

Table 1 presents the representation of the Business Model Canvas (BMC) in the business model of the 181 surveyed entrepreneurs. Among the total entrepreneurs, 34.3% had a basic representation of the BMC, 34.8% had an intermediate representation, and 30.9% had a high representation. In other words, regardless of the level of knowledge in the four

main areas of a business: (a) customer interface, (b) product, (c) infrastructure management, and (d) financial aspects, 34.3% had a basic representation of the nine modules of the BMC, 34.8% had an intermediate representation, and 30.9% had a high representation.

Table 1. Frequency table of the Business Model Canvas

	Frequency	Percentage	Percentage valid	Percentage accumulated
Basic	62	34.3%	34.3%	34.3%
Intermediate	63	34.8%	34.8%	69.1%
High	56	30.9%	30.9%	100.0%
Total	181	100.0%	100%	

Source: Own elaboration.

Table 2 shows the association between the customer interface area and the BMC; of the 100% of respondents, 34.8% have a basic knowledge of the customer interface area; that is, basic knowledge of their market segments, communication and distribution channels, and customer relationships; of these, 26.5% have a basic representation of the BMC, 6.6% have an intermediate representation, and 1.7% have a high representation. Likewise, of the 100%, 41.4% have an intermediate knowledge of the customer

interface area; of these, 7.2% have a basic representation of the BMC, 22.7% have an intermediate representation and 11.6% have a high representation. Finally, of the 100% of entrepreneurs, 23.8% have a high knowledge of the customer interface area; of these, 0.6% have a basic representation of the BMC, 5.5% have an intermediate representation and 17.7% have a high representation.

Table 2. Association between the customer interface area and the BMC.

			Business Model Canvas			Total
			Basic	Intermediate	High	
Customer interface	Basic knowledge	Count	48	12	3	63
		% of total	26.5%	6.6%	1.7%	34.8%
	Intermediate knowledge	Count	13	41	21	75
		% of total	7.2%	22.7%	11.6%	41.4%
	High knowledge	Count	1	10	32	43
		% of total	0.6%	5.5%	17.7%	23.8%
Total	Count	62	63	56	181	
	% of total	34.3%	34.8%	30.9%	100.0%	

Source: Own elaboration.

Table 3 shows the association between the product area and the BMC; of the 100% of respondents, 37% have basic knowledge of the product area, that is, basic knowledge of the value proposition of their products or services, which serve to solve the problems or satisfy the needs of their customers; of these, 23.8% have a basic representation of the BMC, 12.2% have an intermediate representation and 1.1% have a high representation. Likewise, of the 100%, 37% have an intermediate knowledge of the product area;

9.4% have a basic representation of the BMC, 16% have an intermediate representation, and 11.6% have a high representation. Finally, of the 100% of entrepreneurs, 26% have a high knowledge of the product area; of these, 1.1% have a basic representation of the BMC, 6.6% have an intermediate representation, and 18.2% have a high representation.

Table 3. Association between the product area and the Business Model Canvas

			Business Model Canvas			Total
			Basic	Intermediate	High	

Product	Basic knowledge	Count	43	22	2	67
		% of total	23.8%	12.2%	1.1%	37.0%
	Intermediate knowledge	Count	17	29	21	67
		% of total	9.4%	16.0%	11.6%	37.0%
	High knowledge	Count	2	12	33	47
		% of total	1.1%	6.6%	18.2%	26.0%
Total	Count	62	63	56	181	
	% of total	34.3%	34.8%	30.9%	100.0%	

Source: Own elaboration.

Table 4 shows the association between the area of infrastructure management and BMC; of the 100% of respondents, 34.8% have basic knowledge of the area of infrastructure management, that is, basic knowledge of the necessary assets or key resources for a business to function; basic knowledge of the activities or actions that a business must undertake to function; and basic knowledge of the strategic alliances that contribute to the functioning of the business; of these, 28.7% have a basic representation of BMC, 5.5% have an intermediate representation and 0.6%

have a high representation. Likewise, of the 100%, 32% have an intermediate knowledge of the infrastructure management area; of these, 4.4% have a basic representation of the BMC, 21.5% have an intermediate representation, and 6.1% have a high representation. Finally, of the 100% of entrepreneurs, 33.1% have a high knowledge of the area of infrastructure management; of these, 1.1% have a basic representation of the BMC, 7.7% have an intermediate representation, and 24.3% have a high representation.

Table 4. Association between the infrastructure management area and the BMC

		Business Model Canvas			Total	
		Basic	Intermediate	High		
Infrastructure management	Basic knowledge	Count	52	10	1	63
		% of total	28.7%	5.5%	0.6%	34.8%
	Intermediate knowledge	Count	8	39	11	58
		% of total	4.4%	21.5%	6.1%	32.0%
	High knowledge	Count	2	14	44	60
		% of total	1.1%	7.7%	24.3%	33.1%
Total	Count	62	63	56	181	
	% of total	34.3%	34.8%	30.9%	100.0%	

Source: Own elaboration.

Table 5 shows the association between the area of financial aspects and the BMC; of the 100% of respondents, 35.9% have basic knowledge of the area of financial aspects, that is, basic knowledge of the sources of income when customers purchase the product or service; basic knowledge of the costs involved in starting up the business; of these, 28.7% have a basic representation of the BMC and 7.2% have an intermediate representation. Likewise, of the 100%,

41.4% have an intermediate knowledge of economic aspects; of these, 5.5% have a basic representation of the BMC, 23.8% have an intermediate representation, and 12.2% have a high representation. Finally, of the 100% of entrepreneurs, 22.7% have a high knowledge of financial aspects; of these, 3.9% have an intermediate representation of the BMC, and 18.8% have a high representation.

Table 5. Association between the area of financial aspects and the BMC

		Business Model Canvas			Total	
		Basic	Intermediate	High		
Financial aspects	Basic knowledge	Count	52	13	0	65
		% of total	28.7%	7.2%	0.0%	35.9%
	Intermediate knowledge	Count	10	43	22	75
		% of total	5.5%	23.8%	12.2%	41.4%

High knowledge	Count	0	7	34	41
	% of total	0.0%	3.9%	18.8%	22.7%
Total	Count	62	63	56	181
	% of total	34.3%	34.8%	30.9%	100.0%

Source: Own elaboration.

Table 6 shows the association of the four main areas of the entrepreneurs' business with the nine modules of the Business Model Canvas. Therefore, the chi-square test showed that there are dependency relationships between the four areas of the business and the BMC, with a significance level of the chi-square test less than 0.05 (Sig.<0.01); this result confirms the hypothesis stated, in which it was

indicated that the four main areas of the entrepreneurs' business model have a significant association with the nine modules of the Business Model Canvas. In addition, the results are ratified by the contingency coefficient that showed a positive and significant association.

Table 6. Chi-square test and symmetrical measures

	Business Model Canvas				
	Pearson's square	Chi-	Asymptotic significance	Contingency ratio	Approximate significance
Customer Interface	106.490171		0.000	0.609	0.000
Product	74.382568		0.000	0.540	0.000
Infrastructure management	148.089135		0.000	0.671	0.000
Financials	138.059255		0.000	0.658	0.000

Source: Own elaboration.

2. Discussion

The study provides theoretical and practical knowledge to entrepreneurs, business owners, managers, executives, consultants, academics, and students because the Business Model Canvas is a tool that assists in designing business models for companies.^{22,45} Furthermore, professionals use it worldwide.^{23,46,47} Based on the results of the present study, a positive and significant association is demonstrated between the four main areas of entrepreneurs' businesses proposed by Keane et al. (2018)³³ and the nine modules of the Business Model Canvas. Additionally, the chi-square test showed dependent relationships between the four business areas and the BMC. Furthermore, there is a positive and significant association between (1) customer interface and BMC (0.609); (2) product and BMC (0.540); (3) infrastructure management and BMC (0.671); and (4) financial aspects and BMC (0.658). Therefore, the results confirm the hypothesized association, indicating that the four main areas of entrepreneurs' business models are significantly associated with the nine modules of the Business Model Canvas.

The customer interface area and the BMC have a positive association. However, out of the 100% surveyed entrepreneurs, 76.2% have basic to intermediate knowledge of the customer interface area. In other words, they need to learn more about customer segments, communication and distribution channels, and customer relationships. Therefore, entrepreneurs need to seek a stronger market positioning. This result is consistent with

the study by Umar et al. (2018),³⁶ who indicated that competition rises as the number of small businesses increases, which can lead to economic losses or bankruptcy. Therefore, to face competition and before using the BMC, small businesses must recognize their market position and prepare a marketing mix strategy to confront tough competition.

The product area and the BMC have a positive association. However, out of the 100% surveyed entrepreneurs, 74% have basic to intermediate knowledge of the product area. In other words, they need to gain more knowledge of value propositions or how to address their customers' problems and needs. Therefore, entrepreneurs must strengthen their value proposition to compete in the market. This result aligns with the study by Vicelli and Tolfo (2017),³⁹ who indicated that the competitiveness of companies is often associated with their ability to create value, and the Business Model Canvas is an alternative to defining the value proposition of different business models.

The infrastructure management area and the BMC have a positive association. However, out of the 100% surveyed entrepreneurs, 66.8% have basic to intermediate knowledge of infrastructure management. Despite this result, it is the area with the highest knowledge (33.2%) among entrepreneurs because they naturally possess more knowledge of the internal aspects of the company.⁴⁸⁻⁵⁰ In other words, they have greater knowledge of their key resources, activities, and partnerships. This result is consistent with the study by Mukherjee (2021),³¹ who indicated that the business model of micro-entrepreneurs

in India focuses on key partners and resource planning, customer orientation, and sales.

The financial aspects area and the BMC have a positive association. However, out of the 100% surveyed entrepreneurs, 77.3% have basic to intermediate knowledge of financial aspects. In other words, they need to learn more about cost structure and revenue streams. Therefore, entrepreneurs must enhance their financial literacy and become part of financial inclusion and education. This result aligns with the study by Widjajanti et al. (2022),⁹ who indicated that business management within micro, small, and medium-sized enterprises remains weak in various areas. Thus, the BMC is a tool that can be applied to make small businesses more sustainable over time.

The research allowed for the evaluation of the importance of the Business Model Canvas among entrepreneurs of micro and small enterprises linked to International Business students. Therefore, it provides primary information for entrepreneurs, business owners, managers, executives, consultants, academics, and students. However, it has yet to be evaluated in companies with similar characteristics, limiting the provision of sector-specific information on the representation of the Business Model Canvas in entrepreneurs' business models.^{51,52}

The four main areas of a business model: (1) customer interface, (2) product, (3) infrastructure management, and (4) financial aspects, have a positive association with the nine modules of the Business Model Canvas. However, out of the 100% of surveyed entrepreneurs, 76.2%, 74%, 66.8%, and 77.3% have basic to intermediate knowledge of the customer interface, product, infrastructure management, and financial aspects, respectively. Therefore, entrepreneurs of micro and small businesses need to seek stronger market positioning, strengthen their value proposition to be competitive, engage in better resource planning and key partnerships, and enhance their financial literacy and inclusion. Moreover, this study lays the groundwork for future research to continue evaluating the importance of the Business Model Canvas in entrepreneurs' business models in different sectors and locations within the country, considering the four main business areas proposed by Keane et al. (2018).³³

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