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# Exploring the Relationship Between Attitudes Towards Online Learning and Self-Directed Learning Readiness Among Management Undergraduates

Chaiyaset Promsri

Department of Management, Faculty of Business Administration,
Rajamangala University of Technology Phra Nakhon, Bangkok, Thailand.

*Corresponding author**:** Chaiyaset.p@rmutp.ac.th

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## Abstract

*This study examined the relationship between attitudes towards online learning and self-directed learning readiness among management undergraduates at a university in Thailand. The study population consisted of 333 students, from which a sample of 177 was selected using G*Power analysis with a small effect size of .25, a power level of .70, and an alpha level of .05. A quantitative research design was employed, utilising a structured questionnaire as the primary data collection tool that was subsequently examined for validity and reliability. Content validity was established through expert review using the Index of Item-Objective Congruence method, while reliability was confirmed using internal consistency analysis, which indicated that the instrument was appropriate for data collection. Descriptive statistics, correlation analysis, and simple regression were used to analyse the data. Results showed a significant positive correlation between students' attitudes towards online learning and their readiness for self-directed learning. Specifically, students who reported more favourable perceptions of the elements of online learning, such as flexibility, autonomy, and accessibility, also demonstrated higher levels of self-directedness, including in goal-setting, self-monitoring, and taking responsibility for their learning outcomes. The findings suggest that fostering positive online learning attitudes can be an essential driver of self-directed learning competencies. Higher education institutions are thus encouraged to design online learning environments that not only emphasise accessibility but also provide scaffolding to help learners develop autonomy, motivation, and active engagement. Practical recommendations include integrating interactive learning tools, peer collaborative*

*opportunities, and continuous instructor support to strengthen students' readiness for self-directed learning.*

*Keywords:* management undergraduates, online learning, online learning attitude, online learning, self-directed learning readiness

## 1. Introduction

The widespread adoption of online learning has reshaped higher education by offering flexible, cost-effective, and inclusive alternatives to traditional classrooms (Nord Anglia, 2021; Drexel University School of Education, 2025). Research indicates that students are often drawn to online learning because it offers autonomy, the ability to balance study with work or personal obligations, and the opportunity to engage across geographical boundaries (Ilgaz & Gulbahar, 2017). However, challenges such as reduced engagement, limited peer interaction, and concerns about instructional quality remain unresolved (McIntosh, 2022). These concerns highlight that positive perceptions of flexibility and accessibility do not automatically translate into effective learning outcomes. Understanding how students' attitudes towards online learning influence their educational success has consequently become a crucial area of inquiry (Child et al., 2023).

Along with the growth of online learning, self-directed learning (SDL) has become increasingly recognised as an essential skill in digital education. SDL focuses on learners' ability to take initiative, set goals, and manage their own progress (Smith, 2021). In online settings, where learners assume greater responsibility for their learning pace and engagement, self-directed learning readiness (SDLR) is a crucial factor for success (Deraman et al., 2021). Although previous studies have linked online learning preferences with SDLR (Dogham et al., 2022; Mawed et al., 2024; Fernando et al., 2022), the results are scattered across different contexts and disciplines. Some research highlights the importance of self-efficacy and engagement, while others focus on learner control, communication, or demographic factors (Haris, 2024; Wijaya & Khoiriyah, 2021; Genc et al., 2024).

Conceptually, online learning attitudes refer to learners' cognitive and emotional evaluations of digital instructional environments, highlighting perceptions of flexibility, accessibility, and technological usefulness, while SDLR explains the motivational and behavioural tendency to take initiative, set goals, and independently control learning processes (Candy, 1991; Knowles, 1975). Although these constructs share such common areas as learner autonomy and motivation, they remain conceptually distinct: online learning attitudes focus on perceptions of the learning environment, whereas SDLR pertains to the personal preparedness to act within that environment.

Recognising this subtle difference is essential for understanding how students' perceptions of digital learning are related to their self-regulated learning behaviours. This variety of results suggests that, while the relationship is recognised, there is still limited understanding of how online learning attitudes predict SDLR in specific populations. In particular, research on management undergraduates remains limited, despite these students' need to develop both digital adaptability and SDL skills to meet future professional challenges.

This lack of focused inquiry creates a clear research gap. Although both online learning and SDLR have been extensively discussed, their relationship remains underexplored, especially regarding whether or not the students' positive or negative attitudes towards online learning can predict their level of readiness for SDL. This is especially important for management undergraduates, who are expected not only to master subject knowledge but also develop autonomy, digital adaptability, and lifelong learning skills to meet future

professional demands. Gaining a deeper understanding of how online learning attitudes influence SDLR could thus help develop strategies that enhance both engagement and learner autonomy in higher education.

The importance of this study lies in its potential to provide empirical evidence on the link between online learning attitudes and SDLR among management undergraduates. By examining this connection, the study contributes to the theoretical discussion on digital education and offers practical guidance for enhancing curriculum design and teaching methods. Specifically, its results may help educators and policymakers align online learning methods with the skills needed for lifelong learning and professional growth, ensuring that the flexibility of digital education translates into meaningful student outcomes.

Building on this gap, the present study was designed to explore four objectives: (1) to investigate the behaviours and attitudes towards online learning among management undergraduates; (2) to evaluate their levels of SDLR; (3) to analyse the relationship between online learning attitudes and SDLR; and (4) to determine whether online learning attitudes can significantly predict SDLR.

Since the two constructs, i.e., online learning attitude and SDLR, are theoretically connected, this study specifically aimed to assess the extent of their dependence rather than assume their completely independence from one another. Additionally, it aimed to identify which attitudinal aspects of online learning (such as perceived usefulness, flexibility, and learner autonomy) have the greatest impact on SDLR (Demirel, 2022; Guglielmino, 1978). This approach provides a more detailed understanding of how various elements of learners' digital attitudes influence the development of autonomous learning behaviours. By addressing these objectives, the study seeks to contribute empirical evidence to the ongoing discourse on digital education and provide actionable insights for educators and policymakers in designing effective online learning strategies.

## 2. Literature Review

### 2.1. Online Learning Preferences

Online learning, also known as distance learning or e-learning, is an educational approach that takes place entirely online, allowing students to access course materials, instruction, and assessments from any location outside the traditional classroom. Its importance lies in its flexibility and accessibility, enabling learners to balance studies with professional and personal commitments in ways that conventional face-to-face learning often cannot. Key benefits of online learning include cost reduction, flexible scheduling, increased course variety, and the opportunity to cultivate self-discipline, responsibility, and collaborative skills in digital environments. However, online learning is not without limitations. This approach can reduce opportunities for social interaction, demand high levels of intrinsic motivation and time management, and lead to screen fatigue, while also requiring instructors to develop new pedagogical competencies to achieve better learner engagement and effective delivery (Scott, 2025).

Early explorations of readiness for online learning focused on validating instruments that measure learner autonomy and technological confidence. For instance, Smith (2005) examined this through a Readiness for Online Learning questionnaire to a sample of 314 Australian university students. Their factor analysis identified two critical dimensions, i.e., self-management of learning and comfort with e-learning, highlighting the importance of autonomy and technological confidence as predictors of successful online learning. Similarly, Smith et al. (2003) deployed McVay's Readiness for Online Learning questionnaire to 107 undergraduates in the United States and Australia. Their reliability analysis confirmed

acceptable internal consistency, and factor analysis revealed the same two-factor structure described by Smith, which reinforced the centrality of these dimensions while calling for refinement of the instrument and further validation.

The rapid switch to online learning that occurred during the Covid-19 pandemic subsequently prompted numerous studies that examined students' experiences, preferences, and challenges related to online learning. Alinsug et al. (2021) conducted an action research study involving Bachelor of Secondary Education (BSED) Social Studies students at Cebu Normal University, through which they identified moderately positive attitudes towards online learning. While the BSED students appreciated accessibility and flexibility, they also faced barriers such as resource constraints and connectivity issues, underscoring the need for continuous improvement in online learning design. Similarly, Ploj-Virtič et al. (2021) investigated how students adapted to online distance learning under forced conditions. The study revealed that the students' satisfaction with digital tools was the strongest predictor of their sustained preference for technology use after the pandemic. In contrast, organisational support and perceived ease of use played comparatively minor roles.

Further investigations during the pandemic revealed additional insights into students' online learning preferences. In a study involving 1,189 high school students in the Philippines, Ong et al. (2022) used conjoint analysis to determine evaluation as the dominant attribute shaping online learning preferences, particularly for multiple-choice assessments delivered in a combination of synchronous and asynchronous modes. Nishimwe et al. (2022) reported that although online learning promoted autonomy, it was hindered by limited internet access, lack of interaction, and weak self-discipline, leading most students to prefer face-to-face learning. In a survey of City University of New York students, Banks and Vergez (2022) found that online courses were perceived more negatively than in-person learning, particularly within STEM disciplines, underscoring the need for improved instructional design.

Muhfahroyin and Sujarwanta (2023) surveyed 516 students across nine universities in Indonesia and found that unstable internet connections, limited quotas, and competing activities were significant barriers to online learning. The research revealed that students demonstrated weak commitment and often valued attendance over meaningful participation, leaving the authors to conclude that strengthening infrastructure alongside pedagogical innovations would be a necessary step. Having explored motivation in online English language learning, Shafien et al. (2023) discovered that most students positively valued e-Campus, Google Meet/Zoom, and YouTube as a means to improve confidence and engagement despite persistent connectivity issues. In a related study, Mohammad et al. (2023) examined the experiences of diploma students at a Malaysian university, and found that replay functions, flexibility, and cost savings were perceived as key advantages. In contrast, difficulties with concentration, lack of self-discipline, and heavy workloads emerged as significant challenges. Their findings also showed that learners valued synchronous classes with recordings as support but considered traditional face-to-face formats more suitable for calculation-oriented and laboratory-based subjects.

In their study involving mathematics and statistics students at a university in Malaysia, Ahmad et al. (2024) found a marked preference (i.e., 74–80%) for traditional classroom learning, which students associated with better concentration, communication, and interaction. In contrast, online platforms were valued primarily for their flexibility. Meanwhile, Nurteti et al. (2024) found that online learning preferences were determined by content quality, interactivity, stable internet access, and teacher support, although gender differences shaped adaptability. Their study emphasised that collaboration among stakeholders and sustained infrastructure development were essential to improving the effectiveness of online learning.

In an effort to improve the measurement of student attitudes towards online learning, Demirel (2022) established the Students' Attitude Scale for Online Education, which was tested on 341 Turkish university students. Exploratory and confirmatory factor analyses identified six key factors: efficiency, functionality, necessity, effectiveness, competence, and attitudes towards trainers. Moreover, the scale demonstrated high reliability (α = .92). The "necessity" factor was particularly significant, reflecting the pandemic-driven transformation of online education into a required mode of learning, thus providing a robust and policy-relevant assessment tool.

Overall, the body of literature reviewed reflects an evolution in the study of online learning preferences, beginning with readiness assessments focused on autonomy and technological confidence and extending to pandemic-driven inquiries that exposed both strengths and limitations of digital learning. Recent contributions emphasised satisfaction, evaluation practices, and blended delivery, alongside validated tools such as Demirel's (2022) scale, which advanced the measurement of student attitudes. Collectively, these studies indicated that while online learning provides flexibility and autonomy, its success depends on overcoming infrastructural challenges, addressing learner needs, and ensuring supportive pedagogical environments.

### 2.2. SDLR

SDLR refers to a person's level of preparedness, including attitudes, abilities, and personal traits, that helps them take initiative and assume responsibility for their own learning. Guglielmino (1978) described SDLR as a learner's capability to plan, carry out, and assess their learning independently without relying heavily on instructors. Learners with high levels of SDLR are thus expected to be better at setting goals, managing resources, and engaging in reflective practices that promote effective learning.

The advantages of SDLR are many. First, it fosters responsibility and independence in learning, encouraging students to take charge of their educational progress. Second, it improves critical thinking and problem-solving skills, as learners with high levels of SDLR actively seek knowledge and can apply it in different situations. Third, it supports lifelong learning, an essential skill in today's fast-changing knowledge economy. Additionally, in digital and online learning settings where self-regulation is vital, students with higher levels of SDLR often achieve better results (Fisher et al., 2001). Therefore, developing SDLR is essential for learners to prepare themselves to adapt, stay flexible, and continue learning throughout their lives.

Research on SDLR in higher education highlights both shared and context-specific patterns. One of the earliest contributions was by Guglielmino (1978), who developed the Self-Directed Learning Readiness Scale (SDLRS) to measure individual readiness for SDL across such dimensions as initiative, independence, responsibility for learning, love of learning, creativity, and problem-solving skills. Developed through expert validation and factor analysis, Guglielmino's 58-item instrument has since been widely adopted in educational research and professional training, demonstrating high reliability and validity. Its lasting contribution lies in providing educators with a standardised tool to assess learner preparedness for autonomy and design curricula that foster lifelong learning skills. Later meta-analyses confirmed the instrument's robustness, with internal consistency coefficients ranging from .72 to .96 and test-retest reliability coefficients ranging from .79 to .82 (Statistics Solutions, 2025).

In their study involving Thai undergraduates in education colleges, Prabjandee and Inthachot (2013) reported that students demonstrated high levels of readiness in responsibility, self-concept, and initiative, but only moderate levels of creativity and openness to learning. This suggested that the Thai students had strong inclinations towards

responsibility and autonomy but required curricular interventions to enhance their adaptability and innovation. Lim et al. (2018), who assessed Malaysian foundation students with varying English proficiency levels, found “rather high” readiness across motivation, strategies, and awareness, without significant differences between proficiency groups. These studies consistently highlighted motivation as the most influential factor, reinforcing its importance as a central driver of autonomous learning.

Building on this foundation, Hung et al. (2010) advanced the Online Learning Readiness Scale (OLRS) and tested it on 1,051 Taiwanese college students across five online courses. They identified five factors, i.e., SDL, motivation for learning, computer/internet self-efficacy, learner control, and online communication self-efficacy, with the students showing higher readiness in computer/internet self-efficacy, motivation, and online communication, but lower readiness in learner control and SDL. This indicated that technical confidence initially outperformed autonomous regulation in digital learning contexts. Also, this study found that upper-year students scored significantly higher than underclassmen across most dimensions, but gender differences were not significant. This framework extended beyond prior two-factor models, emphasising the importance of self-regulation and communication alongside technical competence.

Recent studies have explored SDLR within specific institutional settings. Aroonjit’s (2022) study found that SDL in online education was generally moderate among 312 Thai undergraduates, with the highest scores received for “responsibility for learning” followed by “passion for learning,” and the lowest in “opportunity for learning.” Significant differences were observed for the education centre and computer skills, but none for academic level or accumulated grade point average. Notably, supportive environments, including those involving instructor, peer, and resource contexts, were positively associated with SDL, whereas no significant association was identified with stress, underscoring the importance of digital fluency and learning support. Similarly, Chatchawalanon (2025) evaluated Thai medical students using the SDLR Scale and found a generally high level of readiness across most areas, except for “love for learning” and “positive orientation to the future,” which were rated as moderate. Additionally, Chatchawalanon’s study found that first-year students scored significantly higher than seniors in these two areas, suggesting a decline in specific readiness dimensions throughout medical training and stressing the need for more deliberate reinforcement of SDL within the curricula.

Overall, research on SDLR from its origins in the SDLRS (Guglielmino, 1978) has increasingly focused on more diverse higher education contexts, particularly in Asia, where students generally demonstrate moderate to high readiness levels across multiple dimensions. Responsibility, autonomy, and motivation are consistently identified as strong contributors towards overall readiness, whereas creativity, openness, and strategic learning skills remain weaker. More contemporary studies (Hung et al., 2010; Aroonjit, 2022; Chatchawalanon, 2025) underscored the role of digital environments, showing that while technical skills were frequently considered a strong element, long-term SDLR depended on supportive peer, instructor, and curricular structures. Overall, the evidence highlighted the centrality of SDLR for learner success across both face-to-face and online modalities.

### 2.3. Online Learning Preference and SDLR

Previous research consistently showed that students’ experiences and preferences for online learning influence their readiness to engage in autonomous learning. Dogham et al. (2022) indicated that SDLR was positively associated with online learning self-efficacy, suggesting that confidence in digital environments is linked to how learners adapt their study preferences. Likewise, Mawed et al. (2024) found that higher SDLR levels significantly predicted greater engagement in online learning activities, highlighting the mutual connection between online learning practices and the drive for self-direction.

Other studies further emphasised that online learning attributes directly influence readiness outcomes. Fernando et al. (2022) used the OLRS to determine that learner control and online communication were the most significant factors driving effective online learning, highlighting that students' perceptions and preferences for online modalities play a crucial role in fostering readiness. Additionally, Haris (2024) found that even when students reported average SDLR levels, they faced challenges with responsibility and problem-solving, suggesting that online environments require specific preferences, such as comfort with technology and a structured delivery style, which can more effectively influence readiness than the preferences expected in traditional settings. Evidence from research exploring student preferences supports this connection. Wijaya and Khoiriyah (2021) noted that medical students with high SDLR levels still showed varying degrees of inclinations for online formats, suggesting that preferences for flipped classrooms or synchronous methods may develop readiness in different ways. Furthermore, Genc et al. (2024) highlighted that demographic factors significantly affected both online learning readiness and SDLR, underscoring the importance of learner backgrounds in shaping how online learning preferences translate into preparedness for autonomous study.

These reviewed studies collectively show that online learning preferences relate to more than just convenience; they also play a key role in shaping learners' ability to engage independently. Preferences for structured, interactive, and supportive online formats promote responsibility, independence, and confidence, thereby improving SDLR, while mismatched or unsupported formats can hinder its growth. Previous research generally considered the relationship between online and self-directed learning as unidirectional, in which positive attitudes towards digital environments lead to greater learner autonomy and self-regulation (Hung et al., 2010; Dogham et al., 2022). However, few studies have examined how these constructs may reinforce one another or be theoretically linked, primarily through underlying psychological mechanisms such as self-efficacy, digital motivation, or learner control (Zimmerman, 2002; Artino & Stephens, 2009).

This study, therefore, aims to reach beyond mere correlation confirmation by clarifying the nature of this relationship, and empirically test how online learning attitudes influence readiness for autonomous learning, specifically in the context of management education. This synthesis thus provides the theoretical basis for the following proposition: Students' online learning preferences positively influence their SDLR. Therefore, the research hypothesis is proposed as follows: "Online learning attitude has a statistically significant positive effect on SDLR among management undergraduates."

## 3. Research Method

### 3.1. Research Design

This study used a quantitative research design, i.e., a self-administered questionnaire, to explore the relationship between students' attitudes towards online learning and their SDLR. The questionnaire was distributed online through Google Classroom to management undergraduates at Rajamangala University of Technology Phra Nakhon, Thailand.

### 3.2. Sampling Method

The study population consisted of 333 management undergraduates. The required sample size was determined using G*Power 3.1 for a simple linear regression with one independent variable, considering a small effect size ($f^2 = 0.0625$), a statistical power of 0.70, and a significance level of 0.05. The analysis showed that at least 103 students were needed. Therefore, this study collected data beyond the minimum to ensure adequate

statistical power (Erdfelder et al., 1996). However, first-year students were excluded because they had only recently enrolled and lacked academic experience to provide informed responses relevant to the study variables. Including the first-year students could have caused measurement bias, as their attitudes and readiness for SDL in online education might differ significantly from those of students who had completed more coursework and had had more exposure to university-level environments. A simple random sampling method was used to ensure that every student had an equal chance of being selected (Etikan & Bala, 2017). This method improved the representativeness of the sample and reduced selection bias, making the findings more applicable to the entire population of management students.

### 3.3. Instrumentation

Two scales were used in this study. The Online Learning Attitude Scale was adapted from the original version developed by Demirel (2022), which comprised 30 items rated on a five-point Likert scale with scores ranging from 1 (‘strongly disagree’) to 5 (‘strongly agree’). In addition, the SDLRS was adapted from Guglielmino (1978) and comprised 19 items, also rated using the same five-point Likert scale

To ensure the quality of the instruments used in this study, content validity was assessed using the Index of Item-Objective Congruence (IOC) method. Subject-matter experts reviewed the items, and all items in both scales achieved IOC scores above 0.50, demonstrating acceptable content validity (Rovinelli & Hambleton, 1977). Reliability was also evaluated using Cronbach’s alpha, a widely accepted measure of internal consistency. Following Nunnally's (1978) guidance, alpha values of 0.70 or higher are generally considered acceptable for exploratory research. The scales in this study demonstrated acceptable internal consistency, with alpha coefficients exceeding the recommended threshold (see Table 1). For hypothesis testing, simple linear regression analysis was used to examine the effect of online learning attitude on SDLR among these management undergraduates.

**Table1**

*Cronbach’s Alpha Coefficients for Study Scales*

| Scale Measurement | Number of Items | Cronbach’s α |
|---|---|---|
| Online Learning Attitude | 30 | 0.832 |
| SDL | 19 | 0.852 |

### 3.4. Data Collection

Data were collected from undergraduate students majoring in management. Participation was voluntary, and all respondents provided informed consent before completing the survey. Inclusion criteria required students to be enrolled in the management programme beyond their first year. All students still in their first year of studies and those who declined consent were excluded. Following these procedures, a total of 177 valid responses were collected, ensuring both ethical compliance and sufficient statistical representation for analysis.

## 4. Findings and Discussion

### 4.1. Findings

This section presents the results of the data analysis conducted to address the research objectives and test the hypothesis. Descriptive statistics summarise the demographic

characteristics of the participants, their primary devices and locations for online learning, as well as mean scores on the study variables. Subsequently, inferential statistics, including Pearson's correlation and simple linear regression, are used to examine the relationship between online learning attitude and SDLR, and determine the predictive power of online learning attitude on SDLR.

**Table 2**

*Descriptive characteristics of the sample by gender, age, year of study, and cumulative grade point average (GPA) (n=177)*

| Variable | Category | Frequency (n) | Percent |
|---|---|---|---|
| Gender | Male | 61 | 34.5 |
| | Female | 116 | 65.5 |
| Age | 18–20 years | 88 | 49.7 |
| | 21 years and above | 89 | 50.3 |
| Year of study | Year 2 | 60 | 33.9 |
| | Year 3 | 72 | 40.7 |
| | Year 4 | 45 | 25.4 |
| Cumulative GPA | 2.00–2.49 | 40 | 22.6 |
| | 2.50–2.99 | 64 | 36.2 |
| | 3.00–3.49 | 53 | 29.9 |
| | 3.49–4.00 | 20 | 11.3 |
| Total | | 177 | 100.0 |

Table 2 shows that the sample consisted of 177 participants. There were 116 females (65.5%) and 61 males (34.5%). The age distribution was similar between the 18–20 years group ($f$=88, 49.7%) and those aged 21 years and above ($f$=89, 50.3%). A majority of the participants were third-year students ($f$=72, 40.7%), followed by second-year students ($f$=60, 33.9%) and fourth-year students ($f$=45, 25.4%). For the cumulative GPA variable, most participants fell within the 2.50–2.99 range ($f$=64, 36.2%), followed by the 3.00–3.49 range ($f$=53, 29.9%), the 2.00–2.49 range ($f$=40, 22.6%), and the 3.49–4.00 range ($f$=20, 11.3%).

**Table 3**

*Frequencies and Percentage of Primary Device Used for Online Learning*

| Device Types | Frequency (n) | Percentage (%) |
|---|---|---|
| Mobile Phone | 129 | 73.3% |
| Tablet | 73 | 41.5% |
| Laptop | 19 | 10.8% |
| Desktop Computer | 4 | 2.3% |

As shown in Table 3, findings indicated that most students (73.3%) used mobile phones as their main device for online learning. Tablets were also fairly common (41.5%), while laptop use was relatively low (10.8%). Among all devices, desktop computers had the lowest reported usage (2.3%).

**Table 4**

*Frequencies and Percentage of Primary Location of Online Learning*

| Learning Location | Frequency (n) | Percentage (%) |
|---|---|---|
| At Home | 122 | 69.3% |
| Dormitory | 58 | 33.0% |
| University Campus | 18 | 10.2% |
| Cafe/Public Space | 3 | 1.7% |
| Other | 1 | 0.6% |

As shown in Table 4, most students (69.3%) primarily attended online classes from home. Dormitories were reported as the second most common location (33%), followed by the university campus (10.2%). Other locations were negligible, constituting only 2.3%.

**Table 5**

*Descriptive Statistics for Study Variables (n = 177)*

| Variables | Mean | S.D. |
|---|---|---|
| Online Learning Attitude | 3.47 | 0.473 |
| SDLR | 3.61 | 0.495 |

Table 5 presents the descriptive statistics for the study variables. The average score for online learning attitude was 3.47 (SD = 0.473), reflecting the study participants' generally moderate positive attitude. Additionally, the average score for SDLR was 3.61 (SD = 0.495), indicating that participants showed a relatively high level of SDL.

**Table 6**

*Pearson's Correlation between Online Learning Attitude SDLR*

| Variables | Pearson's r | Sig. (2-tailed) | n |
|---|---|---|---|
| Online Learning — SDLR | .626** | < .001 | 177 |

** p < .01.

Table 6 indicates a strong positive association between online learning and SDLR, r(175) = .626, p < .001, demonstrating that students who evaluated online learning more favourably were more likely to report higher levels of SDLR. However, as this is a bivariate correlation, the result represents only association, not causation.

**Table 7**

Simple Linear Regression Predicting SDLR from Online Learning Attitude

| Predictor | B | SE B | β | t | p |
|---|---|---|---|---|---|
| (Constant) | 1.341 | 0.216 | — | 6.209 | < .001 |
| Online Learning | 0.655 | 0.062 | 0.626 | 10.619 | < .001 |
| $R = .626$; $R^2 = .392$; Adj. $R^2 = .388$; $F(1, 175) = 112.762$; $p < .001$; Durbin-Watson = 2.102 | | | | | |

Basic assumptions were checked before conducting the regression analysis. This study used P-P plots to visually assess normality, yielding a plot that closely followed the diagonal line, indicating the residuals are approximately normally distributed. Additionally, the Durbin-

Watson test was used to assess autocorrelation in the residuals. The resulting statistic of 2.102 indicated no significant autocorrelation, suggesting that the assumption of error independence was satisfied (Field, 2018). Thus, the interdependence assumption was met.

Table 7 shows the results of a simple linear regression analysis, which indicates online learning attitude as a strong positive predictor of SDLR. The model was statistically significant ($F(1, 175) = 112.762$, $p < .001$), with $R^2 = .388$. This indicated that online learning attitude could explain the 38.8% variance in SDLR and suggested that there were other variables influencing the students' SDLR that had not been included in this study. Overall, the fitted equation is SDLR = 1.341 + 0.655 (online learning), thus confirming this study's research hypothesis.

While the results confirmed a statistically significant relationship, it is important to recognise that the current analysis was based on overall scale scores, which may mask potential multidimensional interactions among the subcomponents of the two constructs. Elements of both online learning attitude (e.g., efficiency, functionality, necessity, and competence) and SDLR (e.g., initiative, goal setting, and self-monitoring) consist of theoretically separate yet related aspects (Demirel, 2022; Guglielmino, 1978). Future analyses using multivariate techniques, such as multiple regression, structural equation modelling (SEM), or partial least squares structural equation modelling (PLS-SEM), would enable a more detailed examination of how specific attitudinal dimensions influence particular parts of readiness. These methods would also allow estimation of the level of interdependence between the constructs, offering a more comprehensive and theoretically grounded understanding of their connection (Hair et al., 2021; Kline, 2023).

### 4.2. Discussion

The primary goal of this study was to assess management undergraduates' attitudes towards online learning. The findings show that they generally held somewhat positive attitudes, indicating they value the flexibility and accessibility of online formats but are still concerned about issues like engagement and instructional quality. This aligns with findings from previous research such as that by Alinsug et al. (2021), who noted that students appreciated the accessibility of online learning yet faced ongoing challenges like connectivity and workload, and that by Ahmad et al. (2024), who observed that although students valued flexibility, they nevertheless felt more confident in traditional classroom settings. Overall, the study confirms a mixed but moderately positive attitude towards online learning, consistent with existing literature.

The second objective was to evaluate the students' SDLR. The average score indicates a relatively high level of SDLR, suggesting that participants were able to take responsibility for and manage their own learning processes. This aligns with findings by Prabjandee and Inthachot (2013), who discovered that Thai undergraduates exhibited strong responsibility and initiative, and those by Lim et al. (2018), who noted "rather high" readiness among Malaysian students. One possible explanation is that management students, because of the nature of their academic programme, are used to managing independent projects and applied learning tasks, which may foster greater preparedness for autonomous study. However, the results differ somewhat from those of Aroonjit (2022), who found moderate readiness among Thai undergraduates, suggesting that factors such as programme emphasis and institutional support may influence readiness levels.

The third research objective meant to examine the relationship between online learning attitudes and SDLR. The findings show a strong positive correlation, confirming that favourable online learning attitudes are associated with greater levels of SDLR. This aligns with findings by Dogham et al. (2022), who noted a positive correlation between SDLR and online learning self-efficacy, as well as those by Mawed et al. (2024), who found that higher

levels of SDLR significantly predicted engagement in online activities. Similarly, the current study's focus on the predictive role of attitudes aligns with the findings of Fernando et al. (2022), who emphasised learner control and communication as key factors in online learning success.

However, this strong correlation probably reflects the theoretical interconnectedness of the constructs rather than their occurrence as two completely independent phenomena, as both constructs share standard psychological foundations such as learner autonomy, intrinsic motivation, and self-regulation (Zimmerman, 2002; Deci & Ryan, 2000). Therefore, instead of viewing the relationship as purely causal, a more nuanced interpretation recognises that positive attitudes towards online learning may both strengthen and be strengthened by SDL dispositions through reciprocal mechanisms. Future research using multivariate or subscale-level analyses, e.g., examining how specific dimensions like "learner control," "motivation," or "technological confidence" contribute differently to readiness, could uncover the relative influence of these factors and clarify the mechanisms behind their interdependence (Hair et al., 2021; Kline, 2023).

The final goal was to see if attitudes towards online learning could predict SDLR. In this study, the regression analysis showed that online learning attitudes were a significant predictor, explaining 38.8% of the variance in SDLR. This indicates that although students' perceptions of online learning strongly influenced their readiness for SDL, other factors must also be considered to understand this readiness fully. The findings agree with those by Haris (2024), who noted that although students had average levels of SDLR, they faced challenges with responsibility and problem-solving, highlighting the need for teaching strategies that can develop these skills while encouraging positive attitudes. Additionally, Wijaya and Khoiriyah (2021) found that even students with high levels of SDLR can have varying preferences for online modalities, showing that attitudes and readiness are interconnected in complex ways. Overall, this study not only confirms previous research but also emphasises the important connection between online learning attitudes and SDLR readiness.

In summary, the management students' generally positive online learning attitudes and relatively high levels of SDLR are indicative of a broader trend in higher education, one in which digital methods are increasingly accepted but sound pedagogy and learner support continue to carry weight. The important predictive link identified in this study provides both theoretical support for the existing literature and practical guidance for curriculum development. However, since both online learning attitude and SDLR share overlapping conceptual foundations, particularly in areas of learner autonomy, motivation, and self-regulation, the observed strong correlation (.626) may, to some extent, reflect this theoretical interdependence rather than represent a purely causal influence.

Future studies could therefore benefit from using multivariate analytical approaches, such as multiple regression or SEM, to disentangle shared variance and identify potential mediating or moderating variables (e.g., digital self-efficacy, intrinsic motivation, or institutional support) (Hair et al., 2021; Kline, 2023). As well, the scope of future research could be broadened by investigating additional variables, such as institutional support, digital literacy, and intrinsic motivation, to capture the multifaceted nature of SDLR.

Additionally, this study focused only on management undergraduates, whose field of study tends to prioritise theoretical analysis, case discussions, and conceptual reasoning over extensive laboratory or technical work. These discipline-specific traits may affect both online learning attitudes and SDLR, possibly setting management students apart from those in applied, technical, or creative areas (Biglan, 1973; Becher & Trowler, 2001). Therefore, the results of this study should be viewed with caution when applying them to students in

other academic fields, and future research is recommended to include comparative samples across disciplines to enhance external validity.

## 5. CONCLUSION

This study examined the relationship between attitudes toward online learning and self-directed learning readiness (SDLR) among management undergraduates at Rajamangala University of Technology Phra Nakhon, Thailand, and found that students generally demonstrated moderately positive perceptions of online learning alongside relatively high levels of SDLR. These results indicate that learners in this context were open to digital modes of instruction and capable of autonomous engagement, though the findings should be generalised cautiously, as the sample reflects a discipline characterised by conceptual and independent learning (Biglan, 1973; Becher & Trowler, 2001). The study further confirmed a strong, statistically significant positive association between attitudes toward online learning and SDLR, which may partly stem from their shared theoretical foundations in autonomy, motivation, and self-regulation (Deci & Ryan, 2000; Zimmerman, 2002), rather than reflecting a strictly causal mechanism. The regression model showed that attitudes explained 38.8% of the variance in SDLR, underscoring that, while favourable perceptions facilitate initiative and responsibility for learning, additional influences, such as motivation, institutional support, and digital self-efficacy, are likely to contribute as well. Collectively, these findings underscore the need for universities to design online learning environments that not only provide access but also promote engagement, confidence, and learner responsibility, thereby strengthening lifelong learning capabilities essential for management students. Future research should incorporate cross-disciplinary samples and employ advanced analytical techniques, such as multivariate or structural equation modelling, to clarify causal pathways and examine potential mediating or moderating variables that further illuminate the determinants of SDLR.

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