IRAQI Academic Scientific Journals

University of Kirkuk Journal For Administrative and Economic Science (2025) 15 (3) Part (2): 166-184

UKJAES

University of Kirkuk Journal For Administrative and Economic Science

ISSN:2222-2995 E-ISSN:3079-3521
University of Kirkuk Journal For Administrative and Economic Science

Mohsin Mohammed Abdulazeez. Assessing the Awareness of SaaS Pricing Strategies Among Accounting Specialists in the Kurdistan Region of Iraq: A Statistical Perspective. *University of Kirkuk Journal For Administrative and Economic Science* **(2025) 15 (3) Part (2):166-184.**

Assessing the Awareness of SaaS Pricing Strategies Among Accounting Specialists in the Kurdistan Region of Iraq: A Statistical Perspective

Mohammed Abdulazeez Mohsin [1]

[1] *Collage of Administration & Economic / Salahaddin University, Erbil, Iraq*

mohammed.mohsin@su.edu.ked [1]

Abstract: This study aims to assess the level of awareness among accounting specialists in the Kurdistan Region of Iraq regarding Software as a Service (SaaS) pricing strategy. As SaaS continues to reshape the digital economy, understanding its pricing mechanisms has become a critical competency for accounting professionals and academics alike. However, limited empirical research has examined this awareness within the regional context.

Using a descriptive-analytical methodology, data were collected through a structured questionnaire distributed to a purposive sample of 141 accounting specialists, comprising academics and professionals across various specializations. The study employed non-parametric statistical tests—including the Wilcoxon signed-rank test, Mann-Whitney U test, and Kruskal-Wallis H test—to analyze the differences in awareness levels across demographic and professional groups. Additionally, reliability and exploratory factor analysis were conducted to validate the research instrument and identify underlying dimensions of awareness.

The findings revealed a generally low level of awareness of SaaS pricing strategies among the respondents. Notably, academics demonstrated significantly higher awareness than professionals, while master's degree holders outperformed other educational groups. Awareness was also found to be highest among specialists in managerial and cost accounting, while tax, audit, and information systems professionals showed considerably lower familiarity. Interestingly, years of experience did not significantly impact awareness levels.

The study concludes that a substantial knowledge gap persists in the understanding of SaaS pricing within the accounting field, particularly among professionals. It recommends integrating SaaS pricing topics into academic curricula, expanding professional development initiatives, and encouraging cross-sector collaboration to align accounting competencies with the demands of a digitally transforming business environment.

Keywords: SaaS Pricing Strategies; Accounting Awareness; Cloud-Based Services; Managerial Accounting.

IRAQI Academic Scientific Journals

University of Kirkuk Journal For Administrative and Economic Science (2025) 15 (3) Part (2): 166-184

تقييم مستوى الوعي باستراتيجيات تسعير البرمجيات كخدمة (SaaS) لدى المتخصصين في المحاسبة في إقليم كردستان العراق: منظور إحصائي

ا.م.د. محمد عبد العزيز محسن [1]

[1] كلية الإدارة والاقتصاد / جامعة صلاح الدين، اربيل، العراق

المستخلص: تهدف هذه الدراسة إلى تقييم مستوى الوعي باستراتيجيات تسعير البرمجيات كخدمة (SaaS) لدى المتخصصين في المحاسبة في إقليم كردستان العراق، وهو موضوع لم يحظَ بالاهتمام الكافي على الرغم من الأهمية المتزايدة للخدمات السحابية في إعادة تشكيل الاقتصاد الرقمي. اعتمدت الدراسة المنهج الوصفي التحليلي، حيث جُمعت البيانات من خلال استبانة مُهيكلة وُزعت على عينة قصدية مكونة من (١٤١) متخصصاً في المحاسبة، شملت الأكاديميين والممارسين المهنيين. ولضمان صلاحية أداة البحث، أجري اختبار الموثوقية والتحليل العاملي الاستكشافي، كما استُخدمت اختبارات إحصائية لا معلمية (اختبار ويلكوكسون للرتب الموقعة، اختبار مان–ويتني، واختبار كروسكال–واليس) لتحليل الفروق بين المجموعات الديموغرافية والمهنية.

أظهرت النتائج انخفاضاً عاماً في مستوى الوعي باستراتيجيات تسعيرSaaS ، حيث كان الأكاديميون أكثر إدراكاً بشكل ملحوظ من الممارسين، كما تفوق الحاصلون على درجة الماجستير على غيرهم من الفئات التعليمية. وسُجل أعلى مستوى من الوعي لدى المتخصصين في المحاسبة الإدارية والتكاليف، بينما أظهر العاملون في مجالات الضريبة والتدقيق ونظم المعلومات مستوى أقل بكثير من الإلمام. ومن اللافت أن سنوات الخبرة المهنية لم يكن لها أثر معنوي على مستوى الوعي.

تشير النتائج إلى وجود فجوة معرفية كبيرة في فهم استراتيجيات تسعير SaaS ضمن حقل المحاسبة، وبخاصة في الممارسات المهنية. وتوصي الدراسة بضرورة إدماج موضوعات تسعير SaaS في المناهج الأكاديمية، وتوسيع برامج التطوير المهني، وتعزيز التعاون بين الأوساط الأكاديمية والعملية لتمكين المحاسبين من مواكبة متطلبات بيئة الأعمال الرقمية المتغيرة. وتمتد آثار هذه الدراسة إلى ما هو أبعد من السياق الإقليمي، إذ تقدم رؤى تسهم في النقاشات العالمية حول إعداد المحاسبين للتعامل مع نماذج الأعمال السحابية الناشئة.

الكلمات المفتاحية: استراتيجيات تسعير البرمجيات كخدمة، الادراك المحاسبي، الخدمات المعتمدة على الحوسبة السحابية، المحاسبة الإدارية.

Corresponding Author: E-mail: mohammed.mohsin@su.edu.ked

Introduction

The introduction of Software as a Service (SaaS) pricing models in the accounting sector of the Kurdistan Region is a significant area of study, driven by the continuous evolution of technology and digital finance. SaaS has altered how accounting specialists engage with software, shifting from large upfront investments to subscription-based, cloud-hosted solutions (AL-DDIN, 2024). This change affects the cost structures of accounting services and requires service providers to reconsider their pricing strategies (Hadi et al., 2021). As reliance on digital tools grows, understanding the influence of accounting practices on pricing decisions is crucial for the sustainability and competitiveness of these services in a digitizing market.

Research suggests that accounting knowledge is a key factor in shaping pricing strategies, especially in technology-dependent sectors (Okab & Al-Oqool, 2014). Accounting professionals must manage the complexities of SaaS offerings, which can include variable usage-based pricing, tiered subscriptions, and the costs of ongoing updates, support, and integration. A clear understanding of service delivery costs is necessary for making informed pricing decisions and establishing a strong market position. Furthermore, the ability to track and analyze costs, including the risks of technology adoption, is vital for creating competitive and sustainable pricing models (Androniceanu, 2021).

This study examines the awareness level of accounting specialists in the Kurdistan Region concerning SaaS pricing strategies, highlighting the need for continuous education on emerging digital tools. By exploring the relationship between accounting principles and SaaS pricing, this research aims to identify current levels of understanding among professionals and pinpoint any existing knowledge gaps. The findings will be instrumental in developing effective training

programs to equip accounting professionals with the skills needed to handle the specifics of SaaS pricing, thereby contributing to their organizations' success.

1st: Research Problem

The software industry's shift toward Software-as-a-Service (SaaS) business models makes effective pricing strategies essential for profitability and long-term viability. However, there is a lack of empirical data on the extent to which accounting academics and professionals in the Kurdistan Region of Iraq comprehend these new models. This gap raises important questions about the readiness of the region's academic and professional sectors to adapt to a changing digital business landscape.

Main Research Question: To what degree are accounting academics and professionals in the Kurdistan Region aware of SaaS pricing strategy methods?

2nd: Research Objectives

- To assess the cognitive awareness of SaaS pricing among accounting academics and professionals in the Kurdistan Region.
- To statistically analyze differences in awareness levels between academic and professional respondents.
- To investigate the association between demographic variables (such as specialization, academic credentials, and professional experience) and levels of awareness.
- To provide practical recommendations for enhancing academic curricula and professional development programs based on empirical findings.

3rd: Significance of the Research

From an academic standpoint, this research addresses a crucial local knowledge gap regarding SaaS models, thus facilitating the modernization and relevance of higher education curricula. Professionally, the study provides insights into the current market readiness for integrating advanced pricing and cost management approaches within software services. Methodologically, the research makes a significant contribution by introducing a statistically validated framework for assessing cognitive awareness, thereby laying a foundation for subsequent scholarly inquiries.

4th: Research Hypotheses

Main Hypothesis: H_0: Academics and professionals in the Kurdistan Region lack sufficient awareness regarding SaaS pricing methods.

Sub-Hypotheses:

H_{01}: There are no statistically significant differences in awareness based on the type of occupation (academic vs. professional).

H_{02}: There are no statistically significant differences in awareness related to academic or professional specialization.

H_{03}: There is no statistically significant relationship between the length of professional experience and awareness levels.

H_{04}: There is no statistically significant relationship between academic qualifications and the awareness of SaaS models.

5th: Population and Sample

The target population of this study comprised two distinct groups:

- Accounting **academics**, who are affiliated with public and private universities in the Kurdistan Region
- Accounting **professionals**, specifically **Certified Public Accountants (CPAs),** who are working within the Kurdistan Region

Both were selected due to their direct involvement in accounting theory and practice, particularly in areas relevant to the study of SaaS pricing strategies. A purposive sampling technique was used to ensure that participants possessed relevant academic or professional qualifications in accounting. A total of **141 respondents** completed the survey.

6th: Research Limitations

- Geographical Scope: The research is geographically limited to the Kurdistan Region in Iraq.
- Participant Scope: Only participants with relevant academic or professional backgrounds in accounting.
- Topical Scope: The research exclusively measures awareness levels and does not explore actual practices or institutional implementation outcomes.

Literature review

1- Understanding SaaS Business Models

In the digital economy, software as a service (SaaS) provides a widely used form of services since it is considered the fastest-growing cloud servicing model. Technologically, SaaS means that software or application components are located in the cloud and are accessible via the internet, thus allowing PC clients or mobile devices to connect to the cloud server to use those applications and transformation components (Rrucaj, 2023). The main advantage is that clients have access to the latest offerings and functionalities of software and applications on a subscription basis, as compared to traditional software models. A SaaS product is a completely multitenant application that follows a design pattern offering unique instances of the application for each tenant group on a single infrastructure. In contrast to traditional models, each instance of the application is dedicated to a single tenant. When customers subscribe to a SaaS, they can purchase software contracts such as one-time appointments for the application, recognizing license costs and subscribing to SaaS's perpetual access to the system (Lindström et al.2024).

Acquisition, retention, and monetization strategies are the three key components of a SaaS business model. Acquisition value is the revenue recognized for customers and recognized via SaaS. On the other hand, customer retention is calculated as the net amount charged to customers, less fees owed to customers at the same time (Rrucaj, 2023). Customers still attract full-time loans, which is cash experience for customer acquisition, representing the compromise between customer acquisition and retention identified before the completion of the project. The successful value of customers and customer retention depends on the strong cooperation and effectiveness of customers in acquiring customer sales. If the size of the storage is smaller than the scale of leakage from the customer base, the challenge will remain to build the business. Enhancing the existing business and profit-producing company with a large base of happy customers will create a high-quality source of greater enterprise valuation. Costs are allocated relative to the company's overall SaaS completion revenue during the business model project (Sun et al., 2024)(Saltan & Smolander, 2021). The company adopts its running expenses that are outside the business model. The implementation of an effective buying, maintenance, and monetization approach would have a complex interaction on the operating lifetime and over time as well. Proper avoidance and appraisal of this impact are necessary. A single illustration of such an effect is the importance of customer link contributions. It becomes more crucial when one plans to use the capital usage by large private equity investors (Yoganathan et al.2021).

2- Definition and Characteristics of SaaS

The software-as-a-service (SaaS) model is a category of cloud services that allows users to connect to and use cloud-based applications over the internet. A cloud-based service provider hosts the application in a data center and makes it available to users globally over the internet. In return, customers are charged a periodic fee, usually on a monthly or yearly subscription basis. The service provider not only hosts the application but also manages all its aspects, including providing end-to-end services such as development, maintenance, and continuous operation support (Seifert et al.,

2023). The SaaS model is characterized by certain distinctive elements, including a monthly or yearly subscription for flexible usage, lower upfront investment, and pay-as-you-go features that are beneficial for small or new organizations (Panov, 2022)(Rrucaj, 2023). Another core characteristic is that it is 'automatically updated'; continuous updates, during operational use, reside totally with the service provider. These unique SaaS offerings are hosted on virtual machines but are programmatically isolated based on multi-tenant architecture. Application updates are embedded with the latest software updates, service patches, and security maintenance. The services are built on scalable grounds, ensuring higher performance as per user requirements (Rrucaj, 2023). Each program is designed in such a feasible manner that it can be accessed through any device that fulfills the requirements of an internet server and a web browser. The emergence of 'app store' and 'play store' reflects that SaaS applications have been established as part of our daily life. Add-in software companies offer new and better applications for your SaaS program to ensure the best results. All these characteristics require heavy and different operational costs compared to on-premises software offerings. Furthermore, being a worthy solution for small firms, entrepreneurs, or businesses creates the need for applying a variety of pricing strategies (Olariu & Alboaie, 2023).

3- Key Components of SaaS Business Models

SaaS business models are informed by many essential interrelated components that interact with and influence one another regarding firm profitability and growth potential. SaaS marketers look to acquire customers and must not distinguish between the variety of expensive advertising and digital communication channels and attach the most suitable channels toward these high net acquisition customers (Essoufi, 2023). Marketers charge customers depending on value. The more a user's usage of the resource, the more value they obtain, generating software monetization or software profit. The technological underpinning of a SaaS service comes at an expense related to its level of performance and reliability (Barney et al.2021). SaaS operators invest heavily to avoid these costs and try to create a 'whole product' offering to actually win and keep customers. It is also in their interest to expand quickly and, if at all feasible, without the need for traditional sales and marketing (Jumaa, 2022)(Deuter & Imort, 2021).

As more customers tend to be more profitable, capacity creates customer life cycles that find the retail retention strategies closer to the breakeven point. Although business consumers have a higher willingness to pay—greater economies of scale in offering a 'better deal'—the enhanced expenses to persuade them to switch often result in a lower competitive advantage, if any. Customer acquisition and value proposition are intimately intertwined, with your goods providing the value needed to acquire a lead and beat your competition to effectively win the customer (Furman et al.2021). Financially attractive market segments and products are the red lines linking these components. Configuration or design in one can restrict the options for making a profit or reduce the sustainability of growth in the others. The dataset also illustrates that the appropriateness of cost for acquisition and retention decisions are the primary growth constraints in the SaaS industry with revenue being more disruptive to the industry (Rrucaj, 2023).

4- Importance of Pricing Strategies in SaaS

In SaaS markets, pricing strategies strongly influence consumers' purchase decisions and service providers' revenue streams. Moreover, pricing strategies significantly affect the overall success of SaaS business models. In this context, the pricing method not only concerns the charging or collection of fee decisions in the operational stage but also constitutes a strategy that guides how much and which value a company is targeting. Thus, pricing can be utilized as a strategic instrument to modify customers' perception of the digital good that is designed for a chosen segment of the market (Nagle et al., 2023). In SaaS business, several pricing theories and methods are relevant. The aforementioned spectrum of pricing methods corresponds to different customer desires that affect their intention to accept a service (Saltan & Smolander, 2021).

Other pricing methods could also be considered by SaaS business managers, depending on the customer valuation function and characteristics, paying close attention to the revenue management

principles, which take into account the dynamic pricing that adapts to the market's competitive environment (Saltan & Smolander, 2021). Dynamic pricing could also take into account the turnover of the system and set an optimally variable charge to different customer types, urban populations, and demand slacks, considering information about the customers' behavior collected from the CRM system. Since cost allocation in the SaaS value chain decides profitability, and the SaaS pricing strategy is tied to selecting the profitable customer segment and determining the rates that they are willing to pay, the pricing model must thus also be linked to enhancing the revenue-sharing agreement (Lee2021). The pricing strategy of a firm is closely related to the overall customer value management and segmentation within its value proposition and its cost management, making it key to success in the growing SaaS space (Rrucaj, 2023).

5- Types of Pricing Strategies in SaaS

A. Value-Based Pricing

Value-based pricing is a strategy that determines the price of a product according to the value it generates for customers (De et al.2022). The customer's perception of value is often independent of production costs. A customer's perception of value is shaped by available alternatives, the total cost of ownership, and the product's business impact (Ilyas et al., 2021). To set a value-based price, companies must first understand their audience. Gaining customer insights reveals their business models, operational maturity, and work cultures, all of which influence the value they expect from a product. This also allows a company to see how customers view their product’s value against competitors (Xie et al., 2022).

This understanding informs market segmentation, enabling companies to charge different prices based on how much value their service provides to specific customer groups. Segments often differ by use case, operational maturity, or firmographics. Such a pricing strategy demands a deep knowledge of the market landscape, including a breakdown of customer segments. Information from customer personas and competitor analysis helps companies assess their product-market fit. When executed well, value-based pricing can improve customer satisfaction because the price aligns more closely with the value users receive (Huang et al., 2021). However, customer value is challenging to quantify, leading many organizations to misjudge it. Frequent customer feedback can help, but each company has to decide how to obtain it and what feedback they should use as a basis for pricing. Often, companies need to conduct a price sensitivity study in order to find a customer valuation to use as a basis (Liu et al., 2022). Value-based pricing also requires continuous adjustment. Internal factors can change customer perception of product value, which in turn impacts a customer's willingness to pay. Value-based pricing works best when a market is competitive and unique, and superior value is being provided (Steinbrenner & Turčínková, 2021).

B. Freemium Model

The freemium pricing model is often considered a powerful strategy because it provides basic usability at no cost, making it an effective method for attracting users and converting them into paying customers. This approach is a hybrid, blending elements of a free trial with a traditional freemium structure. The "free" offering must be strategically designed, as there are still delivery costs, and the goal is to demonstrate value that users will eventually pay for (Lemos et al., 2024). A successful balance is crucial, offering enough value to encourage use while including limitations that motivate users to upgrade. However, the freemium strategy has significant drawbacks. The costs associated with supporting a large base of free users must be carefully managed. High user retention is necessary to eventually convert them, which can be costly. Common problems include free users consuming hosting resources without generating revenue. Furthermore, users might expect most features to be free, only willing to pay for highly advanced functions (Abid, 2022). Even minor, unclear limitations can frustrate users and damage their experience. This model is a popular start-up strategy, allowing applications to leverage a large user base to introduce premium services. It is most effective in markets with strong network effects, such as social networks, cloud

computing, and photo sharing. The software's value proposition lies in its ability to build a massive user base and absorb initial losses until a small segment can be monetized. If users are not monetized effectively, the platform will only incur losses. Some firms offset this by using data from free customers to sell targeted advertising (Ulč, 2021)(Gao).

C. Usage-Based Pricing

Arguably the most direct pricing model to value consumption, usage-based pricing platforms charge customers based on how much they use the service, and they typically meter usage levels into tiers. This strategic approach directly aligns the variable costs of the vendor with its value consumption, which should theoretically lead to higher customer satisfaction with fair pricing (Stojkovski et al., 2021). Vendors who cater to a large audience of potential customers scale the value communicated by this approach—that the entire user base is going to use the system at different levels. The notion of lower discount rates is applicable to this level as well. Pricing per usage is flexible, and you can change from one level to another as your usage changes. Keep in mind that most of your SaaS purchase decisions are typically usage commitments and plans. Therefore, the bigger the plan, the longer it will take for the customer to give up on you, ethically speaking. Plan this in your LTV (Degefa et al., 2021).

To get started with usage-based pricing, you first have to evaluate how achieving this kind of alignment corresponds to the costs of doing so. This includes basic functionalities for the most part, with potential upsells to limited free-usage accounts. In any case, you should make usage metrics clear, billing cycles clear, and anticipate some backlash if you've changed the plan for any current customers (Stojkovski et al., 2021). Remember also that finding trends and forecasting revenue when every one of your customers has a fluctuating actual cost to you can become a significant challenge. Yet if you have the underlying volume, usage-based pricing can create real fairness in your customer base and blossoming sales potential through the mouth of your signups willing to grow with you. It feels like the system people want for the future of computing and internet-hosted services. When you do a usage model, look at your current pricing and adjust it for a usage model. If it does not make sense, then maybe it should not be used at this time. This pricing method allows your packages to be for smaller segments, which is also a positive (Cohen et al., 2021).

D. Per-User Pricing

Per-User Pricing Per-user pricing is the gold tier of SaaS pricing. At its core, per-user pricing is exactly as it sounds: you pay a fixed monthly or yearly cost for each user that has access to the service. The beautiful thing about this model is its simplicity, something the best SaaS strives for. No matter what a user does, costs are absolutely predictable. No confusion. No contracts. The Benefits of Per-User Pricing Entrepreneurs like this model because letting users know exactly how much they'll pay is just about the most powerful marketing tool there is (George, 2023). It's also convenient for small to medium businesses. Especially as the company grows and more staff comes on board, it's easy to understand exactly how much budget should go towards these sorts of tools. This way, there are no surprises and nobody gets their hand slapped in regard to budgeting for technology. The Downsides of Per-User Pricing Unpredictability is one. Depending on the service, businesses can have a fluctuating number of users from month to month or year to year. That means the monthly cost for the SaaS would fluctuate as well, and why would a company avoid charging an equivalently fluctuating rate for their own product? Often, solutions that use per-user pricing don't have hidden fees because the entry-level price point is already so low (Saltan, 2021)(Kufaas & Yao, 2023). To make more money, the SaaS will make certain features, integrations, or capabilities exclusive to pricier plans. By bundling features like so and making sure there are only so many, you further commodify the experience. As one of two primary profit points among SaaS, making the price point low and adding unique features to encourage an upgrade will see a high volume yet lower per-unit value. The other is to lock a user into the experience and condition them to the software, then slowly but surely increase the price as much as humanly possible (Sundman, 2024).

E. Tiered Pricing

Tiered pricing addresses complexity by providing customers with various options around one common set of features. With this model, businesses can offer different sets of features, services, or usage amounts alongside each package or tier. Each package increases in price and corresponding value. With tiered pricing, customers can pick which pricing package is most relevant and beneficial for them based on how they intend to use the product or, in some cases, certain buy-in levels (Gielens et al.2021).Why Would You Choose to Offer a Tiered Pricing Plan? Tiered pricing offers the advantage of driving more revenue for the company over time. Specifically, with differentiated packages, companies can potentially grow quickly. This is because these new groups of end-users are different customer personas, possibly from varied geographic regions and who have various use cases, but who are also representing different markets and thus a broader customer segment (Bayatra, 2023).

Furthermore, having different tiers can also increase customer satisfaction. By having multiple levels available for pricing, you can increase the overall perceived value of what you provide. When offered multiple options, it feels like users have choices, which staves off any feelings of restriction. By unbundling and providing more options with tiered pricing, you can also then do upselling between your own packages. This means anyone can change their level of service and features as wanted and needed as their needs and business change (Jayathilaka, 2021).

F. SaaS in the Kurdistan Region

Kurdistan presents a promising opportunity for the adoption of SaaS pricing strategies, with a growing demand for these models. Currently, awareness of SaaS in the Kurdistan Region remains limited; among 20 surveyed individuals, only one was knowledgeable about SaaS and its pricing structures. This gap in understanding is largely because these business models are still emerging in Kurdistan, in contrast to their established presence in regions like Europe and North America (Khsroo et al.2024). Moreover, the region's software and internet sectors are relatively underdeveloped compared to global standards. Many local software companies in the Kurdistan Region utilize suboptimal pricing, such as free services or flat-rate subscriptions, without considering the negative long-term effects on their sustainability. Although firms in neighboring countries have adopted more relevant pricing strategies, these practices have not been widely adopted by Kurdish companies (Kouladoum et al., 2022), indicating a clear opportunity for innovation. Accountants are essential in navigating this landscape. They can help organizations analyze the financial outcomes of different pricing strategies and align new models with business objectives. Through comprehensive cost and market analysis, accountants offer valuable insights for establishing competitive and sustainable pricing. Furthermore, they can monitor the financial performance of these strategies, helping companies mitigate the risks of poorly planned pricing. Their expertise in financial reporting supports data-driven decisions on pricing alternatives, promoting the adoption of more effective strategies in the region (Al et al., 2022).

G. The Researcher's Insight into the Reviewed Literature

The existing literature shows a growing global focus on Software-as-a-Service (SaaS) business models, emphasizing strategic pricing to influence customer behavior, optimize revenue, and ensure long-term viability. However, most research on SaaS pricing is concentrated on technologically advanced and mature markets. There has been limited academic focus on emerging economies like the Kurdistan Region of Iraq, specifically concerning the perception and understanding of SaaS pricing models among accounting academics and professionals. This gap points to a significant area for investigation, particularly given the digital transformation currently underway in accounting and business services.

Based on this gap in the literature, the researcher finds it necessary to explore the level of awareness among accounting academics and professionals in the Kurdistan Region. The study aims to examine whether differences exist across demographic or professional characteristics and to provide

recommendations that may support the integration of SaaS pricing knowledge into academic curricula and professional training within the accounting field.

Statistical findings

1- Normality Assumption Analysis

The Shapiro-Wilk test was used to determine whether the awareness scores in the various groups were normal. t-tests are a popular statistical method, depend on the assumption that the data are regularly distributed; if this assumption is not met, the validity of the findings may be compromised. This makes the test crucial. Table 1 reveals that the majority of groups' awareness ratings showed non-normal distributions, with most groups' results significantly deviating from normality, such as academics with p-value (0.033), professionals with p-value (0.010), and MSc holders with p-value (0.008). However, there were no notable differences among specific specialized groups, those with 6–15 years of experience, or PhD holders (p-value =0.301). Based on these results, it may be more acceptable to use non-parametric tests to analyze awareness scores in the majority of groups.

Table (1): Shapiro–Wilk Test of Normality for SaaS Awareness Scores Across Demographic Groups

Factors	Levels	Shapiro-Wilk		
		Statistic	df	Sig.
Occupation	Academic	0.970	93	0.033
	Professional	0.935	48	0.010
Education Background	PhD	0.971	46	0.301
	MSc	0.932	48	0.008
	Chartered Accountant	0.934	47	0.011
Experience	1 - 5	0.954	98	0.002
	6 - 10	0.931	26	0.082
	11 - 15	0.961	16	0.689
Specialists	Financial	0.982	45	0.694
	Mangerial & Cost	0.956	28	0.280
	Tax	0.957	10	0.747
	Information System	0.859	10	0.075
	Audit	0.935	48	0.010

2- Single Item Assessment

The Wilcoxon Signed-Rank Test was used to determine whether or whether participants' assessments of specific claims on SaaS awareness and pricing strategies deviated significantly from a neutral benchmark value of 3, which on the Likert scale denotes a moderate or neutral level of agreement. The findings showed that the median scores for each of the 20 assertions in Table 2 were much less than 3, and this suggested that participants generally displayed below-neutral agreement with each item.

Specifically, participants stated restricted agreement with foundational knowledge statements such as *"I have a general understanding of the concept of Software as a Service (SaaS) as a business model"* (Mean = 2.837, SD = 0.529, p-value < 0.001), *"I can distinguish between SaaS and traditional software licensing models"* (Mean = 2.716, SD = 0.525, p-value < 0.001), and *"I am aware that SaaS involves continuous cloud-based service provision"* (Mean = 2.809, SD = 0.520, p-value < 0.001).

Similarly, awareness of pricing models was also remarkably limited. For example, replies to statements like *"I am familiar with various pricing strategies adopted in SaaS models"* (Mean = 2.794), *"I believe value-based pricing focuses on perceived customer value rather than production costs"* (Mean = 2.787), and *"I understand how pricing strategies influence financial performance*

indicators" (Mean = 2.752) all showed statistically significant negative deviations from the test value (all $p < 0.001$).

Table (2): Descriptive Statistics and Wilcoxon Signed-Rank Test Results for SaaS Pricing Awareness Statements

Statements	N	Mean ± SD	Test value = 3
			Mean Difference (p-value)
I have a general understanding of the concept of Software as a Service (SaaS) as a business model.	141	2.837 ± 0.529	-0.216 (0.000)
I can distinguish between SaaS and traditional software licensing models.	141	2.716 ± 0.525	-0.163 (0.000)
I am aware that SaaS involves continuous cloud-based service provision managed by the provider.	141	2.809 ± 0.520	-0.284 (0.000)
I am familiar with various pricing strategies adopted in SaaS models.	141	2.794 ± 0.514	-0.191 (0.000)
Per-user pricing is one of the most straightforward models to understand and implement.	141	2.816 ± 0.529	-0.206 (0.000)
Usage-based pricing offers greater fairness to customers compared to other models.	141	2.816 ± 0.472	-0.184 (0.000)
The freemium model is effective for user acquisition but requires careful management for profitability.	141	2.773 ± 0.565	-0.184 (0.000)
I believe value-based pricing focuses on perceived customer value rather than production costs.	141	2.787 ± 0.545	-0.227 (0.000)
I am knowledgeable about tiered pricing models that offer different service levels to users.	141	2.787 ± 0.545	-0.213 (0.000)
I can differentiate between monthly and annual subscription pricing in terms of revenue implications.	141	2.716 ± 0.552	-0.213 (0.000)
SaaS operations incur continuous costs that require dynamic pricing approaches.	141	2.844 ± 0.497	-0.284 (0.000)
SaaS pricing is influenced by user behavior and service consumption patterns.	141	2.787 ± 0.545	-0.156 (0.000)
I can assess when the freemium model is appropriate and when it may not be effective.	141	2.801 ± 0.537	-0.213 (0.000)
Value-based pricing requires thorough market and competitor analysis to determine perceived value.	141	2.723 ± 0.480	-0.199 (0.000)
I believe that accountants' awareness of pricing strategies affects their financial decisions.	141	2.766 ± 0.488	-0.277 (0.000)
Tiered pricing can be used as an effective marketing tool to attract diverse customer segments.	141	2.816 ± 0.581	-0.234 (0.000)
I understand how pricing strategies influence financial performance indicators (e.g., profitability, retention).	141	2.752 ± 0.587	-0.184 (0.000)
I can explain how pricing models are used to reduce churn rates in SaaS businesses.	141	2.823 ± 0.601	-0.248 (0.000)
I consider knowledge of SaaS pricing strategies to be a key competency for modern cost accountants.	141	2.773 ± 0.578	-0.177 (0.001)
I actively follow developments in SaaS pricing strategies as part of my academic or professional interests.	141	2.745 ± 0.590	-0.227 (0.000)
Average Score	141	2.784 ± 0.353	-0.255 (0.000)
Wilcoxon Signed-Rank Test			

Notably, even practical knowledge areas, such as *"I actively follow developments in SaaS pricing strategies"* (Mean = 2.745) and *"I consider knowledge of SaaS pricing strategies to be a key competency for modern cost accountants"* (Mean = 2.773), were rated significantly below 3.

3- Factor Effective Evaluations

In order to assess the primary hypothesis, a Wilcoxon Signed-Rank test was also used to see if the average awareness score of accounting specialists in the Kurdistan Region deviates substantially from 3, a benchmark figure that, on a Likert-type scale, indicates a moderately high degree of

awareness. Based on data from 141 respondents, the research found that respondents generally evaluated their awareness below the expected threshold, with a mean awareness score of 2.78.
All statements had an average score of (2.784), which was significantly different from the neutral benchmark (p-value < 0.001). According to them, these results imply that respondents generally showed little knowledge and comprehension of SaaS pricing schemes, which strongly contradicts the null hypothesis that target population awareness levels are adequate or neutral.
These results offer compelling statistical support for rejecting the null hypothesis (H_0) that Kurdistan Region accounting experts are sufficiently knowledgeable about SaaS pricing techniques. According to the data, the target population's general awareness is far lower than anticipated, suggesting a possible knowledge gap in this new field of financial technology.
As indicated in Table 2, the Mann-Whitney U test was employed for comparisons between two groups and the Kruskal-Wallis H test for comparisons among more than two groups due to the non-normal distribution of the awareness ratings.

Table (3): Group Differences in Awareness Scores Across Demographic and Professional Factors Using Mann-Whitney U and Kruskal-Wallis H Tests

Factors	Levels	Mean ± SD	Test value (p-value)
Occupation	Academic	2.843 ± 0.349	1584.5 (0.005)[a]
	Professional	2.670 ± 0.336	
Education Background	PhD	2.767 ± 0.301	12.278 (0.002)[b]
	MSc	2.904 ± 0.385	
	Chartered Accountant	2.678 ± 0.335	
Experience	1 - 5	2.806 ± 0.383	2.532 (0.470)[b]
	6 - 10	2.742 ± 0.253	
	11 - 15	2.725 ± 0.311	
	>= 16	2.700 ± 0.000	
Specialists	Financial	2.876 ± 0.320	31.700 (0.000)[b]
	Managerial & Cost	3.023 ± 0.224	
	Tax	2.510 ± 0.333	
	Information System	2.525 ± 0.374	
	Audit	2.670 ± 0.336	

a) Mann-Whiteny U test; b) Kruskal Wallis H test

Academics reported a greater mean awareness score (M = 2.843 ± 0.349) than professionals (M = 2.670 ± 0.336), according to the Mann-Whitney U test, which revealed a statistically significant difference in awareness levels between the two groups (U = 1584.5, p = 0.005). This implies that compared to their professional counterparts, academic respondents are more knowledgeable about SaaS pricing schemes. A density map comparing the distribution of SaaS pricing awareness scores between academic and professional participants is shown in Figure 1. The curves demonstrate that both groups' awareness levels are centered around comparable values, however their dispersion and shape differ noticeably.

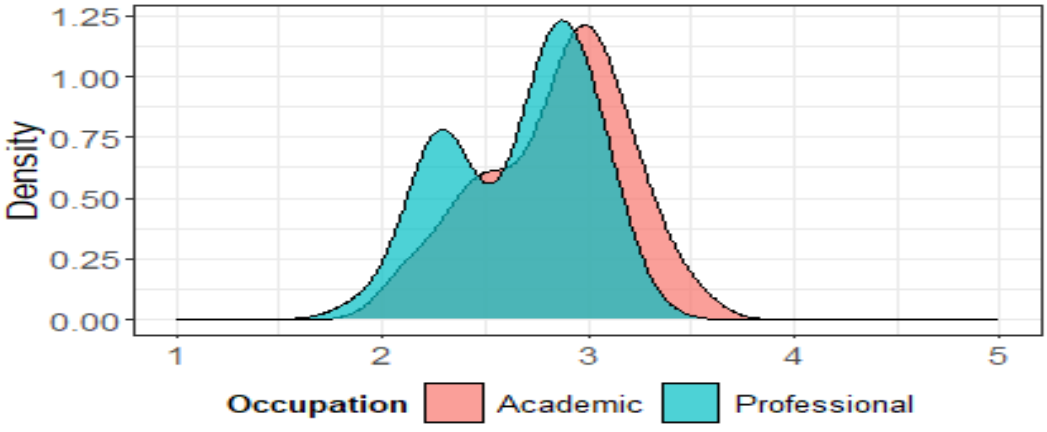

Figure (1): Distribution of SaaS Pricing Awareness Scores by Occupation

A Significant difference in awareness according to educational background was found using the Kruskal-Wallis H test (p-value = 0.002). The highest average awareness was indicated by respondents with a Master's degree (2.904), followed by those with a PhD (2.767), and the lowest knowledge was given by chartered accountants (2.678). These results imply that exposure to or interaction with SaaS pricing principles may be influenced by academic credentials.

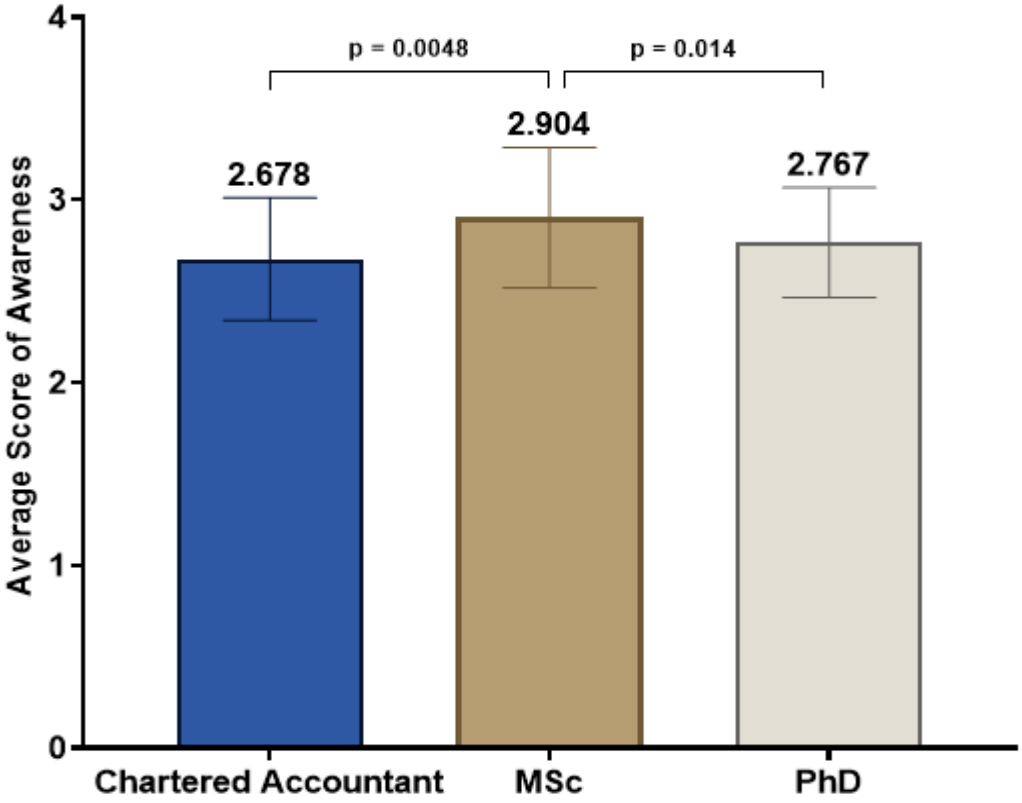

Figure (2): Error-bar chart illustration of Education background levels

As seen in Figure 2, pairwise comparisons using the Mann-Whitney U test demonstrated substantial variations in awareness scores according to schooling. Compared to both PhD holders (p-value = 0.014) and chartered accountants (p-value = 0.001), MSc holders had noticeably greater understanding. There was no discernible difference between chartered accountants and PhD holders (p-value = 0.239). These results imply that MSc holders typically have a better grasp of SaaS pricing strategies than other groups, maybe as a result of their more recent or applicable schooling.

In contrast, there was no statistically significant difference in awareness levels between years of professional experience (p-value = 0.470), showing that awareness was not always correlated with years of professional experience. SaaS pricing awareness scores were evenly spread throughout all experience categories, as seen in Figure 3. There were no discernible variations in awareness according to experience level, as the peaks for each group were tightly linked. The previous non-significant Kruskal-Wallis test result was supported by this visual pattern.

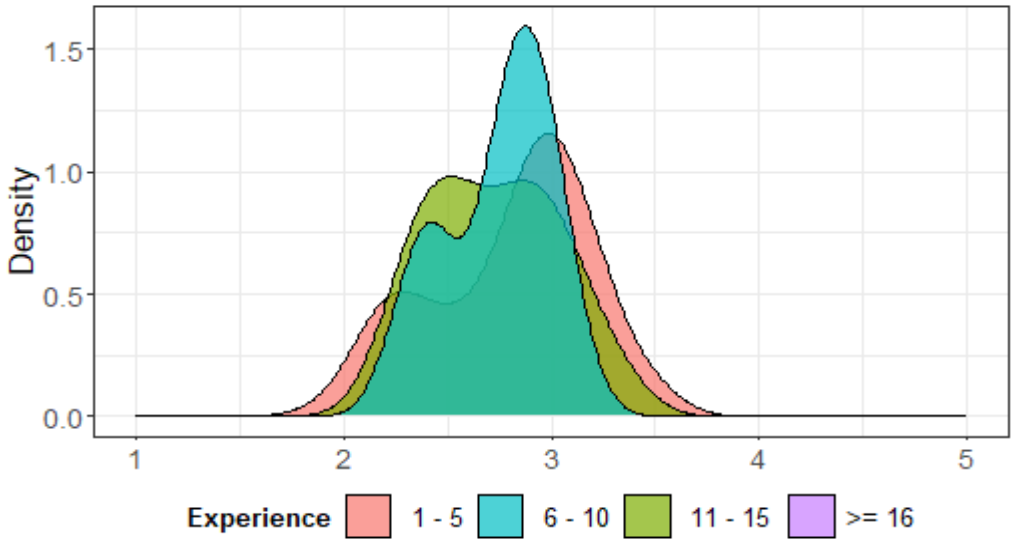

Figure (3): SaaS Awareness Distribution by Experience Level

Nonetheless, there was a strong correlation between awareness scores and specialization area (p-value < 0.001). Managerial and cost accounting specialists indicated the highest level of awareness with mean value (3.023), followed by financial accounting specialists (2.876). However, with mean scores of 2.510, 2.525, and 2.670, respectively, those in the Taxation, Information Systems, and Audit departments had noticeably lesser awareness. This implies that some accounting disciplines were more directly related to SaaS pricing expertise, perhaps as a result of their applicability in financial modeling, cost control, and budgeting.

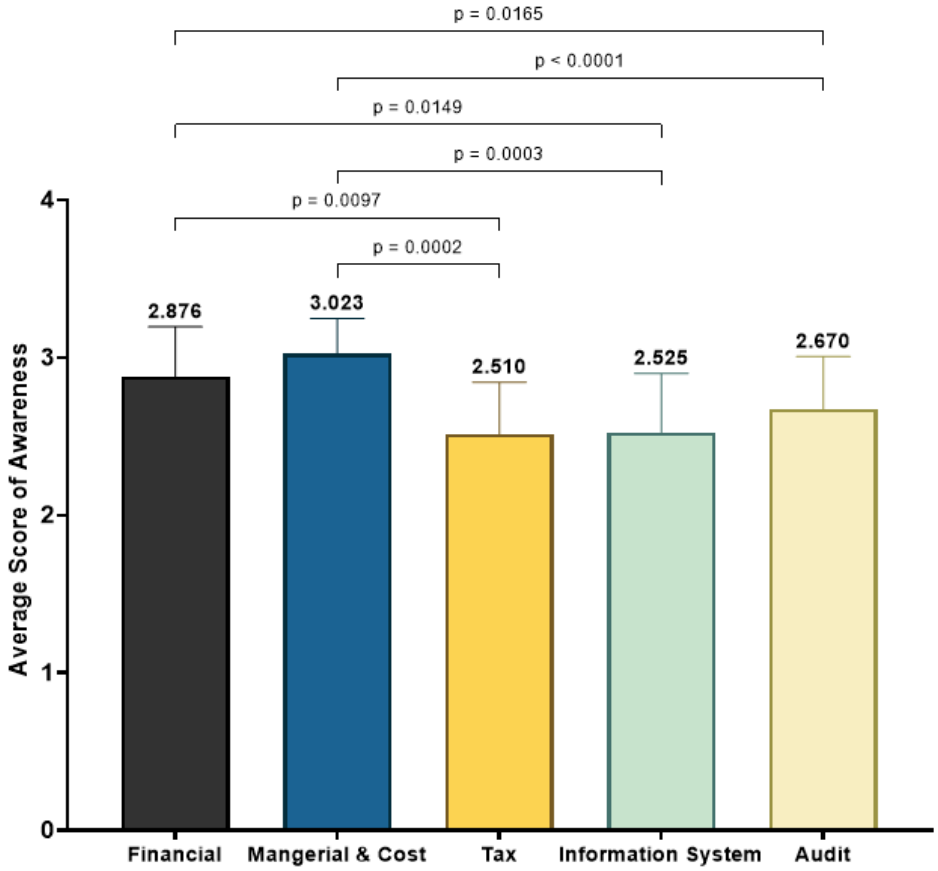

Figure (3): Error bar chart post-hoc comparison across specialist's levels

According to Figure 4, the examination of pairwise comparisons across various accounting specialties showed a number of statistically significant variations in SaaS pricing strategy awareness. The awareness levels of managerial and cost accountants were consistently greater than those of auditors (p-value < 0.001), tax specialists (p-value < 0.001), and information system specialists (p-value = 0.002). Similar to this, financial specialists showed a considerably greater level of awareness than audit specialists (p-value = 0.006), tax specialists (p-value = 0.005), and information system specialists (p-value = 0.008). The difference between Financial and Managerial & Cost specialists was likewise less but still significant (p-value = 0.048), favoring the latter.

Comparing the lower-performing categories, Tax, Information Systems, and Audit, on the other hand, revealed no appreciable variations, suggesting that these specializations have a similar and typically lower degree of awareness.

According to these findings, managers and cost accountants are more aware of SaaS pricing techniques, probably because they have a closer hand in financial planning, pricing, and cost control decisions. The results emphasize the necessity of providing tax, IT, and audit experts with focused awareness training in order to close the knowledge gap and guarantee compliance with contemporary SaaS business practices.

Overall, the results showed that while experience length did not seem to have a major impact on SaaS pricing awareness, occupation, education level, and specialization did.

4- Item Consistency and Factor Analysis

The internal consistency of the 20-item test testing knowledge of SaaS pricing schemes was evaluated by a reliability study. With a Cronbach's Alpha of 0.929, the results showed good dependability. This implies that the scale's elements measure the same underlying construct—namely, knowledge and comprehension of SaaS pricing concepts—with a high degree of consistency.

The internal consistency of the scale was further supported by the item-total statistics as indicated in Table 4. Each item had a significant correlation with the overall scale, as evidenced by the adjusted item-total correlations, which ranged from 0.496 to 0.700 and all items exceeded the generally recognized criterion of 0.3. Furthermore, the "Cronbach's Alpha if Item Deleted" column demonstrated that eliminating any one item would not significantly raise the alpha overall, indicating that every item enhances the scale's dependability.

Table (4): Item-Total Statistics and Internal Consistency of the SaaS Pricing Awareness Scale

Items	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
I have a general understanding of the concept of Software as a Service (SaaS) as a business model.	52.8440	45.618	0.552	0.927
I can distinguish between SaaS and traditional software licensing models.	52.9645	44.863	0.669	0.925
I am aware that SaaS involves continuous cloud-based service provision managed by the provider.	52.8723	45.784	0.539	0.927
I am familiar with various pricing strategies adopted in SaaS models.	52.8865	45.158	0.640	0.925
Per-user pricing is one of the most straightforward models to understand and implement.	52.8652	44.703	0.687	0.924
Usage-based pricing offers greater fairness to customers compared to other models.	52.8652	46.232	0.528	0.927
The freemium model is effective for user acquisition but requires careful management for profitability.	52.9078	44.684	0.641	0.925
I believe value-based pricing focuses on perceived customer value rather than	52.8936	44.996	0.623	0.926

production costs.				
I am knowledgeable about tiered pricing models that offer different service levels to users.	52.8936	44.853	0.643	0.925
I can differentiate between monthly and annual subscription pricing in terms of revenue implications.	52.9645	45.577	0.532	0.927
SaaS operations incur continuous costs that require dynamic pricing approaches.	52.8369	45.809	0.564	0.927
SaaS pricing is influenced by user behavior and service consumption patterns.	52.8936	44.867	0.641	0.925
I can assess when the freemium model is appropriate and when it may not be effective.	52.8794	45.107	0.617	0.926
Value-based pricing requires thorough market and competitor analysis to determine perceived value.	52.9574	45.712	0.602	0.926
I believe that accountants' awareness of pricing strategies affects their financial decisions.	52.9149	46.321	0.496	0.928
Tiered pricing can be used as an effective marketing tool to attract diverse customer segments.	52.8652	45.275	0.542	0.927
I understand how pricing strategies influence financial performance indicators (e.g., profitability, retention).	52.9291	44.352	0.658	0.925
I can explain how pricing models are used to reduce churn rates in SaaS businesses.	52.8582	44.537	0.617	0.926
I consider knowledge of SaaS pricing strategies to be a key competency for modern cost accountants.	52.9078	44.141	0.700	0.924
I actively follow developments in SaaS pricing strategies as part of my academic or professional interests.	52.9362	44.503	0.634	0.925

These results imply that the 20-item scale is a strong and trustworthy tool for evaluating accounting professionals' knowledge of SaaS pricing tactics. It is appropriate for additional analysis, such as factor analysis, group comparisons, and the calculation of composite scores.

The 20-item awareness measure was subjected to a Principal Component Analysis (PCA) with Varimax rotation in order to investigate the fundamental structure of SaaS pricing strategy awareness in greater detail. In keeping with the study's overarching goal of assessing the breadth and depth of awareness among academics and accounting professionals, the goal was to distill the number of observed variables into interpretable underlying dimensions in order to determine how respondents' awareness is cognitively organized.

A significant Bartlett's Test of Sphericity ($\chi^2(190) = 1183.66$, $p < .001$), which confirmed that the correlation matrix was not an identity matrix, and a high Kaiser-Meyer-Olkin (KMO) value of 0.945, which demonstrated excellent sampling adequacy, indicated that the data were suitable for factor analysis. Additionally, the determinant value was close to zero, indicating that multicollinearity was controllable as shown in Table 5.

Table (5): KMO and Bartlett's Test of Sampling Adequacy and Sphericity for Factor Analysis

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.945
Bartlett's Test of Sphericity	Approx. Chi-Square	1183.659
	df	190
	Sig.	0.000

Two components were recovered using the eigenvalue >1 criteria, and when combined, they explained 48.15% of the variance (Component 1: 25.61%, Component 2: 22.55%). The communalities, which varied from 0.30 to 0.61, demonstrated that the extracted components accounted for a significant amount of the variance in each item.

Table (6): Rotated Component Matrix for Exploratory Factor Analysis of SaaS Pricing Awareness Dimensions

Statement	Component 1 Strategic Awareness	Component 2 Conceptual Awareness
Usage-based pricing offers greater fairness to customers compared to other models.	0.675	
I am knowledgeable about tiered pricing models that offer different service levels to users.	0.664	
Tiered pricing can be used as an effective marketing tool to attract diverse customer segments.	0.657	
I consider knowledge of SaaS pricing strategies to be a key competency for modern cost accountants.	0.650	
I can assess when the freemium model is appropriate and when it may not be effective.	0.627	
I believe value-based pricing focuses on perceived customer value rather than production costs.	0.625	
SaaS pricing is influenced by user behavior and service consumption patterns.	0.618	
I can explain how pricing models are used to reduce churn rates in SaaS businesses.	0.567	
I can distinguish between SaaS and traditional software licensing models.	0.548	
Value-based pricing requires thorough market and competitor analysis to determine perceived value.	0.514	
I am aware that SaaS involves continuous cloud-based service provision managed by the provider.	0.477	
I believe that accountants' awareness of pricing strategies affects their financial decisions.	0.398	
I can differentiate between monthly and annual subscription pricing in terms of revenue implications.		0.774
I understand how pricing strategies influence financial performance indicators (e.g., profitability, retention).		0.682
I actively follow developments in SaaS pricing strategies as part of my academic or professional interests.		0.668
I am familiar with various pricing strategies adopted in SaaS models.		0.619
SaaS operations incur continuous costs that require dynamic pricing approaches.		0.586
I have a general understanding of the concept of Software as a Service (SaaS) as a business model.		0.570
Per-user pricing is one of the most straightforward models to understand and implement.		0.565
The freemium model is effective for user acquisition but requires careful management for profitability.		0.525
Total (eigenvalue)	**5.121**	**4.509**
% of Variance	**25.61%**	**22.55%**
Cumulative %	**25.61%**	**48.15%**

Interpreting the Components:

•"Strategic Pricing Awareness" seems to be reflected in Component 1, which includes information pertaining to certain pricing models (such as freemium, value-based, tiered, and usage-based), their strategic application, and their relationships to customer segmentation, market behavior, and churn. This covers things like "Value-based pricing focuses on perceived value," "Usage-based pricing offers fairness," and "Tiered pricing as a marketing tool." It implies that respondents with good scores on this criterion understand the deployment of various SaaS pricing models and their rationale.

•Component 2 focuses on more general knowledge items about "Operational and Conceptual Awareness" of SaaS, such as foundational knowledge ("What is SaaS?" and "SaaS vs. traditional models"), financial implications ("Monthly vs. annual pricing," "Revenue impact," and "Cost structures"), and broader professional engagement (e.g., "Following SaaS pricing developments"). A more scholarly or systematic view of SaaS as a business and financial model is reflected in this characteristic.

The factor structure helps the study achieve its goal of evaluating awareness in a comprehensive way, including both in-depth strategic knowledge about how SaaS pricing actually operates and fundamental familiarity with SaaS. Accounting professionals can gain a more nuanced view of their knowledge gaps by distinguishing between two different aspects. For example, someone may be aware of the SaaS idea but be unsure of when to employ value-based pricing versus tiered pricing or how it impacts customer retention.

For professional organizations, training providers, and curriculum designers looking to close knowledge gaps in financial technology education, this information is essential. Additionally, it supports the validity of your survey instrument's structure, defending its usage in subsequent regional or global research of a comparable nature.

Key Findings

The empirical results indicate a consistently low level of awareness among accounting professionals and academics in the Kurdistan Region regarding SaaS pricing strategies. The mean awareness score across all measured items was significantly below the neutral benchmark, reflecting a fundamental knowledge gap in both conceptual and strategic dimensions of SaaS pricing.

Further analysis revealed that:

•Academics exhibited significantly higher awareness than professionals, suggesting a lag in professional development in the field.

•Master's degree holders demonstrated the highest awareness, potentially reflecting the currency of their academic training.

•Specialization had a notable effect, with managerial and cost accounting specialists outperforming their peers in tax, audit, and information systems.

•Years of professional experience were not associated with higher awareness, suggesting that tenure alone does not enhance familiarity with emerging pricing models.

Based on the statistical results, the level of awareness regarding pricing strategies in the SaaS environment appears to be low among both academics and professionals. Therefore, the accounting analysis and interpretation of these results will negatively impact product pricing in the digital economy by miscalculating cost structures and the timing of revenue recognition. It may also impact the assessment of risks associated with pricing models specific to this environment. From an academic perspective, the results indicate a real gap between accounting education and SaaS pricing models in the local environment. Bridging this gap is essential to enhancing the quality of modern accounting pricing decisions.

Recommendations

Based on the findings, the following recommendations are proposed:

- Curriculum Development: Academic institutions should integrate SaaS pricing strategies into accounting and finance programs, particularly at the undergraduate and master's levels.
- Professional Training: Targeted workshops and continuing education programs should be introduced by professional associations to improve awareness among practicing accountants, especially in audit, tax, and information systems.
- Certification Reform: Accounting certification bodies are encouraged to revise their exam content and training materials to include contemporary pricing strategies in SaaS and cloud-based models.
- Industry Collaboration: Partnerships between academic institutions and SaaS providers should be fostered to offer practical case-based learning experiences for students and professionals.
- Specialized Career Paths: Encourage the development of specialized roles in SaaS financial planning and pricing analysis, particularly for managerial and cost accountants who demonstrate the highest awareness.
- Ongoing Research and Monitoring: Further studies should assess the impact of increased awareness on the adoption and profitability of SaaS pricing strategies within local firms.

References:

1- Abid, H. (2022) 'A review on the most common pricing strategies', *International Journal of Finance, Insurance and Risk Management*, 12(2), pp. 79–88.
2- Al Refiay, H.A.N., Abdulhussein, A.S. and Al Shaikh, S.S.K. (2022) 'The impact of financial accounting in decision making processes in business', *International Journal of Professional Business Review*, 7(4), Article e0719. https://doi.org/10.26668/businessreview/2022.v7i4.719
3- AL-DDIN, A.E.S.A. (2024) *Factors influencing the adoption of integrated zero-based budgeting with SaaS in Yemeni public sector* [Unpublished doctoral dissertation]. University of Sanaa.
4- Androniceanu, A. (2021) 'Transparency in public administration as a challenge for a good democratic governance', *Revista Administratie si Management Public*, (36), pp. 149–164.
5- Barney, J.B., Ketchen Jr, D.J. and Wright, M. (2021) 'Resource-based theory and the value creation framework', *Journal of Management*, 47(7), pp. 1936–1955.
6- Bayatra, I. (2023) *Cracking the Product Marketing Code: Craft Winning Go-to-Market Strategies for Market Domination. * Independently published. ISBN: 9798387263727.
7- Cohen, M.C., Miao, S. and Wang, Y. (2021) *Dynamic pricing with fairness constraints*. SSRN. Available at: https://ssrn.com/abstract=3930622
8- De Toni, D., Reche, R.A. and Milan, G.S. (2022) 'Effects of market orientation, innovation strategies and value-based pricing on market performance', *International Journal of Productivity and Performance Management*, 71(8), pp. 3556–3580.
9- Degefa, M.Z., Sperstad, I.B. and Sæle, H. (2021) 'Comprehensive classifications and characterizations of power system flexibility resources', *Electric Power Systems Research*, 194, Article 107025. https://doi.org/10.1016/j.epsr.2021.107025
10- Deuter, A. and Imort, S. (2021) 'Product lifecycle management with the asset administration shell', *Computers*, 10(2), Article 15. https://doi.org/10.3390/computers10020015
11- Essoufi, M. (2023) *Optimising customer acquisition for SaaS subscription-based companies: Case: Smart Match App*. Available at: https://theseus.fi
12- Furman, E., Diamant, A. and Kristal, M. (2021) 'Customer acquisition and retention: A fluid approach for staffing', *Production and Operations Management*, 30(11), pp. 4236–4257.
13- Gao, R. (n.d.) 'On the importance of pricing strategy in marketing strategy: A case study of Lululemon', *Frontiers in Business*. [Online] Available at: https://example.com
14- George, A.S. (2023) 'Deciphering the path to cost efficiency and sustainability in the Snowflake environment', *Partners Universal International Innovation Journal*, 6(1), pp. 15–22.
15- Gielens, K. et al. (2021) 'The future of private labels: Towards a smart private label strategy', *Journal of Retailing*, 97(1), pp. 99–115.
16- Hadi, H.J., Omar, M.A. and Osman, W.R.S. (2021) 'Investigating the determinants of CC-SaaS adoption in Iraqi public organisations from the perspective of IT professionals', *International Journal of Engineering Research and Technology*, 14(2), pp. 130–143.

17- Huang, Y. et al. (2021) 'Buy, lease, or share? Consumer preferences for innovative business models in the market for electric vehicles', *Technological Forecasting and Social Change*, 166, Article 120639.
18- Ilyas, G.B. et al. (2021) 'The influence of digital marketing and customer perceived value through customer satisfaction on customer loyalty', *Journal of Legal Ethical and Regulatory Issues*, 24(2), p. 1.
19- Jayathilaka, U.R. (2021) 'Investigating the relationship between pricing strategies and international customer acquisition in the early stage of SaaS: The role of hybrid pricing', *ResearchBerg Review of Science and Technology*, 1(1), pp. 84–100.
20- Jumaa, A. (2022) *Transforming towards "PaaS" offerings: Areas of concern for OEMs & Transformation Readiness Scale*. Available at: https://diva-portal.org
21- Khsroo, I.T.N. et al. (2024) 'The influence of technological factors on adoption of e-commerce in SMEs: The role of trust', *Journal of Global Information Technology Management*, 27(2), pp. 148–167.
22- Kouladoum, J.C., Wirajing, M.A.K. and Nchofoung, T.N. (2022) 'Digital technologies and financial inclusion in Sub-Saharan Africa', *Telecommunications Policy*, 46(7), Article 102343.
23- Kshatri, V. (2022) *Customer success in SaaS industry – what is it and how can it be achieved?* Available at: https://polito.it
24- Kufaas, S. and Yao, L., 2023. *The price of information: Evaluating customer responses to Information-as-a-Service (InaaS) pricing models – An explorative case study with three InaaS companies.* [online] Available at: https://openaccess.nhh.no/handle/11250/3129458 [Accessed 04 Feb 2025].
25- Lee, I. (2021) 'Pricing and profit management models for SaaS providers and IaaS providers', *Journal of Theoretical and Applied Electronic Commerce Research*, 16(4), pp. 859–873.
26- Lemos, N., Machado, C.S. and Cardoso, C. (2024) 'Free apps and paid apps: Monetization strategies for health apps in the Portuguese market', *International Journal of Pharmaceutical and Healthcare Marketing*, 18(2), pp. 237–251.
27- Lindström, C.W.J., Maleki Vishkaei, B. and De Giovanni, P. (2024) 'Subscription-based business models in the context of tech firms: Theory and applications', *International Journal of Industrial Engineering and Operations Management*, 6(3), pp. 256–274.
28- Liu, C., Lee, C.K.M. and Zhang, L.L. (2022) 'Pricing strategy in a dual-channel supply chain with overconfident consumers', *Computers & Industrial Engineering*, 167, Article 107962.
29- Nagle, T.T., Müller, G. and Gruyaert, E., 2023. *The strategy and tactics of pricing: A guide to growing more profitably.* [online] Available at: https://www.hoasen.edu.vn [Accessed 02 June 2025].
30- Okab, R. and Al-Oqool, M.A., 2014. Accounting knowledge as one of the most important factors affecting the pricing of e-banking services: A field study in Jordanian banks. *Journal of Economics and Sustainable Development*, **5**(2), pp.125–136.
31- Olariu, F. and Alboaie, L. (2023) 'Challenges in optimizing migration costs from on-premises to Microsoft Azure', *Procedia Computer Science*, 219, pp. 656–661.
32- Panov, A. (2022) *Subscription and payment systems for SaaS applications* [Master's thesis, LAB University of Applied Sciences]. Theseus. Available at: https://urn.fi/URN:NBN:fi:amk-2022053013343 (Accessed: 1 July 2025).
33- Rrucaj, A. (2023) *Creating and sustaining competitive advantage in the software as a service (SaaS) industry: Best practices for strategic management*. Available at: https://theseus.fi
34- Saltan, A. (2021) *Revealing the state of software-as-a-service pricing*. Available at: https://lut.fi
35- Saltan, A. and Smolander, K. (2021) *Bridging the state-of-the-art and the state-of-the-practice of SaaS pricing: A multivocal literature review*. Information and Software Technology, 133, Article 106510. https://doi.org/10.1016/j.infsof.2021.106510
36- Saltan, A. and Smolander, K. (2021) 'How SaaS companies price their products: Insights from an industry study', in *Software Business: ICSOB 2020 – 11th International Conference*, Springer, pp. 1–13.
37- Seifert, M., Kuehnel, S. and Sackmann, S. (2023) 'Hybrid clouds arising from software as a service adoption: Challenges, solutions, and future research directions', *ACM Computing Surveys*. [Ahead of print]
38- Steinbrenner, F. and Turčínková, J. (2021) 'The value-based pricing determination matrix for pricing method selection', *Central European Business Review*, 10(3), pp. 24–38.
39- Stojkovski, I., Achleitner, A.K. and Lange, T. (2021) *Equipment as a service: The transition towards usage-based business models*. SSRN. Available at: https://ssrn.com/abstract=3763004
40- Sun, Y., Wang, Z.J., Deveci, M. and Chen, Z.S. (2024) 'Optimal releasing strategy of enterprise software firms facing the competition from cloud providers', *Expert Systems with Applications*, 241, Article 120188.
41- Sundman, R. (2024) *Opportunities and obstacles of different pricing models for early-stage SaaS companies in retail and e-commerce*. Available at: https://theseus.fi
42- Ulč, J. (2021) 'Technology start-up marketing strategy and lifecycle: First empirical findings by qualitative research', *Trends Economics and Management*, 15(36), pp. 9–18.
43- Xie, C. et al. (2022) 'Tourism e-commerce live streaming: Identifying and testing a value-based marketing framework from the live streamer perspective', *Tourism Management*, 91, Article 104466.
44- Yoganathan, V., Osburg, V.S. and Bartikowski, B. (2021) 'Building better employer brands through employee social media competence and online social capital', *Psychology & Marketing*, 38(3), pp. 524–536.