediation analysis to address issues related to non-normality and small sample sizes [136], the modest sample size still limits the statistical power to detect small indirect effects. Future studies with larger and more diverse samples are recommended to strengthen the reliability of mediation pathways.

### 3.7. Ethical Considerations

This study follows strict ethical guidelines to ensure participants' rights, safety, and well-being. Ethical clearance was granted by the University of Reading (Ref. No. CO143) on 30 June 2025, with documentation in Appendix A. Given the sensitive focus on international students' loneliness and coping behaviours, potential mild discomfort was acknowledged. Participants received an information sheet explaining the study's purpose, their rights, and the option to skip questions or withdraw at any time. The survey used neutral language, included optional open-ended items, and provided links to support resources. Confidentiality was safeguarded: no personal identifiers were collected, all data were anonymised, and access was restricted to the researcher. Data will be securely stored and destroyed after grading. The study fully upheld informed consent, voluntary participation, and autonomy principles.

## 4. Results

### 4.1. Introduction

This chapter presents the results of the study. It begins with a description of the sample characteristics. Then the quantitative analysis is reported in several stages: reliability and validity testing of the measurement instruments, correlation analysis, and hypothesis testing through regression and mediation models. The qualitative part, drawn from participants' responses to open-ended questions, are presented thereafter.

### 4.2. Sample Description

The study included 128 participants from 40 EU and non-EU countries. Among them, Chinese students made up the largest proportion (35.94%), followed by students from Nigeria (17.19%) and India (8.59%). The overall distribution was generally consistent with the makeup of international students in the UK [4]. In terms of university distribution, students came from 45 universities across the UK. The University of Reading had the highest number of participants, accounting for 47.66% of the total sample, mainly due to the researcher's personal and academic network. Other participants were more evenly distributed.

Regarding academic level, the majority were master's students (81.25%), followed by undergraduates (10.16%) and PhD students (8.59%). The participants' ages ranged from 18 to 54, with a mean age of 27.71 years (SD = 6.13), mostly concentrated around 23 and 24 years old. 64.06% were female and 35.94% male. For language ability, 73.43% of participants rated their English as good or very good and showed strong skills in online expression and using digital tools.

| Sample Description (N = 128)    |           |             |                                               |        |        |
|---------------------------------|-----------|-------------|-----------------------------------------------|--------|--------|
| Variables                       | Frequency | % Variables | Frequency                                     | %      |        |
| <b>Country of origin</b>        |           |             | <b>Living arrangement</b>                     |        |        |
| China                           | 46        | 47.656      | Shared house                                  | 76     | 59.375 |
| Nigeria                         | 22        | 3.906       | Live alone                                    | 52     | 40.625 |
| India                           | 11        | 3.125       | <b>Romantic relationship</b>                  |        |        |
| Thailand                        | 4         | 3.125       | No                                            | 64     | 50     |
| Spain                           | 3         |             | Yes                                           | 64     | 50     |
| Iran                            | 3         | 81.25       | <b>Grocery stores near your accommodation</b> |        |        |
| <b>Gender</b>                   |           | 10.156      | Yes                                           | 125    | 97.656 |
| Male                            | 46        | 8.594       | No                                            | 3      | 2.344  |
| Female                          | 82        |             | <b>Delivery apps on your phone</b>            |        |        |
| <b>University</b>               |           | 35.938      | No                                            | 15     | 11.719 |
| University of Reading           | 61        | 17.188      | Yes                                           | 113    | 88.281 |
| University of Warwick           | 5         | 8.594       | <b>Employment</b>                             |        |        |
| University of Manchester        | 4         | 3.125       | No                                            | 72     | 56.25  |
| University of Leeds             | 4         | 2.344       | Yes                                           | 56     | 43.75  |
| <b>Degree level</b>             |           | 2.344       |                                               |        |        |
| Master's degree                 | 104       |             |                                               |        |        |
| Bachelor's degree               | 13        | 35.938      |                                               |        |        |
| PhD                             | 11        | 64.063      |                                               |        |        |
| <b>First time in the UK</b>     |           |             |                                               |        |        |
| Yes                             | 81        | 63.281      |                                               |        |        |
| No                              | 47        | 36.719      | Variables                                     | Mean   | SD     |
| <b>Length of stay in the UK</b> |           |             |                                               |        |        |
| 0-6 months                      | 2         | 1.563       | Age                                           | 27.711 | 6.131  |
| 6-12 months                     | 72        | 56.25       | English proficiency                           | 3.992  | 0.892  |
| 1-2 years                       | 24        | 18.75       | Digital literacy                              | 4.164  | 0.771  |
| 2-3 years                       | 15        | 11.719      | Shop online                                   | 2.828  | 1.237  |
| More than 3 years               | 15        | 11.719      | Shop offline                                  | 3.43   | 1.168  |

Figure 4. Sample Description



Additionally, 63.28% were living in the UK for the first time, and 56.25% had been in the UK for 6–12 months. 97.66% said there were grocery stores near their accommodation, and 88.28% had installed delivery apps. In terms of living arrangements, 59.38% lived with others and 40.63% lived alone. Half of the participants were in a romantic relationship. As for employment, 43.75% had part-time jobs or work experience, while 56.25% were not employed.

Shopping frequency data from the past week showed that participants shopped online an average of 2.83 times (SD = 1.24), and offline an average of 3.43 times (SD = 1.17). The range for both was between 1 and 5 times.

### 4.3. Quantitative Results

#### 4.3.1. Reliability and Validity

To assess internal consistency, Cronbach's alpha was calculated for all multi-item scales. Except for cultural loneliness, all constructs showed acceptable reliability above the 0.70 threshold [137]. The cultural loneliness scale produced a lower alpha (0.535), which may reflect weaker inter-item correlations given its exploratory adaptation, but was retained following guidance that low alphas are common in novel constructs [138].

EFAs were then performed on the cultural loneliness items and the four shopping motivation subscales. Cultural loneliness showed a one-factor solution (eigenvalue = 1.562, variance explained = 28.5%, KMO = 0.615, Bartlett's  $p < 0.001$ ), though relatively low loadings indicate a need for refinement in future research. EFAs for the motivational subscales (Online Approach, Online Avoidance, Offline Approach, and Offline Avoidance) were conducted separately with satisfactory variance explained (>55%) and strong loadings (>0.68).

Subsequently, CFA was conducted on all multi-item constructs using the same dataset due to practical constraints (Worthington and Whittaker, 2006; Kyriazos and Poga-Kyriazou, 2023). The CFA yielded acceptable model fit statistics:  $\chi^2(168) = 267.621$ ,  $p < 0.001$ ; CFI = 0.905; TLI = 0.881; RMSEA = 0.068 [90% CI: 0.052, 0.083]; SRMR = 0.070; and GFI = 0.961. These indices indicate that the hypothesized measurement model provides a satisfactory representation of the data.

| Variable                     | Cronbach |       | EFA                             |       | CFA                   |                       |  |
|------------------------------|----------|-------|---------------------------------|-------|-----------------------|-----------------------|--|
|                              | $\alpha$ | KMO   | Bartlett's Test $\chi^2$ (df=3) | AVE   | Factor Loading (Mean) | R <sup>2</sup> (Mean) |  |
| Emotional Loneliness         | 0.735    |       |                                 | 0.501 | 0.796                 | 0.458                 |  |
| Social Loneliness            | 0.845    |       |                                 | 0.645 | 0.9                   | 0.869                 |  |
| Cultural Loneliness          | 0.535    | 0.615 | 27.234                          | 0.281 | 0.55                  | 0.278                 |  |
| Online Approach Motivation   | 0.78     | 0.691 | 129.621                         | 0.546 | 0.928                 | 0.633                 |  |
| Online Avoidance Motivation  | 0.808    | 0.697 | 108.083                         | 0.592 | 0.967                 | 0.726                 |  |
| Offline Approach Motivation  | 0.787    | 0.708 | 108.899                         | 0.553 | 0.724                 | 0.583                 |  |
| Offline Avoidance Motivation | 0.799    | 0.702 | 118.492                         | 0.576 | 0.756                 | 0.708                 |  |

**Figure 5.** Reliability and Validity

#### 4.3.2. Correlation Analysis

The variables showed means between 2.26 and 3.43 and standard deviations from 0.95 to 1.24, with skewness and kurtosis indicating no major deviations from normality. Correlation analyses revealed that emotional loneliness was negatively related to social loneliness ( $r = -0.344$ ,  $p < 0.01$ ) but positively related to cultural loneliness ( $r = 0.479$ ,  $p < 0.01$ ). Emotional and cultural loneliness were both positively associated with online approach and avoidance motivations. Offline approach motivation correlated positively with emotional loneliness ( $r = 0.228$ ,  $p < 0.05$ ) and marginally with social loneliness, while offline avoidance motivation was positively linked to emotional ( $r = 0.466$ ,  $p < 0.01$ ) and cultural loneliness ( $r = 0.353$ ,  $p < 0.01$ ), but negatively with social loneliness ( $r = -0.199$ ,  $p < 0.05$ ). Online shopping frequency was positively related to emotional and cultural loneliness, as well as to both online motivations,

whereas offline shopping frequency showed only a weak association with offline avoidance motivation. No multicollinearity issues were detected, supporting the suitability of the data for regression and mediation analyses.

| Variable                         | Descriptive |      | Skewness  |      | Kurtosis  |       | Correlation |          |          |          |          |          |       |       |
|----------------------------------|-------------|------|-----------|------|-----------|-------|-------------|----------|----------|----------|----------|----------|-------|-------|
|                                  | M           | SD   | Statistic | SE   | Statistic | SE    | 1           | 2        | 3        | 4        | 5        | 6        | 7     | 8     |
| 1. Emotional Loneliness          | 2.59        | 0.96 | 0.245     | 0.21 | -0.394    | 0.425 | —           |          |          |          |          |          |       |       |
| 2. Social Loneliness             | 3.31        | 0.99 | -0.16     | 0.21 | -0.674    | 0.425 | -0.344***   | —        |          |          |          |          |       |       |
| 3. Cultural Loneliness           | 2.73        | 0.91 | 0.105     | 0.21 | -0.424    | 0.425 | 0.479***    | -0.14    | —        |          |          |          |       |       |
| 4. Online Approach               | 3.18        | 1.02 | -0.521    | 0.21 | -0.47     | 0.425 | 0.32***     | 0.121    | 0.263**  | —        |          |          |       |       |
| 5. Online Avoidance              | 2.61        | 1.11 | 0.215     | 0.21 | -0.935    | 0.425 | 0.394***    | -0.12    | 0.413*** | 0.507*** | —        |          |       |       |
| 6. Offline Approach              | 3.27        | 0.95 | -0.504    | 0.21 | -0.361    | 0.425 | 0.228**     | 0.154*   | 0.132    | 0.415*** | 0.282*** | —        |       |       |
| 7. Offline Avoidance             | 2.26        | 0.95 | 0.505     | 0.21 | -0.487    | 0.425 | 0.466***    | -0.199** | 0.353*** | 0.192**  | 0.525*** | 0.418*** | —     |       |
| 8. Frequency of shopping online  | 2.83        | 1.24 | 0.156     | 0.21 | -0.923    | 0.425 | 0.193**     | 0.093    | 0.154*   | 0.318*** | 0.271**  | 0.111    | 0.083 | —     |
| 9. Frequency of shopping offline | 3.43        | 1.17 | -0.384    | 0.21 | -0.626    | 0.425 | 0.072       | -0.01    | 0.018    | -0.031   | -0.082   | 0.153*   | 0.086 | 0.041 |

\*p < 0.1, \*\*p < 0.05, \*\*\*p < 0.01; SD=standard deviation, SE= standard error.

**Figure 6.** Correlation Analysis

#### 4.3.3. Hypothesis Testing

H1: Emotional loneliness is the most prevalent among international students in UK higher education.

The distributions of the three types of loneliness approximated normality, as indicated by skewness and kurtosis values that showed no significant deviations. However, Mauchly's test of sphericity revealed a violation of the sphericity assumption ( $p < 0.001$ ). Therefore, the degrees of freedom were adjusted using the Greenhouse-Geisser correction.

A repeated measures ANOVA was then conducted to test Hypothesis H1. The corrected results revealed a significant difference among the three types of loneliness,  $F(1.563, 198.474) = 20.329$ ,  $p < 0.001$ ,  $\omega^2 = 0.093$ , indicating that participants experienced different levels of loneliness depending on the type. Descriptive statistics showed that social loneliness was the most commonly reported ( $M = 3.313$ ,  $SD = 0.991$ ), followed by cultural loneliness ( $M = 2.732$ ,  $SD = 0.910$ ), with emotional loneliness being the least prevalent ( $M = 2.591$ ,  $SD = 0.957$ ).

These findings suggest that social loneliness was more pronounced than emotional and cultural loneliness among participants. Therefore, Hypothesis H1 was not supported.

H2: Students experiencing emotional loneliness are more likely to prefer online shopping, and this relationship is mediated by online approach motivation.

Based on Baron and Kenny's three-step approach, this study examined the effect of emotional loneliness on online shopping behaviour and the mediating role of online approach motivation. A total of 11 variables including gender, age, English language ability, living situation, and study experience were included as control variables.

In Path a (emotional loneliness  $\rightarrow$  online approach motivation), emotional loneliness significantly and positively predicted online approach motivation ( $B = 0.349$ ,  $p < 0.001$ ). Other significant positive predictors included gender (female,  $B = 0.415$ ,  $p = 0.020$ ), possession of



delivery apps ( $B = 0.618$ ,  $p = 0.024$ ), and digital literacy ( $B = 0.280$ ,  $p = 0.012$ ). Age was a significant negative predictor ( $B = -0.032$ ,  $p = 0.021$ ). In Path c (emotional loneliness  $\rightarrow$  online shopping behaviour), emotional loneliness also had a significant positive effect on online shopping behaviour ( $B = 0.231$ ,  $p = 0.045$ ). In Paths b and c' (emotional loneliness + online approach motivation  $\rightarrow$  online shopping behaviour), the direct effect of emotional loneliness was no longer significant ( $B = 0.152$ ,  $p = 0.212$ ), while the effect of online approach motivation on online shopping was marginally significant ( $B = 0.228$ ,  $p = 0.070$ ).

All regression models showed statistically significant overall fit (F-tests,  $p < 0.01$ ). The specification that included online approach motivation had the greatest explanatory power (adjusted  $R^2 = 0.138$ ). In that model, the mediator's coefficient was significant, while the direct effect of emotional loneliness on online shopping became non-significant, consistent with full mediation. The indirect effect via online approach motivation was 0.0829, with a 95% CI [0.0124, 0.1933], which excludes zero and is therefore significant. Taken together, these results indicate that online approach motivation mediates the relationship between emotional loneliness and online shopping, supporting the hypothesis.

| Variables                                     | Path A         |                   | Path C         |                 | Path B, C'     |                 |
|-----------------------------------------------|----------------|-------------------|----------------|-----------------|----------------|-----------------|
|                                               | B (SE)         | t (P)             | B (SE)         | t (P)           | B (SE)         | t (P)           |
| <b>Gender</b>                                 |                |                   |                |                 |                |                 |
| Female (reference: male)                      | 0.415 (0.176)  | 2.356 (0.020**)   | 0.202 (0.234)  | 0.864 (0.390)   | 0.108 (0.237)  | 0.454 (0.651)   |
| <b>Age (years)</b>                            | -0.032 (0.014) | -2.336 (0.021**)  | -0.010 (0.018) | -0.570 (0.570)  | -0.003 (0.019) | -0.188 (0.851)  |
| <b>English proficiency</b>                    | -0.024 (0.101) | -0.235 (.815)     | -0.196 (0.134) | -1.464 (0.146)  | -0.191 (0.133) | -1.438 (0.153)  |
| <b>Digital literacy</b>                       | 0.280 (0.110)  | 2.539 (0.012**)   | 0.219 (0.147)  | 1.492 (0.139)   | 0.155 (0.149)  | 1.038 (0.301)   |
| <b>First time in the UK</b>                   |                |                   |                |                 |                |                 |
| Yes (reference: no)                           | -0.300 (0.187) | -1.600 (0.112)    | -0.079 (0.249) | -0.319 (0.750)  | -0.101 (0.245) | -0.413 (0.681)  |
| <b>Length of stay in the UK</b>               |                |                   |                |                 |                |                 |
| 0-6 months (reference: more than 3 years)     | 0.911 (0.688)  | 1.323 (0.189)     | 0.942 (0.914)  | 1.030 (0.305)   | 0.734 (0.912)  | 0.805 (0.422)   |
| 6-12 months (reference: more than 3 years)    | -0.265 (0.279) | -0.948 (0.345)    | 0.126 (0.371)  | 0.339 (0.735)   | 0.186 (0.369)  | 0.505 (0.615)   |
| 1-2 years (reference: more than 3 years)      | -0.052 (0.311) | -0.168 (0.867)    | 0.417 (0.413)  | 1.008 (0.316)   | 0.428 (0.409)  | 1.047 (0.297)   |
| 2-3 years (reference: more than 3 years)      | 0.086 (0.339)  | 0.255 (0.800)     | 0.476 (0.451)  | 1.056 (0.293)   | 0.456 (0.446)  | 1.023 (0.308)   |
| <b>Living arrangement</b>                     |                |                   |                |                 |                |                 |
| Shared house (reference: live alone)          | 0.076 (0.170)  | 0.447 (0.656)     | 0.064 (0.226)  | 0.283 (0.776)   | 0.081 (0.224)  | 0.363 (0.717)   |
| <b>Romantic relationship</b>                  |                |                   |                |                 |                |                 |
| Yes (reference: no)                           | -0.247 (0.177) | -1.394 (0.166)    | 0.072 (0.235)  | 0.306 (0.760)   | 0.128 (0.235)  | 0.546 (0.586)   |
| <b>Grocery stores near your accommodation</b> |                |                   |                |                 |                |                 |
| Yes (reference: no)                           | -0.497 (0.558) | 0.891 (0.375)     | -0.802 (0.741) | -1.082 (0.280)  | -0.688 (0.736) | -0.936 (0.351)  |
| <b>Delivery apps on your phone</b>            |                |                   |                |                 |                |                 |
| Yes (reference: no)                           | 0.618 (0.269)  | 2.294 (0.024**)   | 0.943 (0.358)  | 2.635 (0.010**) | 0.802 (0.362)  | 2.214 (0.029**) |
| <b>Employment</b>                             |                |                   |                |                 |                |                 |
| Yes (reference: no)                           | -0.013 (0.178) | -0.073 (0.942)    | 0.413 (0.237)  | 1.743 (0.084*)  | 0.416 (0.235)  | 1.774 (0.079*)  |
| <b>Emotional loneliness</b>                   | 0.349 (0.086)  | 4.066 (<0.001***) | 0.231 (0.114)  | 2.028 (0.045**) | 0.152 (0.121)  | 1.256 (0.212)   |
| <b>Online approach motivation</b>             | —              | —                 | —              | —               | 0.228 (0.124)  | 1.832 (0.070*)  |

Path A: effect of emotional loneliness on online approach motivation ( $R^2 = 0.347$ , adjusted  $R^2 = 0.260$ ,  $F(15, 112) = 3.967$ ,  $p < 0.001$ ).

Path C: effect of emotional loneliness on online shopping behavior ( $R^2 = 0.223$ , adjusted  $R^2 = 0.119$ ,  $F(15, 112) = 2.148$ ,  $p = 0.012$ ).

Path B, C': effect of emotional loneliness and online approach on online shopping ( $R^2 = 0.246$ , adjusted  $R^2 = 0.138$ ,  $F(16, 111) = 2.266$ ,  $p = 0.007$ ).

\* $p < 0.1$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$

**Figure 7.** The mediating effect of online approach motivation between emotional loneliness and online shopping.

H3: Students experiencing social loneliness are more likely to prefer offline shopping, and this relationship is mediated by offline-avoidance motivation.

The regression analyses for paths a, b, c, and c' were all non-significant; therefore, H3 was not supported. However, further analysis indicated that social loneliness was significantly related to other variables. Specifically, social loneliness negatively predicted online avoidance motivation ( $B = -0.251$ ,  $p < 0.05$ ), while online avoidance motivation significantly and positively predicted online shopping behaviour ( $B = 0.248$ ,  $p < 0.05$ ). Bootstrap mediation analysis confirmed the statistical significance of this indirect pathway: social loneliness had a significant indirect effect on online shopping behaviour through online avoidance motivation (indirect effect =  $-0.0559$ , 95% CI  $[-0.1652, -0.0034]$ ). This finding suggests that although social

loneliness does not directly influence online shopping behaviour, it indirectly reduced online shopping behaviour by lowering online avoidance motivation.

| Variables                                     | Path A         |                  | Path C         |                | Path B, C'     |                 |
|-----------------------------------------------|----------------|------------------|----------------|----------------|----------------|-----------------|
|                                               | B (SE)         | t (P)            | B (SE)         | t (P)          | B (SE)         | t (P)           |
| <b>Gender</b>                                 |                |                  |                |                |                |                 |
| Female (reference: male)                      | 0.048 (0.206)  | 0.232 (0.817)    | 0.125 (0.239)  | 0.523 (0.602)  | 0.113 (0.234)  | 0.482 (0.631)   |
| <b>Age (years)</b>                            | -0.041 (0.016) | -2.512 (0.013**) | -0.011 (0.019) | -0.583 (0.561) | -0.001 (0.019) | -0.045 (0.964)  |
| <b>English proficiency</b>                    | -0.283 (0.117) | -2.412 (0.017**) | -0.215 (0.136) | -1.580 (0.117) | -0.145 (0.137) | -1.056 (0.293)  |
| <b>Digital literacy</b>                       | 0.166 (0.132)  | 1.263 (0.209)    | 0.156 (0.152)  | 1.023 (0.309)  | 0.115 (0.151)  | 0.761 (0.448)   |
| <b>First time in the UK</b>                   |                |                  |                |                |                |                 |
| Yes (reference: no)                           | 0.141 (0.218)  | 0.648 (0.519)    | 0.016 (0.253)  | 0.065 (0.948)  | -0.019 (0.248) | -0.075 (0.941)  |
| <b>Length of stay in the UK</b>               |                |                  |                |                |                |                 |
| 0-6 months (reference: more than 3 years)     | 0.207 (0.794)  | 0.261 (0.795)    | 0.663 (0.920)  | 0.720 (0.473)  | 0.611 (0.903)  | 0.677 (0.500)   |
| 6-12 months (reference: more than 3 years)    | -0.702 (0.327) | -2.150 (0.034)** | 0.169 (0.378)  | 0.448 (0.655)  | 0.344 (0.379)  | 0.908 (0.366)   |
| 1-2 years (reference: more than 3 years)      | -0.671 (0.371) | -1.810 (0.073*)  | 0.534 (0.429)  | 1.245 (0.216)  | 0.701 (0.427)  | 1.640 (0.104)   |
| 2-3 years (reference: more than 3 years)      | 0.068 (0.394)  | 0.172 (0.864)    | 0.488 (0.457)  | 1.068 (0.288)  | 0.471 (0.448)  | 1.051 (0.296)   |
| <b>Living arrangement</b>                     |                |                  |                |                |                |                 |
| Shared house (reference: live alone)          | -0.297 (0.201) | -1.480 (0.142)   | 0.019 (0.232)  | 0.082 (0.934)  | 0.093 (0.230)  | 0.403 (0.688)   |
| <b>Romantic relationship</b>                  |                |                  |                |                |                |                 |
| Yes (reference: no)                           | -0.080 (0.206) | -0.386 (0.700)   | 0.053 (0.239)  | 0.222 (0.824)  | 0.073 (0.234)  | 0.311 (0.757)   |
| <b>Grocery stores near your accommodation</b> |                |                  |                |                |                |                 |
| Yes (reference: no)                           | 0.471 (0.649)  | 0.726 (0.470)    | -0.848 (0.751) | -1.128 (0.262) | -0.964 (0.739) | -1.305 (0.194)  |
| <b>Delivery apps on your phone</b>            |                |                  |                |                |                |                 |
| Yes (reference: no)                           | 0.610 (0.310)  | 1.965 (0.052*)   | 1.065 (0.359)  | 1.965 (0.052*) | 0.914 (0.359)  | 2.549 (0.012**) |
| <b>Employment</b>                             |                |                  |                |                |                |                 |
| Yes (reference: no)                           | 0.025 (0.208)  | 0.122 (0.903)    | 0.402 (0.240)  | 1.671 (0.097)  | 0.396 (0.236)  | 1.677 (0.096*)  |
| <b>Social loneliness</b>                      | -0.251 (0.103) | -2.429 (0.017**) | 0.118 (0.120)  | 0.989 (0.325)  | 0.180 (0.120)  | 1.500 (0.137)   |
| <b>Online avoidance motivation</b>            |                |                  |                |                | 0.248 (0.107)  | 2.311 (0.023**) |

Path A: effect of social loneliness on online avoidance motivation ( $R^2 = 0.257$ , Adjusted  $R^2 = 0.157$ ,  $F(15, 112) = 2.578$ ,  $p = 0.002$ )

Path C: effect of social loneliness on online shopping behavior ( $R^2 = 0.202$ , Adjusted  $R^2 = 0.095$ ,  $F(15, 112) = 1.888$ ,  $p = 0.032$ )

Path B, C': effect of social loneliness and online avoidance on online shopping ( $R^2 = 0.238$ , Adjusted  $R^2 = 0.129$ ,  $F(16, 111) = 2.173$ ,  $p = 0.010$ )

\* $p < 0.1$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$

**Figure 8.** The mediating effect of online avoidance motivation between social loneliness and online shopping behaviour.

H4: Students experiencing cultural loneliness are more likely to prefer online shopping, and this relationship is mediated by online approach motivation.

In Path a (cultural loneliness → online approach motivation), cultural loneliness was found to be a significant positive predictor of online approach motivation ( $B = 0.298$ ,  $p = 0.003$ ). In addition, English proficiency ( $B = 2.297$ ,  $p = 0.011$ ), digital literacy ( $B = 0.272$ ,  $p = 0.018$ ), and possession of delivery apps ( $B = 0.642$ ,  $p = 0.023$ ) also significantly and positively predicted online approach motivation. Age was a significant negative predictor ( $B = -0.038$ ,  $p = 0.009$ ). In Path c (cultural loneliness → online shopping behaviour), cultural loneliness did not have a significant effect on online shopping behaviour ( $B = 0.118$ ,  $p = 0.369$ ). In Paths b and c' (cultural loneliness + online approach motivation → online shopping behaviour), the direct effect of cultural loneliness remained non-significant ( $B = 0.036$ ,  $p = 0.789$ ), while online approach motivation had a significant positive effect on online shopping behaviour ( $B = 0.275$ ,  $p = 0.026$ ). Additionally, possession of delivery apps ( $B = 0.818$ ,  $p = 0.027$ ) significantly predicted online shopping, and employment status showed a marginally significant effect ( $B = 0.407$ ,  $p = 0.090$ ). A bootstrap method was further used to examine the mediation effect, and the results were consistent with the regression analysis. The indirect effect of cultural loneliness on online shopping behaviour through online approach motivation was statistically significant, with an unstandardized indirect effect of 0.0743 (95% CI [0.0120, 0.1935]). In contrast, the direct effect of cultural loneliness on online shopping behaviour remained non-significant ( $B = 0.0298$ ,  $p = 0.8130$ ). These findings suggest that cultural loneliness influences online shopping mainly through enhancing online approach motivation, rather than having a direct effect.



| Variables                                     | Path A         |                  | Path C         |                | Path B, C'     |                 |
|-----------------------------------------------|----------------|------------------|----------------|----------------|----------------|-----------------|
|                                               | B (SE)         | t (P)            | B (SE)         | t (P)          | B (SE)         | t (P)           |
| <b>Gender</b>                                 |                |                  |                |                |                |                 |
| Female (reference: male)                      | 0.027 (0.106)  | 0.253 (0.801)    | 0.131 (0.239)  | 0.550 (0.584)  | 0.055 (0.237)  | 0.232 (0.817)   |
| <b>Age (years)</b>                            | -0.038 (0.014) | -2.660 (0.009**) | -0.014 (0.019) | -0.759 (0.450) | -0.004 (0.019) | -0.197 (0.844)  |
| <b>English proficiency</b>                    | 2.297 (0.894)  | 2.571 (0.011*)   | -0.181 (0.139) | -1.300 (0.196) | -0.188 (0.137) | -1.377 (0.171)  |
| <b>Digital literacy</b>                       | 0.272 (0.114)  | 2.395 (0.018*)   | 0.205 (0.149)  | 1.376 (0.171)  | 0.130 (0.150)  | 0.867 (0.388)   |
| <b>First time in the UK</b>                   |                |                  |                |                |                |                 |
| Yes (reference: no)                           | 0.277 (0.182)  | 1.519 (0.132)    | -0.029 (0.251) | -0.115 (0.909) | 0.036 (0.248)  | 0.144 (0.886)   |
| <b>Length of stay in the UK</b>               |                |                  |                |                |                |                 |
| 0-6 months (reference: more than 3 years)     | 1.146 (0.732)  | 1.566 (0.120)    | 0.473 (0.421)  | 1.124 (0.264)  | 0.621 (0.950)  | 0.654 (0.514)   |
| 6-12 months (reference: more than 3 years)    | -0.125 (0.291) | -0.430 (0.668)   | 0.184 (0.381)  | 0.482 (0.631)  | 0.218 (0.374)  | 0.582 (0.562)   |
| 1-2 years (reference: more than 3 years)      | -0.235 (0.192) | -1.226 (0.223)   | 0.456 (0.458)  | 0.996 (0.322)  | 0.455 (0.413)  | 1.101 (0.273)   |
| 2-3 years (reference: more than 3 years)      | 0.025 (0.351)  | 0.072 (0.943)    | 0.936 (0.957)  | 0.978 (0.330)  | 0.450 (0.450)  | 0.998 (0.320)   |
| <b>Living arrangement</b>                     |                |                  |                |                |                |                 |
| Shared house (reference: live alone)          | 0.135 (0.175)  | 0.774 (0.441)    | -0.024 (0.229) | -0.103 (0.918) | -0.061 (0.225) | -0.270 (0.788)  |
| <b>Romantic relationship</b>                  |                |                  |                |                |                |                 |
| Yes (reference: no)                           | -0.239 (0.183) | -1.305 (0.195)   | 0.070 (0.239)  | 0.293 (0.770)  | 0.136 (0.237)  | 0.573 (0.568)   |
| <b>Grocery stores near your accommodation</b> |                |                  |                |                |                |                 |
| Yes (reference: no)                           | -0.627 (0.575) | -1.089 (0.279)   | -0.864 (0.752) | -1.148 (0.253) | -0.692 (0.743) | -0.931 (0.354)  |
| <b>Delivery apps on your phone</b>            |                |                  |                |                |                |                 |
| Yes (reference: no)                           | 0.642 (0.278)  | 2.307 (0.023*)   | 0.995 (0.364)  | 2.733 (0.007)  | 0.818 (0.366)  | 2.237 (0.027**) |
| <b>Employment</b>                             |                |                  |                |                |                |                 |
| Yes (reference: no)                           | -0.079 (0.185) | 0.429 (0.669)    | 0.385 (0.242)  | 1.592 (0.114)  | 0.407 (0.238)  | 1.711 (0.090*)  |
| <b>Cultural loneliness</b>                    | 0.298 (0.100)  | 2.991 (0.003**)  | 0.118 (0.130)  | 0.902 (0.369)  | 0.036 (0.133)  | 0.269 (0.789)   |
| <b>Online approach motivation</b>             |                |                  |                |                | 0.275 (0.121)  | 2.264 (0.026**) |

Path A: effect of cultural loneliness on online approach motivation ( $R^2 = 0.306$ , adjusted  $R^2 = 0.213$ ,  $F(15, 112) = 3.293$ ,  $p < .001$ ).  
Path C: effect of cultural loneliness on online shopping behavior ( $R^2 = 0.201$ , Adjusted  $R^2 = 0.094$ ,  $F(15, 112) = 1.875$ ,  $p = 0.033$ ).  
Path B, C': effect of cultural loneliness and online approach on online shopping ( $R^2 = 0.236$ , Adjusted  $R^2 = 0.126$ ,  $F(16, 111) = 2.143$ ,  $p = 0.011$ ).  
\* $p < 0.1$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$

**Figure 9.** The mediating effect of online approach motivation between cultural loneliness and online shopping.

| Type     | Effect (Path)                                                       | Estimate | SE     | 95% CI [Lower, Upper] |
|----------|---------------------------------------------------------------------|----------|--------|-----------------------|
| Indirect | Emotional loneliness → Online approach motivation → Online shopping | 0.0829   | 0.0446 | [0.0124, 0.1933]      |
| Direct   | Emotional loneliness → Online shopping                              | 0.1391   | 0.1183 | [-0.0953, 0.3734]     |
| Indirect | Social loneliness → Online avoidance motivation → Online shopping   | -0.0559  | 0.0385 | [-0.1652, -0.0034]    |
| Direct   | Social loneliness → Online avoidance motivation                     | 0.1482   | 0.1162 | [-0.0819, 0.3783]     |
| Indirect | Cultural loneliness → Online approach motivation → Online shopping  | 0.0743   | 0.043  | [0.0120, 0.1935]      |
| Direct   | Cultural loneliness → Online shopping                               | 0.0298   | 0.1255 | [-0.2189, 0.2784]     |

**Figure 10.** The indirect and direct effects of each path.

| Hypothesis                                                                          | Test Statistics                                                                                                                                                                                                            | Decision      | Conclusion                                                                                                                                                                                                                                                                                                  |
|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| H1: Emotional loneliness is the most prevalent among international students.        | $F(1.563, 198.474) = 20.329$ , $\omega^2 = 0.093$ , $p < 0.001$<br>Emotional Loneliness $M = 2.591$ , $SD = 0.957$ ;<br>Social Loneliness $M = 3.313$ , $SD = 0.991$ ;<br>Cultural Loneliness $M = 2.732$ , $SD = 0.910$ . | Not supported | Social loneliness is the most prevalent among international students.                                                                                                                                                                                                                                       |
| H2: Emotional loneliness → Online shopping, mediated by online approach motivation. | Path a: $B = 0.349$ , $p < 0.001$<br>Path b: $B = 0.228$ , $p = 0.070$<br>Path c: $B = 0.231$ , $p = 0.045$<br>Path c': $B = 0.152$ , $p = 0.212$<br>Indirect effect: 0.0829, 95% CI [0.0124, 0.1933]                      | Supported     | Full mediation                                                                                                                                                                                                                                                                                              |
| H3: Social loneliness → Offline shopping, mediated by offline avoidance motivation. | Path a: $B = 0.151$ , $p = 0.187$<br>Path b: $B = 0.136$ , $p = 0.265$<br>Path c: $B = -0.047$ , $p = 0.697$<br>Path c': $B = -0.016$ , $p = 0.898$                                                                        | Not supported | Social loneliness reduces online shopping indirectly via lowering online avoidance motivation.<br>Path a: $B = -0.251$ , $p = 0.017$<br>Path b: $B = 0.248$ , $p = 0.023$<br>Path c: $B = 0.118$ , $p = 0.325$<br>Path c': $B = 0.180$ , $p = 0.137$<br>Indirect effect: -0.0559, 95% CI [-0.1652, -0.0034] |
| H4: Cultural loneliness → Online shopping, mediated by online approach motivation.  | Path a: $B = 0.298$ , $p = 0.003$<br>Path b: $B = 0.275$ , $p = 0.026$<br>Path c: $B = 0.118$ , $p = 0.369$<br>Path c': $B = 0.036$ , $p = 0.789$<br>Indirect effect: 0.0743, 95% CI [0.0120, 0.1935]                      | Supported     | Indirect-only mediation                                                                                                                                                                                                                                                                                     |

**Figure 11.** Summary of Hypothesis Testing Results

## 4.4. Qualitative Responses

### 4.4.1. Loneliness Categories

In the open-ended responses, participants' experiences of loneliness were classified into emotional, social, and cultural dimensions, and were frequently reported to be triggered by particular times (such as nighttime, winter, holidays, or periods of solitude) and significant life events (such as illness, birthdays, relocation, or academic stress). These categories are presented below.

| Categories              | Examples                                                        |
|-------------------------|-----------------------------------------------------------------|
| 1. Emotional loneliness | Far from family / missing home                                  |
|                         | Bad mood                                                        |
|                         | Relationship issues                                             |
|                         | Longing for deep emotional connection                           |
| 2. Social loneliness    | Lack of support and companionship                               |
|                         | Absence of social interaction                                   |
| 3. Cultural loneliness  | Language barriers                                               |
|                         | Being surrounded by people from a different cultural background |

**Figure 12.** Main categories of lonely experience

### 4.4.2. Shopping as a Coping Mechanism

When asked whether shopping helps reduce feelings of loneliness, around 70% of participants responded positively. They cited a range of reasons: shopping serves as a distraction and helps keep their minds engaged; it offers short-term happiness, particularly when buying something they enjoy; offline shopping creates opportunities for social interaction; the anticipation of a delivery provides something to look forward to; and some participants mentioned gaining a sense of control or emotional comfort through the act of shopping. However, a few acknowledged that these effects are only temporary, with feelings of loneliness often returning afterward. These categories are presented below.

| Categories               | Typical expressions                                                                                     |
|--------------------------|---------------------------------------------------------------------------------------------------------|
| Distraction / Occupation | keeps the mind busy, divert attention, distraction, something to do, time-consuming...                  |
| Emotional reward         | feel happy, make me happy, satisfaction, reward, positive feeling...                                    |
| Social interaction       | shopping with friends, around people, talk to people, interact with shop staff, engaging with people... |
| Anticipation             | look forward to, expecting parcel, anticipation of delivery, something to expect, having something new  |
| Control                  | sense of control, comfort, ownership, buy what I want, better myself...                                 |

**Figure 13.** Main categories of how shopping helps reduce loneliness

### 4.4.3. Shopping Preferences

Regarding shopping preferences when feeling lonely, participants generally tended to favor offline shopping. They often hope to go out for a walk, get some fresh air, or relax in good weather. Offline shopping also gives them a chance to interact with others face-to-face and is seen as offering a more immersive experience. Although online shopping was less frequently chosen, some participants still valued it for its convenience and accessibility, like saving time, having more product options, and avoiding the pressure of social interaction. A considerable number of participants said they were comfortable with both options.

## 5. Findings

### 5.1. Loneliness of International Students in UK Higher Education

This study found that all participants reported experiencing some degree of loneliness. Specifically, 75% of the participants experienced two types of loneliness, while 44%

experienced all three types at the same time. In terms of specific categories, the rate of emotional loneliness was 65%, social loneliness 82%, and cultural loneliness 71%. Among international students in the UK, the proportion of social loneliness was noticeably higher. However, existing research has not yet systematically examined which type of loneliness tends to be most pronounced among international students.

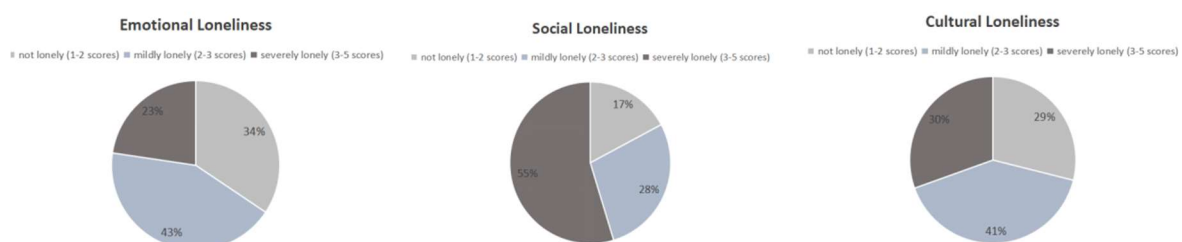
From a demographic perspective, different types of loneliness show significant variations across population groups, indicating relatively clear patterns. Males with a PhD degree, aged between 35 and 40, who have been living in the UK for 1 to 2 years and lack partner support, are more likely to experience emotional loneliness. During the early stage of adjustment after arrival, they often face high academic and psychological pressure. If individuals with similar characteristics stay in the UK for a longer time (2 to 3 years), they are more likely to experience cultural loneliness, which reflects a long-term struggle with cultural adaptation, feelings of not belonging, and cultural distance. In contrast, undergraduate students aged 25 to 29 who have been in the UK for less than one year and live alone are more likely to experience social loneliness. Previous research also supports these patterns. For example, Salimi and Bozorgpour [139] found that women generally experience lower levels of emotional loneliness compared to men. In addition, Manoli, McCarthy, and Ramsey [140] pointed out that emotional loneliness peaks during early adulthood and old age, while social loneliness remains relatively stable in early and middle adulthood and drops significantly later in life.

Based on participants' open-ended responses, the causes and situations that lead to loneliness are complex and diverse. Many participants shared emotional experiences related to close relationships, such as being ignored or distanced by close friends. For example, one student from United States said: "The last time I felt lonely was when a close female friend started ignoring me and stopped including me in conversations." Others talked about being alone on special occasions, like: "I felt lonely on my birthday, everyone could only reach me online, not in person."

The lack of social interaction was also a common reason mentioned. Several participants described being alone in daily life, such as: "Last weekend I was bored and couldn't find anyone to hang out with," or "Staying alone in my room and having no one to talk to." In more direct cases of social exclusion, one participant shared: "My friends went out without inviting me," which clearly showed a strong feeling of being left out.

In addition, cultural and language barriers were also important sources of loneliness. One Thai girl said: "I cannot talk deeply with my international friends," and another wrote: "As an international student, I felt lonely during the winter holidays when most of my classmates went home to be with their families." These experiences show that feelings of loneliness and cultural disconnection often come together, especially during times like holidays, seasonal changes, or major life transitions.

In conclusion, these real-life examples highlight how emotional, social, and cultural loneliness are connected, and how specific situations, such as holidays, weekends, and periods of change, can make the experience of loneliness even stronger for international students.



**Figure 14.** Levels of emotional, social, and cultural loneliness among international students

## 5.2. Emotional Loneliness and the Drive for Online Shopping

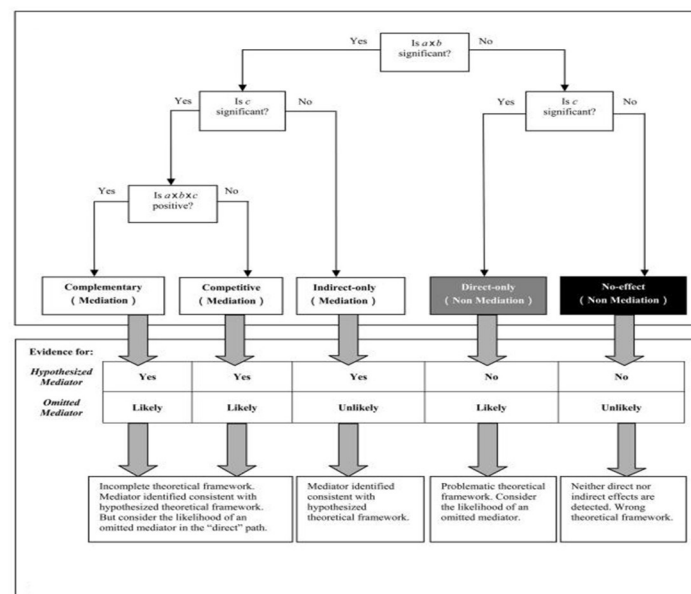
This study found that online approach motivation fully mediated the relationship between emotional loneliness and online shopping behaviour. This suggests that emotional loneliness indirectly increases online shopping by enhancing individuals' motivation to seek comfort, anticipation, or pleasure through digital channels, which aligns with the perspective of Heinrich and Gullone. However, some scholars offer alternative perspectives on the connection between emotional loneliness and motivation. Mehrabian and Russell (1974) [141], for instance, suggested that emotionally lonely individuals may experience heightened negative arousal and reduced perceived control, which can foster avoidance, rumination, or emotional suppression. Among international students in the UK, maintaining emotional contact with family members through digital platforms such as WhatsApp, WeChat, or video calls has become a routine. Such regular engagement may unintentionally reinforce their inclination to turn to online platforms for emotional comfort during moments of loneliness. In the open-ended responses collected for this study, several participants explicitly described how online shopping served as a coping mechanism for emotional emptiness. One participant remarked, "I choose online shopping when I feel lonely because it offers comfort and distraction without needing to face others," while another stated, "Spending money makes people feel better." Others highlighted the emotional gratification associated with anticipation: "Yes, it gives me something to look forward to," and "By expecting the parcel to be delivered." These reflections suggest that online shopping may serve as a symbolic substitute for interpersonal interaction, providing a sense of control, momentary joy, and emotional relief. As one participant succinctly noted: "It gives a sense of control, a small joy in choosing something for yourself."

These findings are consistent with the research of Loh, Gaur, and Sharma, who argued that individuals experiencing emotional loneliness may turn to digital consumption as a compensatory strategy. Shopping online feels easier and more under control. Emotionally lonely individuals may engage with anthropomorphized virtual figures such as AI chatbots or avatars [142], or immerse themselves in online novels and gaming communities that create emotionally rich, fictional worlds capable of temporarily alleviating emotional emptiness [87]. Furthermore, this study identified several key individual difference variables that significantly influenced the development of online approach motivation in response to emotional loneliness. Compared to men, women generally exhibit greater emotional sensitivity and expressiveness [143], which may explain why female participants reported stronger tendencies to engage with online environments when experiencing emotional distress. Age and digital literacy also played a critical role. Students from Generation Z and the Millennial cohort, having grown up immersed in digital technologies, are more likely to use features such as social media, push notifications, and algorithmic recommendations to facilitate emotionally driven digital engagement [144]. This also aligns with Davis' Technology Acceptance Model [145], which suggests that individuals are more motivated to use digital systems when they perceive them as both easy to use and practically useful. The presence of delivery-related apps and being employed were both significantly associated with increased engagement in online shopping, potentially due to factors such as greater financial independence, time constraints, or heightened exposure to online commercial content.

From a broader psychological perspective, these findings align with the Compensatory Internet Use Theory [146], which posits that individuals experiencing emotional distress may turn to the internet to compensate for unmet psychological needs in offline life. Emotionally lonely international students, in this case, used digital platforms to bridge emotional gaps caused by separation from family, friends, and cultural familiarity.

### 5.3. A Counterintuitive Route: Social Loneliness Decreases Online Shopping Through Lower Avoidance Motivation

Baron and Kenny require a significant total effect from the independent to the dependent variable, plus significant relationships from the independent variable to the mediator and from the mediator to the dependent variable. Mediation is determined by comparing the direct effect before and after controlling for the mediator. However, later studies argued that this model was too simple and they pointed out that even if the total effect is not significant, the indirect path can still be meaningful and should not be ignored [147]. Zhao et al. advanced the understanding of mediation by introducing a two-dimensional framework. This approach replaced the traditional typology of full, partial, and no mediation with five categories: complementary, competitive, indirect-only, direct-only, and no-effect.



**Figure 15.** Decision flowchart for testing mediation effects. *Adapted from Zhao, Lynch and Chen (2010).*

In this study, we found that social loneliness did not have a significant direct effect on online shopping behaviour, but it did exert a significant indirect effect through online avoidance motivation. According to Zhao et al., this pattern reflects an “indirect-only mediation,” where online avoidance motivation links social loneliness to online shopping. Socially lonely individuals showed weaker avoidance motivation and thus engaged less in online shopping, suggesting their loneliness did not drive them to escape offline discomfort through online behaviours. This challenges the assumption that lonely individuals typically rely on avoidance-driven online coping [148].

As noted in literature review part, lonely individuals often avoid social anxiety, fear of judgment, and stress in public [103]. The online environment, with its perceived safety and control, can provide alternative social spaces that foster connection and temporarily reduce loneliness [149]. Studies consistently show a positive link between loneliness and digital avoidance among young adults [150] and university students [151].

However, these findings may overlook the multidimensional nature of loneliness or reflect the partial effects of avoidance motivation. Although digital avoidance can alleviate the discomfort of stress, boredom, or social isolation in the short term, research has shown that it may have long-term consequences for individuals’ mental health, social engagement, and productivity [150]. In this study, an important finding was that socially lonely individuals often lack not only



real-life social connections but also a sense of trust and belonging in online spaces. Their loneliness is more often expressed through withdrawal, silence, and passive behaviour patterns [152]. McCarthy et al. [153] also found strong associations between social loneliness and introversion, social isolation, and low engagement in online social networks.

Importantly, qualitative data from open-ended responses further support this conclusion. For instance, one participant with social loneliness noted, “When I am lonely, I feel like I have no energy to go out,” while another stated, “I don’t want to see people even though I am lonely.” These statements reveal not only a deep sense of social disconnection but also a behavioural tendency toward closed-off states.

#### **5.4. Cultural Loneliness and the Indirect Drive Toward Online Shopping**

Cultural loneliness influences online shopping behavior, with online approach motivation serving as a mediator, aligning with the “indirect-only mediation” model proposed by Zhao et al. Specifically, individuals experiencing cultural loneliness turn to online shopping driven by an inner desire for connection, seeking belonging, familiarity, or cultural identity. This approach motivation is closely related to the cultural background of the participants.

Hofstede’s cultural dimensions theory [154] identifies the UK as a highly individualistic society emphasizing personal independence and self-expression [155]. By contrast, collectivist cultures, from which about 85% of this study’s participants originate, prioritise group harmony, often resulting in silence or withdrawal in uncomfortable interactions [156]. Asian students, in particular, display lower initiative and higher experiential avoidance in cross-cultural communication [157], frequently choosing silence or retreat when facing cultural discomfort [158]. The conflicting values between the UK and other countries create a mismatch for international students, triggering an internal drive for cultural compensation through familiar online behaviors [159].

In the open-ended responses collected in this study, many participants vividly described their experiences of cultural loneliness. One Chinese student shared: “During our group discussion, the local students were joking using British slang and school memes. I couldn’t understand them, so I just stayed silent.” A Nigerian PhD student mentioned that he was the only minority in his lab and no one talked to him, which made him feel excluded. Another student described he couldn’t understand a café employee and didn’t have internet access on their phone, leaving him feeling helpless. At the same time, many students also expressed a deep sense of homesickness and longing for their home culture. One student said, “I cooked a dish from my hometown, but there was no one to share it with.” Another student remarked, “My friends back home are posting pictures of their gatherings, but I can’t be there.” This reflects a deep sense of group belonging and the emotional pain of being excluded from familiar social circles.

Among participants experiencing cultural loneliness, those who were younger, had better English proficiency, and possessed stronger digital literacy were more likely to exhibit online approach motivation.

### **6. Recommendations and Conclusion**

#### **6.1. Summary of Key Findings**

Drawing from both statistical data and participants’ narrative responses, several key insights emerged: firstly, the study found that all participants reported experiencing some degree of loneliness. Social loneliness was particularly prevalent among international students in the UK, followed by cultural loneliness and emotional loneliness. Some students even experienced two or all three types of loneliness simultaneously. Demographic factors such as gender, age, academic level, duration of stay, relationship status, and living situation influenced the type and intensity of loneliness.



Secondly, the study found that all three types of loneliness influenced online shopping behaviour indirectly through different forms of online motivation. Emotional and cultural loneliness were both associated with higher online approach motivation, where students actively turned to digital platforms to seek comfort, familiarity, or emotional engagement. In contrast, social loneliness was associated with lower online avoidance motivation, which reduced the likelihood of using online shopping as an escape strategy, showing students often showed passive withdrawal and disengagement from digital environments.

Moreover, individual differences influenced how each type of loneliness shaped online behavior. Younger participants showed both online approach and avoidance motivations, highlighting age's dual role in shaping digital coping. Higher English proficiency was linked to stronger online approach motivation under cultural loneliness, while lower proficiency predicted greater online avoidance motivation in socially lonely individuals. Female participants showed stronger approach motivation when emotionally lonely. Digital literacy consistently predicted stronger approach motivation across emotional and cultural loneliness.

## **6.2. Recommendations**

This study identifies three types of loneliness, emotional, social, and cultural, that shape the behaviours of international student consumers through different motivations. For businesses, understanding these patterns is key to developing more targeted and effective marketing strategies.

### **6.2.1. Emotional Loneliness and Consumer Behaviour**

For individuals experiencing emotional loneliness, particularly younger and female users, online shopping often serves as an important way to compensate for emotional emptiness and to seek a sense of safety, familiarity, and control. E-commerce platforms can enhance recommendation systems by adding emotional tags such as “warm,” “companionship,” or “from home”, and increase product appeal through brand storytelling, customer reviews, and videos to stimulate emotional resonance and attachment. In addition, interactive features, such as live streaming with host, viewer engagement, lively atmospheres, and promotional activities, can strengthen social presence and enhance purchase intention, while digital companionship packages that include virtual characters or mascots can help build virtual intimacy.

From a visual and content design perspective, research has shown that products with “baby-like cuteness” are more emotionally comforting than those with “strange cuteness”; densely arranged product visuals can provide users with a sense of fullness and help reduce feelings of emptiness; and lonely consumers are more likely to prefer angular shapes, possibly because they symbolize clear structure and boundaries. By combining emotional, visual, and interactive design, e-commerce platforms can not only more effectively motivate emotionally lonely consumers to shop but also strengthen their emotional connection with the brand.

### **6.2.2. Social Loneliness and Silent Consumers**

Given that individuals with social loneliness often lack a sense of trust and belonging in both real-life and online environments, and their behaviour tends to be more withdrawn, silent, and passive, they are likely to be “silent observers”, who rarely express their needs directly, but they may take the company's response style and complaint handling as signals to guide their future behaviour. They may also be “lurkers” who do not often leave comments but are usually high-quality consumers. Traditional marketing strategies that rely on social engagement and emotional appeal are often ineffective for reaching this group.

Therefore, businesses need try to create a pressure-free social environment by designing low-interaction, highly autonomous, and less distracting shopping experiences to encourage user participation. For example, customers can choose products in advance on the app and simply pick them up in store. This reduces human contact and uncertainty, allowing users to complete

their purchases independently, giving them a stronger sense of control and comfort. Furthermore, platforms can promote a culture of casual mentorship, where users gain support, confidence, and motivation through observation, imitation, or encouragement from others, without being forced. This kind of environment can help activate silent or marginalized users and make them more willing to participate in a safe and emotionally supportive setting.

At the same time, we should also recognize that for some socially isolated users, “not expressing” is itself a form of participation. Silence does not mean absence. These users still connect with the platform through browsing, viewing, or saving content. As such, platforms should build a more delicate, low-interference, and empathetic system of engagement. For example, reducing excessive notifications and information overload, lowering the pressure to interact, and using more neutral, calm, and understanding language instead of overly enthusiastic marketing phrases.

### **6.2.3. Cultural Loneliness and Identity Reconstruction**

In the context of cultural loneliness, international students often actively seek familiar cultural elements to ease discomfort and reconstruct their sense of identity. Among these, food is the most accessible cultural element. Cooking or purchasing hometown food not only meets physical needs but also evokes cultural memories and provides emotional support during the adjustment process. Language is another key factor. Many students prefer using native-language reviews, watching videos in their mother tongue, or engaging in communities that share their language, in order to regain cultural identity and a sense of security. In addition, culture is frequently expressed through soft elements such as aesthetics, website layout, and interaction rules. For example, Chinese characters function as a unique meaning-making system that can represent and reinforce social relationships.

Therefore, businesses can leverage food as a core cultural medium by offering home-country ingredients, creating “taste of home” sections, or launching cultural meal boxes during holidays or enhance engagement through brand storytelling, sharing customer experiences, and showcasing student-generated cooking content. At the language level, platforms may implement features such as language-based review filters, recommend creators from users’ home countries, or provide bilingual product descriptions. For digital platform design, incorporating visual elements that embody cultural identity, such as Chinese characters, traditional patterns, or culturally symbolic colors, can create a familiar and emotionally safe space. Such features not only enhance cultural comfort but also strengthen brand connections and encourage active participation.

### **6.2.4. University-Level Interventions for Loneliness**

Apart from helping businesses segment user groups and develop more targeted strategies based on different types of loneliness, universities and students themselves can get benefits from this study. Practical interventions at the campus level are especially meaningful. Events such as international nights and food festivals are not only opportunities to showcase cultural diversity, but also effective ways to reduce cultural loneliness and encourage students to express their cultural identities. For emotional loneliness, universities can launch holiday companionship programs during emotionally sensitive times like major festivals. These may involve inviting staff or domestic students to pair with international students through cultural buddy groups or short-term home visits. For socially withdrawn or silent students experiencing social loneliness, universities can design more inclusive low-pressure social spaces to reduce social anxiety and lower participation barriers. For example, quiet reading corners, puzzle areas, DIY workshops, or book clubs that do not require much verbal interaction can be helpful. In addition, schools can set up question stations or advice-sharing cards in places like libraries or cafeterias to encourage students to seek help or share thoughts anonymously. These indirect

interactions allow students to build social bonds in a safe and comfortable way, without the pressure of active engagement.

#### **6.2.5. Student Self-Strategies for Coping with Loneliness**

From the students' own perspective, having a clear understanding of emotional, social, and cultural loneliness can help them better recognize their mood state and choose more effective coping strategies. When facing emotional loneliness, they may choose to strengthen connections with loved ones or actively seek emotional substitutes, like brands, pets, or virtual characters. To cope with social loneliness, students may engage in low-pressure social settings that progressively foster social confidence. In the case of cultural loneliness, consuming mother-tongue content, purchasing home-country products, or celebrating traditional holidays can serve as a form of cultural compensation and identity reconstruction. Being able to classify and respond to different types of loneliness not only helps students regulate their emotions more actively but also encourages healthier consumption habits and lowers the risk of impulse buying or overconsumption.

### **6.3. Conclusion**

This study offers important theoretical insights and practical implications for both business marketing and higher education. It examined how emotional, social, and cultural loneliness shape international students' shopping channel preferences in the UK through the lens of compensatory consumption theory and approach-avoidance motivation theory. The results demonstrate that loneliness plays a critical role in driving compensatory behaviours, operating through approach or avoidance motivations and particularly evident in online platforms. Overall, the findings provide strong evidence that loneliness is a multidimensional construct with distinct implications for consumer behaviour.

Despite these contributions, several limitations remain. First, cultural loneliness currently lacks a widely accepted and standardized measurement scale. This study also shows that cultural loneliness is highly correlated with emotional loneliness, and their associations with motivations and online shopping behaviours appear strikingly similar, making it difficult to distinguish between them. Further work is needed to develop reliable and valid instruments that capture the unique dimensions of cultural loneliness.

Second, the findings reveal associations only between loneliness and online shopping behaviour. How loneliness influences offline consumption, such as in-store shopping or other social consumption activities, remains unclear and needs further investigation.

Lastly, while the inclusion of qualitative questions provides some supplementary insights, the cross-sectional survey design still limits the ability to capture changes in the relationship between loneliness and consumer behaviour. Future longitudinal research should investigate how emotional, social, and cultural loneliness influence consumer behaviour as circumstances and contexts evolve.

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