Journal of Infrastructure, Policy and Development 2024, 8(14), 10037.
https://doi.org/10.24294/jipd10037

Article

Scale of extrinsic factors motivating students to pursue online graduate programs: The case of business schools in Latin America

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CITATION

Forero-Henao S, Areiza-Padilla JA, Veas-Gonzalez I, et al. (2024). Scale of extrinsic factors motivating students to pursue online graduate programs: The case of business schools in Latin America. Journal of Infrastructure, Policy and Development. 8(14): 10037. https://doi.org/10.24294/jipd10037

ARTICLE INFO

Received: 4 November 2024
Accepted: 14 November 2024
Available online: 6 December 2024

Abstract: This study developed a specific scale to measure the impact of extrinsic motivations on students' decisions to pursue online graduate programs at business schools in Latin America. Using a mixed-methods approach, the research proceeded in three stages. In the first stage, the construct was defined by identifying key extrinsic factors motivating students to enroll in online graduate programs, followed by the creation and initial validation of the scale in Colombia. The second stage involved testing the scale in Chile to determine its cross-cultural applicability. In the third stage, the scale's predictive validity was confirmed, demonstrating its effectiveness in explaining how extrinsic motivations influence students' intentions to enroll in online graduate programs. The findings indicate that the scale, composed of five dimensions—Cost Reduction, Ability to Study from Any Location, Control Over Learning Pace, Flexibility to Balance Study and Work, and Avoiding Commuting Time—is a reliable predictor of student preferences and intentions in online graduate education. The final scale includes 25 items across these dimensions, measuring extrinsic factors through items related to flexibility, time savings, and global accessibility. Validation in two Latin American countries confirms the scale's relevance across diverse cultural contexts, enhancing its applicability within the region. This study provides empirical evidence that extrinsic motivation is a key determinant of students' intentions to enroll in online programs in developing countries. It confirms that extrinsic motivations reflect a preference for flexible learning options compatible with students' lifestyles and professional needs, linked to their beliefs about time management, professional advancement, and career opportunities associated with earning a graduate degree.

Keywords: extrinsic motivation; online postgraduate programs; business schools; Latin America; education growth

1. Introduction

Before the COVID-19 pandemic, virtual education was integrated sporadically into business schools, typically through hybrid teaching methods that allowed occasional online classes under special circumstances, providing some flexibility in the educational experience (Alsharah and Ghura, 2023). In this way, online learning was included in business school curricula as a complement to face-to-face instruction, mainly through tools such as business simulators and certain online learning platforms (Krishnamurthy, 2020). However, most business schools did not consider virtual education as the primary teaching model; there was also a

widespread perception that online education lacked the same rigor, quality, and depth as traditional in-person education (Owais and Atipamula, 2021).

While COVID-19 resulted in one of the worst pandemics of the modern era, its impact on technology and education accelerated the adoption and acceptance of virtual education as a regular, rather than sporadic, teaching method. This shift was largely due to the use of virtual education as a strategy to maintain educational continuity after governments worldwide imposed mandatory lockdowns to mitigate the spread of COVID-19, restricting in-person learning. Latin America was no exception in this adaptation process.

Business schools in Latin America were also forced to quickly migrate to a fully digital environment, which led to a significant transformation in teaching and learning methods (Areiza-Padilla and Galindo-Becerra, 2021). Virtual education went from being a sporadic method to becoming the only option for academic activities during quarantine, resulting in a rapid technological revolution driven by the necessity of online classes. This change significantly transformed the way business schools conducted their educational processes (Black et al., 2020).

Furthermore, this shift towards online classes presented an opportunity to expand the geographic reach of educational institutions, which realized that, through the internet, they could reach a wider audience, potentially anywhere in the world. Consequently, a large-scale transformation began, adapting various undergraduate and graduate programs to more flexible models that included virtual learning as a central component. Prior to COVID-19, such transformations were difficult to implement virtually, or the perceived need for online academic programs was minimal (Almaghaslah and Alsayari, 2020; Tabatabai, 2020).

However, this shift also highlighted various inequalities and challenges regarding technological and logistical issues in the educational sector, which became increasingly apparent as educational institutions adapted to diverse tools and platforms to ensure the continuity of online learning (Wilcha, 2020). Business schools traditionally based their academic processes on three pillars—interaction, teamwork, and networking—all of which were conducted in person as an integral part of the learning experience (Krishnamurthy, 2020). Yet, during the lockdowns, business schools turned to technological tools such as Microsoft Teams, Zoom, Meet, and other platforms to conduct online classes, initially adapting the content of their face-to-face programs to an online format (Wilcha, 2020).

Through these platforms, the goal was initially to replicate key elements of in-person teaching, such as case studies, real-time content discussion, and business simulations, but now in an online format. Over time, however, the virtual modality generated its own unique challenges regarding the quality of the educational experience and the active participation of students through technological tools (Murphy et al., 2020). For instance, some studies identified concerns about the quality of online learning due to the lack of physical interaction, which affected the educational experience for some students, leading to feelings of uncertainty, anxiety, and demotivation. In certain cases, students reported a perception of an incomplete learning experience in the virtual setting (Davis et al., 2022).

Additionally, other studies have observed that the effectiveness of virtual education varies based on students' characteristics, their level of commitment, and

the strategies employed by institutions to foster engagement in online classes (Başal and Eryılmaz, 2020). In this context, the level of adaptation by students and instructors has been a crucial factor in the efficacy of virtual teaching (Tabatabai, 2020). Most instructors had to abruptly modify their teaching methods and quickly learn to use new digital tools to maintain interaction and student engagement online, with mixed results (Owais and Atipamula, 2021).

Similarly, the sudden shift from face-to-face to virtual learning exposed certain inequalities within this modality, particularly concerning students' and instructors' access to technological infrastructure and stable internet connections, which impacted the academic process (Favale et al., 2020).

Considering these aspects, this research identifies certain technological, cultural, pedagogical, and socioeconomic challenges present in developing countries, as noted in the scientific literature, regarding the implementation and development of online classes. These challenges are described in detail below:

1.1. Limited technological infrastructure and training

One of the main challenges facing online education in Latin America is the lack of adequate infrastructure, including limited access to high-speed internet and necessary technological devices. Poor connectivity hinders smooth interaction between students and teachers, directly affecting the educational experience. Studies suggest that this lack of technological resources contributes to a negative perception of online education, particularly in contexts where face-to-face education offers a more enriching and direct experience. Additionally, many students and teachers in developing countries lack familiarity and the necessary skills to effectively use online learning technologies. Low digital literacy can be a barrier to the successful implementation of virtual education, requiring additional training for participants to adapt to this environment and its tools. This limitation reduces their ability to create interactive and meaningful learning experiences, negatively impacting the perceived quality of online education (Matee et al., 2023; Rahimi et al., 2022; Salas-Pilco et al., 2022).

1.2. Limited interaction and participation

The absence of face-to-face interaction can negatively impact learning quality. In developing countries, students face challenges in staying motivated and engaged in a virtual environment, particularly due to home distractions and inadequate resources to facilitate effective education. Additionally, interaction between students and instructors is a crucial factor in educational quality. Face-to-face education allows for direct and spontaneous communication, promoting a more comprehensive learning experience. However, in the online modality, this interaction is reduced, leading to decreased student satisfaction and engagement. This lack of personal interaction is seen as a barrier, especially in disciplines requiring practical learning or teamwork.

Online education has also had a psychological impact on both students and instructors. Feelings of loneliness and isolation, coupled with increased anxiety and stress, have been common challenges. This issue is particularly significant in Latin

America, where the pandemic exacerbated socioeconomic inequalities, increasing stress levels and affecting perceptions of online education as a viable and effective alternative (Hendricks and Mutongoza, 2023; Sato et al., 2022).

1.3. Cultural attitudes and perception of quality

Cultural attitudes toward online education can be a challenge. In many developing countries, online education is perceived as a "second-rate" option compared to face-to-face education. This perception can lead to lower acceptance and engagement from students, parents, and teachers, impacting the quality and effectiveness of virtual instruction. In Latin America, specifically, education has historically been a social activity that relies heavily on human interaction, and many students continue to value in-person educational experiences. Surveys show that students in this region often prefer face-to-face education, perceiving it as providing higher teaching and learning quality. Limited familiarity with online education and skepticism towards this modality contribute to its perception as inferior (Salas et al., 2022; Sato et al., 2022; Stanley and Montero Fortunato, 2022).

In this context, several challenges faced by business schools in Latin America become evident, highlighting the need for innovative solutions to improve technological infrastructure, train students and faculty, and develop pedagogical approaches tailored to local realities to enhance the online learning experience for students. However, existing literature analyzing these issues focuses primarily on undergraduate studies, while studies that examine online education exclusively for postgraduate students remain scarce. This research, therefore, offers a novel academic contribution by creating a scale to identify extrinsic factors that explain the rise of online graduate courses in business schools following the COVID-19 lockdowns.

In the realm of virtual postgraduate education, students tend to be more autonomous and motivated, as they seek to advance their professional careers and apply acquired knowledge to real-world work situations. Online education allows students to manage their time effectively, balancing academic commitments with other responsibilities, such as work and family. Additionally, the flexibility offered by online learning is a crucial factor for students when selecting graduate programs, as it allows them to study from any location at convenient times, fostering a healthier balance between personal, professional, and academic life (Martinho et al., 2018). Online education also promotes the development of essential social skills, such as self-regulation and motivation, which are vital for graduate students in business. Furthermore, it enhances students' abilities in acquiring, reviewing, and applying knowledge, thereby improving their career prospects, particularly in the digital business sector (Neștian et al., 2021; Tseng et al., 2019).

In recent years, there has been a notable increase in online graduate programs at business schools across Latin America. The evolving dynamics of the labor market, coupled with technological advancements, have driven a significant shift in educational preferences, especially at the graduate level. Online education presents new opportunities for professionals seeking to enhance their skills and advance their careers without the constraints of traditional in-person programs. In this context,

extrinsic motivations play a crucial role in students' decisions to pursue online graduate programs.

Extrinsic motivations include external factors such as improving job prospects, achieving higher social and professional status, and benefiting from the convenience and flexibility of online education. These external motivations also influence the growing demand for online programs, particularly in the field of business, where competition and the need for continual knowledge updates are essential (Arar et al., 2017; Gustiani et al., 2022; Kotera et al., 2023; Neștian et al., 2021; Zainuddin et al., 2021).

Thus, pursuing an online graduate degree in business encompasses various motivations that can be classified into two main categories: intrinsic and extrinsic motivations. Within these categories, students often identify several factors driving their choice of this educational modality. This article introduces a new scale that measures extrinsic motivations to explain the rise of online graduate programs in business schools across Latin America, providing an innovative academic perspective. This research seeks to better understand the primary reasons professionals choose online education as an option for academic and professional development.

The results of this study will not only offer a deeper perspective on the behavior of graduate students but also provide valuable insights for educational institutions to adapt their online programs to the needs and expectations of a diverse and constantly evolving student population.

2. Literature review

2.1 Extrinsic factors

2.1.1. Cost reduction

Online education helps reduce costs beyond tuition by eliminating the need for transportation and reducing expenses on physical materials, benefiting students with financial limitations (Yoon, 2019). Lee and Jung (2022) found that the convenience of online learning increases student satisfaction, as they value the time and cost savings associated with reduced commuting. Beer et al. (2022) examined how online flexibility enables institutions to offer accessible, low-cost learning models that meet current student needs.

2.1.2. Ability to study from any location

Online education allows students to attend classes from any location with internet access, a crucial advantage for those in rural or international settings. Houlden and Veletsianos (2019) argue that the "anytime, anywhere" promise of online learning democratizes access to education, though it also poses equity challenges when relying on self-directed learning without contextual support. Additionally, Asio et al. (2021) emphasize how access to devices and internet connectivity has enabled students to continue their education remotely during the pandemic. Naidu (2019) also explores how online technologies expand learning opportunities, allowing students to participate in education from remote locations. Thus, the ability to attend classes without needing to commute to a physical campus

provides greater accessibility, particularly valuable for students in remote or international areas.

2.1.3. Enhanced control over learning pace

Online education enables students to progress at their own pace, revisiting content as needed—a feature especially valuable for those who prefer autonomous learning. According to Soffer et al. (2019), students use the flexibility of online courses to personalize their study pace, which improves academic achievement and fosters personalized learning. Müller and Mildenberger (2021) show that hybrid and online learning environments yield outcomes comparable to in-person education, demonstrating that flexibility does not negatively impact learning. Nunes et al. (2022) further suggest that flexible course structures promote motivation and meaningful learning by allowing students to manage their progress in a personalized manner.

2.1.4. Flexibility to balance study, work, and personal life

Online flexibility allows students to balance their studies, work, and personal life—an essential advantage for those with job or family commitments. Working students appreciate the ability to study without leaving their jobs, integrating their studies with professional and personal responsibilities. Xavier and Meneses (2021) note that while online learning flexibility can increase dropout rates, it is beneficial for students who need to balance studies with other aspects of their lives. Deeson (2005) found that students value flexibility as it enables them to reconcile their education with work and family responsibilities. Cayetano and Autencio (2021) emphasize that flexibility during the pandemic was crucial for maintaining academic continuity without neglecting other obligations.

2.1.5. Avoiding commuting time

Online education eliminates the need to commute to a physical campus, saving time and reducing the stress associated with transportation. Fischer et al. (2021) observed that by removing commuting times, students can progress more efficiently toward their degrees. In the context of the pandemic, Lee and Jung (2022) found that saving on commuting time enhanced students' academic performance and course satisfaction. Kariya (2023) discusses how the flexibility of distance learning in engineering allows students to dedicate more time to study rather than commuting, improving educational efficiency. By removing the need for transportation to a physical location, students save time they can dedicate to studying or other activities, which is particularly attractive in urban environments.

3. Construct development methodology

This research employed a mixed-methods design to explore the conceptualization of extrinsic factors driving students' intentions to pursue online graduate programs within Latin American business schools. The study subsequently developed a scale to measure these factors, assessing its dimensionality, reliability, and validity.

In the first stage, the construct was developed to identify and define key extrinsic factors explaining the growth of online graduate programs. In the second

stage, the scale was validated outside of Colombia to ensure applicability across cultural contexts; in this case, the scale was also validated in Chile. In the third stage, predictive validation of the scale was conducted.

3.1. First stage: Scale development

In the initial stage, the research was conducted in Colombia to create a scale identifying extrinsic motivations influencing students' intentions to enroll in online graduate programs in Latin American business schools. The expansion of online graduate programs in Colombia reflects an increasing demand for this educational format, largely driven by professionals seeking to balance academic advancement with work commitments.

As an initial activity, two online focus groups were conducted, each with 10 participants (5 men and 5 women) who were Colombian students enrolled in online graduate programs at business schools. This qualitative exploration aimed to identify extrinsic factors motivating the choice of online learning, using open-ended questions such as, "Do you think online learning facilitates your career advancement?" "What advantages do you see in terms of cost and time with the online format?" and "What factors motivate you to choose an online graduate program over an in-person one?"

Key themes emerged from this activity, particularly regarding the flexibility sought in online graduate studies. Subsequently, two experts conducted a Delphi process to develop the content of the scale, followed by an inter-judge reliability test. From the responses obtained, 38 items were identified, covering factors such as accessibility, schedule flexibility, and time savings.

To ensure clarity and content validity, a refinement process was carried out, involving a third researcher who had not previously participated in the study. After reviewing each item, eight items were removed due to concerns about validity in the context of extrinsic motivation, resulting in a final scale of 30 items. A questionnaire was then constructed based on this refined scale.

Responses to the questionnaire were measured using a seven-point Likert scale, with 7 representing "strongly agree" and 1 "strongly disagree." Data were collected from a convenience sample of graduate students enrolled in online programs at various Colombian business schools, resulting in a final sample of 307 participants, composed of 43% women (n = 132) and 57% men (n = 175).

Data were analyzed using Churchill's (1979) procedure, where the total score for the 30 items was correlated with each item's score to assess construct coherence. Internal consistency of the items was significant (correlations above 0.58), supporting the retention of all items.

The 30 extrinsic motivation items were then subjected to a principal component analysis, which revealed that the best interpretative solution grouped them into five factors. Following a Varimax rotation of the five-factor solution, one item was removed due to a lack of significant loading with any factor, resulting in 29 items.

These remaining 29 items were subjected to another factor analysis, yielding a clear solution. The values for Bartlett's test ($p < 0.01$) and the KMO coefficient (0.928) indicated that factor analysis was an appropriate analytical procedure for

these data (Norusis, 1985).

Since extrinsic motivations may evoke different meanings across participants, an additional analysis was conducted to test the stability of the five-factor solution. Principal component analyses (with Varimax rotation and no restriction on the number of factors) were performed on two subsamples from the general sample (n = 307): men (n = 175) and women (n = 132). As a result, three items were removed due to low or cross-loadings, leaving a final set of 26 items.

These 26 items showed stable roles, grouped as follows:

- Four items for "Cost Reduction".
- Five items for "Ability to Study from Any Location".
- Six items for "Control Over Learning Pace".
- Five items for "Flexibility to Balance Study and Work".
- Six items for "Avoiding Commuting Time".

To verify the construct's dimensional structure, a confirmatory factor analysis (CFA) was conducted. CFA results indicated satisfactory fit, with goodness-of-fit statistics as follows: GFI = 0.96, adjusted GFI (AGFI) = 0.84, normed fit index (NFI) = 0.90, incremental fit index (IFI) = 0.97, comparative fit index (CFI) = 0.88, and root mean square residual (RMR) = 0.07.

These results suggest that the measurement model adequately fits the sample data. Psychometric properties were also satisfactory: Cronbach's α values exceeded the recommended 0.7 level (Nunnally and Bernstein, 1994), ranging from 0.704 to 0.870, and AVE scores were above the recommended 0.45 threshold for new scale development, ranging from 0.619 to 0.765 (Netemeyer et al., 2003). Details are presented in **Table 1**.

Convergent validity was demonstrated through the critical ratios (t-tests) for factor loadings (Hatcher, 1994), with all CFA loadings found to be highly significant (t-values ranging from 13.87 to 18.12), supporting the convergent validity of all items used to measure the construct.

Table 1. Confirmatory factor analysis.

Constructs and items	**Std coefficient**	**Critical ratios**
F1. Cost Reduction (α = 0.704; AVE = 0.619)		
Studying online allows me to reduce living, transportation, and/or accommodation expenses.	0.57	13.87
Virtual classes help me reduce spending on physical materials.	0.74	18.12
Studying online is an affordable alternative to continue my education.	0.79	15.46
Online classes enable me to invest in other needs due to cost savings.	0.85	15.90
F2. Ability to Study from Any Location (α = 0.729; AVE = 0.765)		
The online format allows me to study while traveling or on the move.	0.61	13.98
I value the freedom to study regardless of my geographic location.	0.79	17.43
Studying online makes it easier to combine studies with other commitments in different locations.	0.77	17.73
I can access my studies independently of geographic restrictions.	0.85	16.53
I feel that studying from anywhere gives me greater independence.	0.80	17.69

Table 1. (*Continued*).

Constructs and items	Std coefficient	Critical ratios
F3. Control Over Learning Pace (α = 0.814; AVE = 0.731)		
I feel more comfortable studying at my own pace in a virtual class.	0.76	14.93
In online classes, I can review the material as many times as I need.	0.89	17.11
Studying online allows me to pause and revisit more difficult concepts.	0.72	15.38
I can adjust my study pace according to the difficulty of each topic.	0.75	17.49
The online format lets me organize my time according to my availability.	0.59	16.94
I can spend more time on the topics I consider important.	0.74	17.89
F4. Flexibility to Balance Study and Work (α = 0.870; AVE = 0.711)		
The online format allows me to work and study at the same time.	0.61	17.40
Studying online helps me balance my work and academic life.	0.73	17.48
I can better manage my work responsibilities with the flexibility of online education.	0.78	15.66
Online flexibility enables me to focus on my career without affecting my studies.	0.75	17.54
The online format helps me maintain an adequate balance between work and study.	0.84	17.94
F5. Avoiding Commuting Time (α = 0.734; AVE = 0.643)		
Studying online allows me to avoid commuting time.	0.71	15.56
I can use travel time for other productive activities.	0.81	14.76
Not having to commute allows me to organize my time better.	0.78	15.43
Time savings is a key factor in my preference for online education.	0.69	15.92
Studying online enables me to use my time more efficiently.	0.74	17.33
The absence of commuting is a significant advantage for me.	0.79	17.27
Path coefficients	0.74	21.39
Fit indices		
X	237.67	
GFI	0.96	
AGFI	0.84	
NFI	0.90	
IFI	0.97	
CFI	0.88	
RMSEA	0.07	

Source: author's own compilation.

3.2. Second stage

Previous studies recommend testing any new scale across different cultural contexts to uncover the influence of various cultural dimensions that might result in significant differences, if present (Bond, 1994). Considering this, we proceeded to assess the generalizability of the proposed scale in a country other than Colombia. Thus, a replication study was conducted in another Latin American country, Chile, which was selected due to its shared characteristics with Colombia, including language, precolonial history, and status as a developing economy.

Data collection was carried out through an online survey targeting graduate students enrolled in online programs at business schools in Chile. Following this

process, a valid sample of 206 responses was obtained, with 61.7% male (n = 127) and 38.3% female (n = 79) participants.

The latent structure of the new scale was assessed using confirmatory factor analysis (CFA) across samples. The measurement model in Chile showed the following fit indices: GFI = 0.90, AGFI = 0.83, NFI = 0.97, IFI = 0.99, CFI = 0.91, and RMSEA = 0.08. These results indicate that, overall, the model fits within accepted boundaries (Kline, 1998), thus supporting the robustness of the proposed scale. The results for convergent validity in the Chilean sample show positive coefficients for Cronbach's α (ranging from 0.82 to 0.85) and AVE (ranging from 0.47 to 0.54), confirming the psychometric properties of the new scale.

A psychometric test for configural and metric invariance of the scale was performed to compare responses from students in each country, as suggested by Byrne (2001). The fit indices supported the presence of configural invariance, indicating that students interpreted the items on the new scale similarly across countries.

To test for metric invariance, all factor-loading coefficients were constrained to be equal across samples. This procedure increased the χ^2 value to 419.40, adding 20 degrees of freedom. The results showed that the difference in χ^2 (χ^2= 29.81; df = 20) was not statistically significant (p = 0.11), thus supporting metric invariance. Consequently, the Chilean sample suggests that groups are not different at the model level, and the items used to measure the constructs hold the same meaning across samples. Additionally, all correlations between constructs were lower than the individual construct α coefficients, indicating good discriminant validity for all constructs.

3.3. Third stage

Following this, a case study was conducted to assess the predictive power of the scale concerning students' extrinsic motivations to pursue an online graduate program. According to the theory of planned behavior, when an individual holds strong belief about an object or idea that encourages a behavior, they are more likely to have a positive attitude and intention toward it (Ajzen, 1991; Ajzen and Fishbein, 1980). Thus, this study aimed to validate the new scale and confirm its predictive power in understanding extrinsic motivations that drive students to pursue an online graduate degree.

Based on the reviewed literature, we hypothesized that students with high levels of extrinsic motivation would show a preference for the online modality in their graduate studies. This hypothesis is stated as follows:

H1: Higher levels of extrinsic motivation are associated with a greater intention to pursue an online graduate program.

A multi-stimulus response approach was employed to validate the external validity of this new scale by testing its effect on students' preferences and intentions to pursue online graduate studies. Stimuli selection was conducted via a new focus group of graduate students enrolled in online programs, using criteria such as program popularity, university reputation, academic content, and faculty profile.

A questionnaire was then constructed, combining measures of extrinsic

motivation with measures of "intention to study online" using a seven-point Likert scale. Data collection was carried out through an online survey with a convenience sample of online graduate students, resulting in a total sample of 167 participants: 43.7% female (n = 73) and 56.3% male (n = 94).

Following the CFA process, one item with a low standardized loading coefficient was detected in the "Avoiding Commuting Time "dimension and was subsequently excluded. The removed item was: "Time savings is a key factor in my preference for online education." After this item was excluded, CFA results indicated adequate fit indices for the scale. Additionally, all fit indices were within acceptable levels: GFI = 0.98, AGFI = 0.843, NFI = 0.89, IFI = 0.92, CFI = 0.96, and RMSEA = 0.08. Psychometric properties were also satisfactory across all dimensions: Cost Reduction (α = 0.718; AVE = 0.703); Ability to Study from Any Location (α = 0.730; AVE = 0.718); Control Over Learning Pace (α = 0.710; AVE = 0.717); Flexibility to Balance Study and Work (α = 0.779; AVE = 0.756); Avoiding Commuting Time (α = 0.744; AVE = 0.723).

All five dimensions of the scale showed significant positive correlations with the "intention to pursue an online graduate program." Thus, higher levels of extrinsic motivation corresponded to a greater intention among students to pursue online graduate studies.

To assess the effect of the new scale on students' intentions regarding online graduate programs, statistically significant correlation coefficients were found: r = 0.57 for "Cost Reduction" ($p \leq 0.01$); r = 0.50 for "Ability to Study from Any Location" ($p \leq 0.01$); r = 0.47 for "Control Over Learning Pace" ($p \leq 0.01$); r = 0.53 for "Flexibility to Balance Study and Work" ($p \leq 0.01$); and r = 0.58 for "Avoiding Commuting Time" ($p \leq 0.01$). These results support Hypothesis 1 (H1) and provide strong evidence for the predictive validity of the scale.

4. Discussion and implications

This study developed a specific scale to measure the impact of extrinsic motivations on students' decisions to pursue an online graduate program at business schools in Latin America. The research employed a mixed-methods approach in three stages. In the first stage, the construct was developed, defining the extrinsic factors that motivate students to enroll in online graduate programs and creating and validating the scale in Colombia.

The second stage involved validating the scale in Chile to determine its applicability across different cultural contexts. In the third stage, the predictive validity of the scale was confirmed, assessing how well it explains extrinsic motivations and their influence on students' intentions to enroll in online graduate programs.

Findings indicated that the scale, encompassing five dimensions, is an effective predictor of students' preferences and intentions to enroll in online graduate programs. The scale measures extrinsic factors through items related to students' positive attitudes toward flexibility, time savings, and accessibility to online programs from anywhere in the world. These five dimensions are labeled in the study as:

1) Cost Reduction
2) Ability to Study from Any Location
3) Control Over Learning Pace
4) Flexibility to Balance Study and Work
5) Avoiding Commuting Time

The final scale includes 25 items across these five dimensions (Appendix).

It was validated in two Latin American countries (Colombia and Chile), confirming that the identified extrinsic factors are applicable across diverse cultures and contexts within the region, thereby enhancing the scale's applicability and relevance.

This study provides empirical evidence that extrinsic motivation is a key determinant of students' intentions to enroll in online programs in developing countries. It confirms that extrinsic motivations reflect a student preference for flexible learning options that align with their lifestyles and professional needs. This preference is related to their beliefs about the value of time, professional status, and the career opportunities offered by earning a graduate degree. Therefore, when developing new programs, targeting extrinsically motivated students should be a primary focus for Latin American business schools offering online graduate programs.

These findings can assist marketing professionals and business schools in gaining a more comprehensive understanding of students' attitudes and preferences, ultimately helping them identify potential markets for online graduate programs. The identification of these markets can be guided by the concepts described in this study, particularly through the recognition of countries with high demand for flexible learning and recognized credentials.

Based on the findings, here are specific recommendations for higher education institutions in Latin America to implement changes in the design and marketing of online graduate programs:

4.1. Highlight cost-effectiveness in marketing

Since "Cost Reduction" is a key motivator, institutions should emphasize the financial benefits of online programs compared to traditional in-person options. Marketing materials should communicate potential savings on tuition, transportation, and other expenses associated with on-campus programs. Additionally, offering flexible payment plans or financial aid could further enhance the program's appeal.

4.2. Promote flexibility and accessibility

Given that the ability to study from any location and the flexibility to balance work and study are crucial factors, institutions should emphasize that their programs are designed to accommodate students' busy schedules. Advertising should target working professionals, highlighting the flexibility to learn from any location and manage study time alongside professional and personal responsibilities.

4.3. Develop programs with modular, self-paced structures

To address the preference for "Control Over Learning Pace," institutions can

design online programs with a modular structure that allows students to progress at their own pace. Offering courses that include breaks between modules or optional intensive sessions could cater to students who seek control over the intensity of their learning experience.

4.4. Emphasize time savings as a key benefit

As "Avoiding Commuting Time" is a significant factor, institutions should market the time efficiency of online programs, appealing to urban students or those with demanding schedules. Testimonials or case studies showing how students save valuable time by studying online could further reinforce this benefit.

4.5. Cultural relevance and regional adaptation

With confirmation of the scale's applicability across different Latin American cultural contexts, institutions should tailor their messaging to resonate with specific national and cultural nuances. For instance, in Chile, the message could emphasize work-life balance, while in Colombia, economic value might be a more compelling point. Understanding specific motivations in each market could enable more targeted and effective marketing campaigns.

4.6. Use career advancement as a core selling point

The study indicates that students view online graduate programs as a pathway for professional growth and status. Institutions should therefore emphasize how their programs align with current industry demands, showcasing how they provide relevant skills and credentials that employers value. Highlighting industry partnerships, testimonials from alumni in advanced positions, and graduate employment rates could strengthen this appeal.

4.7. Leverage digital marketing channels for broader reach

To effectively target extrinsically motivated students across Latin America, institutions should adopt digital marketing strategies that reach working professionals, such as targeted social media ads, webinars, and virtual open houses. Campaign messaging should focus on the five identified dimensions, with each element highlighting specific benefits that align with student motivations.

By integrating these strategies into program design and marketing efforts, institutions can better attract and retain students motivated by flexibility, cost savings, and career enhancement opportunities, thereby increasing their programs' appeal and effectiveness across Latin American markets.

5. Conclusion

The COVID-19 pandemic profoundly and rapidly transformed multiple aspects of daily life, especially within the educational field. One of the most significant changes was the rise of online graduate programs, particularly in business schools. This shift is attributed to a combination of factors, including adaptation to new circumstances, the growing importance of continuous education, and evolving student expectations. Many students now view online education as an opportunity to

acquire skills and credentials without compromising personal or professional commitments.

The closure of educational institutions during the pandemic forced universities and business schools to shift their programs to the digital realm. Initially, this transition was an emergency response to ensure continuity in education. However, as more robust platforms emerged and online teaching methodologies improved, both institutions and students began to recognize the inherent advantages of this modality. Online programs allow students to access quality education without the need to relocate or commute to university facilities. In Latin America, where distance and limited access to prestigious educational institutions can pose challenges, this modality has become an opportunity to democratize access to advanced business education.

Flexibility is another key factor in the popularity of online graduate programs. The ability to study from any location and adjust class schedules to meet work obligations has been especially appreciated by professionals. Recent studies show that this flexibility has made graduate education a more viable option for students, increasing enrollment in online business school programs that would otherwise have been inaccessible due to geographic or time constraints. Consequently, this study concludes that online courses enable students to manage their schedules more conveniently, a feature particularly valued by those with work and family responsibilities.

Despite its benefits, the online modality also faces challenges. The lack of face-to-face interaction can be a barrier for some students who value in-person networking and experiential learning opportunities in traditional programs. Additionally, online programs require a high level of self-discipline and time management, which can be challenging for students less accustomed to autonomous learning.

As business schools continue to enhance their online programs and teaching strategies, it is expected that hybrid modalities, combining both in-person and virtual elements, will become the norm. This model offers the best of both worlds, allowing students to benefit from the flexibility of online learning while accessing the interaction and networking opportunities that in-person education provides.

This study suggests that the future of education in business schools appears to lean toward a hybrid model, combining the strengths of both in-person and virtual teaching to provide a comprehensive and high-quality educational experience (Krishnamurthy, 2020). Achieving this balance will require business schools to invest in technological infrastructure, faculty training, and the development of innovative pedagogical strategies that maintain student engagement and participation (Areiza-Padilla and Galindo-Becerra, 2021; Ehrlich et al., 2020).

This research identifies that students in Latin America prioritize the flexibility in schedules and location offered by online graduate programs, valuing the convenience of adjusting their studies to align with professional and personal life.

To conclude, despite its theoretical contributions, this study presents certain limitations that suggest potential avenues for future research. One key limitation is the sample, as the study focuses solely on two Latin American countries, Colombia and Chile. Future research should thus aim to test the predictive validity of this scale

in other emerging markets, such as Peru, Mexico, and Argentina. Additionally, there is a need to extend this research to regions and cultural contexts beyond Latin America, such as North America, Asia, and Europe, to further validate and enhance the generalizability of the findings.

Additionally, in the exploratory phase of this research, a qualitative methodology was implemented through two focus groups, each consisting of 10 participants, totaling 20 individuals. This approach aimed to identify and define the extrinsic factors that motivate students to pursue an online postgraduate degree. However, we recommend that future studies include larger and more diverse qualitative samples, which would allow for the capture of a broader range of perspectives and thereby strengthen the robustness and generalizability of the identified factors.

Moreover, the use of self-reported data may introduce social desirability bias, as participants might respond based on what they perceive to be socially acceptable. We therefore suggest that future research employ complementary methods, such as observation or data triangulation, to minimize this bias and enhance the validity of the findings.

It should also be noted that this study captures student motivations at a single point in time. However, as discussed, a longitudinal design could provide additional insights into how extrinsic motivations may evolve over time in response to changes in the educational context and labor market demands. We recommend that future research consider longitudinal studies to examine variations in extrinsic motivations in relation to these factors

Author contributions: Conceptualization, methodology, software, validation, formal analysis, investigation, data curation, writing—original draft preparation, writing—review and editing, visualization, supervision, project administration, SFH, JAAP, IVG, KBP, DALB and MPB. All authors have read and agreed to the published version of the manuscript.

Conflict of interest: The author declares no conflict of interest.

References

Alsharah, H., & Ghura, H. (2023). Online learning in business education: key lessons from COVID-19 pandemic. Development and Learning in Organizations: An International Journal, 37(3), 4-6. https://doi.org/10.1108/DLO-08-2022-0171

Almaghaslah, D., & Alsayari, A. (2020). The effects of the 2019 novel coronavirus disease (COVID-19) outbreak on academic staff members: a case study of a pharmacy school in Saudi Arabia. Risk management and healthcare policy, 795-802.

Arar, K., & Abramowitz, R. (2017). Motivation and choice of teachers to pursue their postgraduate studies in an ethnic minority college. Journal of Applied Research in Higher Education, 9(4), 616-629. https://doi.org/10.1108/JARHE-03-2017-0020

Areiza-Padilla, J. A., & Galindo-Becerra, T. (2022). Quality as a drive-up digital teaching: Analysis of virtual classes in Colombian business schools. Heliyon, 8(6). https://doi.org/10.1016/j.heliyon.2022.e09774

Asio, J., Gadia, E. D., Abarintos, E. C., Paguio, D. P., & Balce, M. (2021). Internet connection and learning device availability of college students: Basis for institutionalizing flexible learning in the new normal. Studies in Humanities and Education, 2(1). https://doi.org/10.48185/she.v2i1.224

Beer, C., Roy, S., & Ames, K. (2022). Is it really flexible? Examining definitions of flexibility against contemporary practice in online education. Journal of Further and Higher Education, 47(2), 255–264. https://doi.org/10.1080/0309877X.2022.2106125

Berry, G. R., & Hughes, H. (2020). Integrating work–life balance with 24/7 information and communication technologies: The experience of adult students with online learning. American Journal of Distance Education, 34(2), 91-105. https://doi.org/10.1080/08923647.2020.1701301

Black, E., Ferdig, R., & Thompson, L. A. (2021). K-12 virtual schooling, COVID-19, and student success. JAMA pediatrics, 175(2), 119-120. doi:10.1001/jamapediatrics.2020.3800

Cayetano, M., & Autencio, P. (2021). Perception on the implementation of flexible learning in the time of COVID-19. Bedan Research Journal. https://doi.org/10.58870/berj.v6i1.30

Davis, L., Sun, Q., Lone, T., Levi, A., & Xu, P. (2022). In the storm of COVID-19: College students' perceived challenges with virtual learning. Journal of Higher Education Theory and Practice, 22(1).

Deeson, E. (2005). Online learning. British Journal of Educational Technology, 36(6), 699–700. https://doi.org/10.1111/j.1467-8535.2005.00547_7.x

Ehrlich, H., McKenney, M., & Elkbuli, A. (2020). We asked the experts: virtual learning in surgical education during the COVID-19 pandemic—shaping the future of surgical education and training. World Journal of Surgery, 44(7), 2053-2055. https://doi.org/10.1007/s00268-020-05574-3

Favale, T., Soro, F., Trevisan, M., Drago, I., & Mellia, M. (2020). Campus traffic and e-Learning during COVID-19 pandemic. Computer networks, 176, 107290. https://doi.org/10.1016/j.comnet.2020.107290

Fischer, H., Heise, L., Heinz, M., Moebius, K., & Spannagel, C. (2021). Increasing success in higher education: Relationships between online self-regulated learning, learning behavior, and academic performance. Distance Education, 42(2), 180–195. https://doi.org/10.1080/01587919.2021.1911627

Gustiani, S., Ardiansyah, W., & Simanjuntak, T. (2022). Motivation in online learning amidst Covid-19 pandemic era: Students' intrinsic and extrinsic factors. In 5th FIRST T3 2021 International Conference (FIRST-T3 2021) (pp. 168-175). Atlantis Press. 10.2991/assehr.k.220202.029

Hendricks, E. A., & Mutongoza, B. (2023). Paragons of inequality: Challenges associated with online learning at a selected rural university in South Africa1. The Independent Journal of Teaching and Learning, 18(1), 8-21. https://hdl.handle.net/10520/ejc-jitl1-v18-n1-a2

Houlden, S., & Veletsianos, G. (2019). A posthumanist critique of flexible online learning and its "anytime anyplace" claims. British Journal of Educational Technology, 50(3), 1005–1018. https://doi.org/10.1111/bjet.12779

Kahu, E. R., & Nelson, K. (2018). Student engagement in the educational interface: Understanding the mechanisms of student success. Higher education research & development, 37(1), 58-71. https://doi.org/10.1080/07294360.2017.1344197

Kariya, S. (2023). Online education expands and evolves. IEEE Spectrum, 40(7), 49–51. https://doi.org/10.1109/MSPEC.2003.1200179

Krishnamurthy, S. (2020). The future of business education: A commentary in the shadow of the Covid-19 pandemic. Journal of business research, 117, 1-5. https://doi.org/10.1016/j.jbusres.2020.05.034

Kotera, Y., Taylor, E., Fido, D., Williams, D., & Tsuda-McCaie, F. (2023). Motivation of UK graduate students in education: Self-compassion moderates pathway from extrinsic motivation to intrinsic motivation. Current Psychology, 42(12), 10163-10176. https://doi.org/10.1007/s12144-021-02301-6

Lee, H., & Jung, J. (2022). Relationship between convenience of online education, academic achievement, and learning satisfaction. Korean Association for Learner-Centered Curriculum and Instruction, 22(13), 463–476. https://doi.org/10.22251/jlcci.2022.22.13.463

Matee, G. L., Motlohi, N., & Nkiwane, P. (2023). Emerging perspectives and challenges for virtual collaborative learning in an institution of higher education: a case of Lesotho. Interactive Technology and Smart Education, 20(1), 73-88. https://doi.org/10.1108/ITSE-06-2021-0110

Martinho, D., Santos, E., Miguel, I., & Cordeiro, D. (2018). Factors that influence the adoption of postgraduate online courses. International Journal of Emerging Technologies in Learning, 13(12). https://doi.org/10.3991/ijet.v13i12.8864

Murphy, L., Eduljee, N. B., & Croteau, K. (2020). College student transition to synchronous virtual classes during the COVID-19 pandemic in Northeastern United States. Pedagogical Research, 5(4).

Müller, C., & Mildenberger, T. (2021). Facilitating flexible learning by replacing classroom time with an online learning environment: A systematic review of blended learning in higher education. Educational Research Review, 34, 100394. https://doi.org/10.1016/j.edurev.2021.100394

Nunes, K., Laliberté, N., & Rawle, F. (2023). The case for flexibility in online science courses: Strategies and caveats. Biochemistry and Molecular Biology Education, 51(1), 89-93. https://doi.org/10.1002/bmb.21690

Naidu, S. (2019). The changing narratives of open, flexible, and online learning. Distance Education, 40(2), 149–152. https://doi.org/10.1080/01587919.2019.1612981

Neștian, Ș. A., Vodă, A. I., Tiță, S. M., Guță, A. L., & Turnea, E. S. (2021). Does individual knowledge management in online education prepare business students for employability in online businesses?. Sustainability, 13(4), 2091. https://doi.org/10.3390/su13042091

Nunes, K., Laliberté, N., & Rawle, F. (2022). The case for flexibility in online science courses: Strategies and caveats. Biochemistry and Molecular Biology Education, 51(1), 89–93. https://doi.org/10.1002/bmb.21690

Owais, K. M., & Atipamula, A. (2021). E-Learning Experience of Management Students in B-Schools During COVID-19 Pandemic-A primary Survey. Shanlax International Journal of Management, 8(S1-Feb), 73-78.

Rahimi, F., Dolatabadi, N. D., & Allahbakhshian, L. (2022). Third-millennium challenges in virtual-learning contexts: A systematic review in developing countries. Acta Medica Iranica, 60(8), 447-456. https://doi.org/10.18502/acta.v60i8.10828

Ryan, R. M., & Deci, E. L. (2000). Intrinsic and extrinsic motivations: Classic definitions and new directions. Contemporary educational psychology, 25(1), 54-67. https://doi.org/10.1006/ceps.1999.1020

Salas-Pilco, S. Z., Yang, Y., & Zhang, Z. (2022). Student engagement in online learning in Latin American higher education during the COVID‐19 pandemic: A systematic review. British Journal of Educational Technology, 53(3), 593-619. https://doi.org/10.1111/bjet.13190

Sato, S. N., Condes Moreno, E., Rico Villanueva, A., Orquera Miranda, P., Chiarella, P., Tornero-Aguilera, J. F., & Clemente-Suárez, V. J. (2022). Cultural differences between university students in online learning quality and psychological profile during COVID-19. Journal of Risk and Financial Management, 15(12), 555. https://doi.org/10.3390/jrfm15120555

Sato, S. N., Condes Moreno, E., Villanueva, A. R., Orquera Miranda, P., Chiarella, P., Bermudez, G., ... & Clemente-Suárez, V. J. (2023). Psychological Impacts of Teaching Models on Ibero-American Educators during COVID-19. Behavioral Sciences, 13(12), 957. https://doi.org/10.3390/bs13120957

Sheail, P. (2018). Temporal flexibility in the digital university: Full-time, part-time, flexitime. Distance Education, 39(4), 462–479. https://doi.org/10.1080/01587919.2018.1520039

Stanley, D., & Fortunato, Y. R. M. (2022). The efficacy of online higher education in Latin America: a systematic literature review. IEEE Revista Iberoamericana de Tecnologias del Aprendizaje, 17(3), 262-269. DOI: 10.1109/RITA.2022.3191299

Stone, C., Freeman, E., Dyment, J. E., Muir, T., & Milthorpe, N. (2019). Equal or equitable?: The role of flexibility within online education. Australian and International Journal of Rural Education, 29(2), 26-40. https://doi.org/10.47381/aijre.v29i2.221

SIMA TABATABAI, P. D. (2020). COVID-19 impact and virtual medical education. Journal of advances in medical education & professionalism, 8(3), 140. doi: 10.30476/jamp.2020.86070.1213

Stone, C., & O'Shea, S. (2019). Older, online and first: Recommendations for retention and success. Australasian Journal of Educational Technology, 35(1). https://doi.org/10.14742/ajet.3913 https://doi.org/10.14742/ajet.3913

Soffer, T., Kahan, T., & Nachmias, R. (2019). Patterns of students' utilization of flexibility in online academic courses and their relation to course achievement. The International Review of Research in Open and Distributed Learning, 20(4). https://doi.org/10.19173/irrodl.v20i4.3949

Tseng, H., Yi, X., & Yeh, H. T. (2019). Learning-related soft skills among online business students in higher education: Grade level and managerial role differences in self-regulation, motivation, and social skill. Computers in Human Behavior, 95, 179-186. https://doi.org/10.1016/j.chb.2018.11.035

Wilcha, R. J. (2020). Effectiveness of virtual medical teaching during the COVID-19 crisis: systematic review. JMIR medical education, 6(2), e20963. doi: 10.2196/20963

Xavier, M., & Meneses, J. (2021). The tensions between student dropout and flexibility in learning design: The voices of professors in open online higher education. The International Review of Research in Open and Distributed Learning, 23(1). https://doi.org/10.19173/irrodl.v23i1.5652

Yoon, H. (2019). An online college near me: Explaining localized distance student enrollment patterns. The International Review of Research in Open and Distributed Learning, 20(5). https://doi.org/10.19173/irrodl.v20i5.4432

Zamani, B. E., Esfijani, A., & Damaneh, S. M. A. (2016). Major barriers for participating in online teaching in developing countries from Iranian faculty members' perspectives. Australasian Journal of Educational Technology, 32(3). https://doi.org/10.14742/ajet.2678

Zainuddin, A., Rahim, M. A., Yusof, R., Samad, S. A., Harith, N. H. M., & Rahmat, N. H. (2021). Analyzing postgraduates' motivation in writing master dissertation. International Journal of Academic Research in Business and Social Sciences, 11(12), 1199-1220. http://dx.doi.org/10.6007/IJARBSS/v11-i12/11460

Appendix

Table A1. Final scale.

Constructs and items
F1. Cost reduction
Studying online allows me to reduce living, transportation, and/or accommodation expenses.
Virtual classes help me reduce spending on physical materials.
Studying online is an affordable alternative to continue my education.
Online classes enable me to invest in other needs due to cost savings.
F2. Ability to Study from Any Location
The online format allows me to study while traveling or on the move.
I value the freedom to study regardless of my geographic location.
Studying online makes it easier to combine studies with other commitments in different locations.
I can access my studies independently of geographic restrictions.
I feel that studying from anywhere gives me greater independence.
F3. Control over learning pace
I feel more comfortable studying at my own pace in a virtual class.
In online classes, I can review the material as many times as I need.
Studying online allows me to pause and revisit more difficult concepts.
I can adjust my study pace according to the difficulty of each topic.
The online format lets me organize my time according to my availability.
I can spend more time on the topics I consider important.
F4. Flexibility to balance study and work
The online format allows me to work and study at the same time.
Studying online helps me balance my work and academic life.
I can better manage my work responsibilities with the flexibility of online education.
Online flexibility enables me to focus on my career without affecting my studies.
The online format helps me maintain an adequate balance between work and study.
F5. Avoiding commuting time
Studying online allows me to avoid commuting time.
I can use travel time for other productive activities.
Not having to commute allows me to organize my time better.
Studying online enables me to use my time more efficiently.
The absence of commuting is a significant advantage for me.

Source: author's own compilation.