

The effect of business model innovation on organization performance

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ABSTRACT

The aim of the study is to investigate the impact of business model innovation (BMI) on firm performance. The sample of the study consisted of 120 managers from Alban Al-youm Company in Jordan, a leading dairy company. Data were collected using a questionnaire administered to managers. Eighty-seven questionnaires were retrieved valid for the purpose of data analysis. BMI was measured using three components: value creation, value proposition and value capture innovations while company performance was assessed via self-rated questions about operational measures of performance. The results accepted the hypotheses that all dimensions of BMI had significant effects on company performance. That being so, the study contributed to the literature on BMI on company performance in the absence of such studies that use samples for Arab countries, particularly, from Jordan in one of the most vital industries, which is a dairy industry.

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1. Introduction

Several reasons are behind studying and introducing business models. Firstly, authors were interested in expanding our understanding of business models foundations (e.g., Filet, 2013) and exploring prerequisites and barriers of BMI applications. Other researchers try to investigate the relationships between BMI and other variables like organizational performance (Hartmann et al., 2013). Secondly, business model was introduced for the purposes of innovation commercialization (Amit & Zott, 2010; Teece, 2010; Chesbrough, 2010). Thirdly, some authors explored business models in the context of sustainable innovation (Boons & Ludeke-Freund, 2013; Lopes et al., 2019). According to Euchner and Ganguly (2014), a company can capture a value from its innovation efforts using what is called the BMI. According to Filet (2013), the concept has been applied to classify firms on the basis of performance and innovation. Despite the increased attention paid to business models by researchers, no consensus in the literature was found the definition of the concept. However, the term had been referred to novel behaviors applied to the dimensions of business model, like resources, stakeholders and marketing related functions (Marolt et al., 2018). BMI was introduced to enable organizations to achieve objectives such as creating new markets (Amit and Zott, 2010), to gain a long-term profitability (Kastalli & Van Looy, 2013) and to improve business performance (Kranich & Wald, 2018). Reviewing the literature on BMI and business performance revealed some studies that carried out using different companies like a global industrial company with many national subsidiaries (Kastalli & Van Looy, 2013), manufacturing companies around the world selected through Osiris database (Visnjic et al., 2016), and online retailing companies in the U.S.A. (Kim and Min, 2015). Some other studies were theoretically designed to study BMI (e.g., Spieth et al., 2014) or to explore the effect of BMI innovation on business model performance (Karimi & Walter, 2016). Some studies used BMI as a mediating variable (Guo et al., 2017).

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Nonetheless, few studies were conducted to examine the impact of BMI using samples from Arab countries and particularly from Jordan. Consequently, this study aims at examining the impact of BMI using a sample of managers working at a Jordanian dairy company.

2. Literature review

2.1 Business model definition

Numerous definitions of the business model (BM) had been published in the literature. Nonetheless, no consensus for the definition of this variable was established (Hartmann et al., 2013). Some definitions (e.g., Baden-Fuller & Haefliger, 2013) conceptualized the model as a customer-related system dedicated to single out customers, exploring their needs and ensuring their satisfaction. In fact, this definition underlined three principal features of BM, which are customer selection, identification of customer needs and customer satisfaction. These features had appeared in different ways and various sites in the literature of business models.

In the same context, Teece (2010) indicated that a BM reports firms' mechanisms of value creation and delivery. It constitutes managers' explanations of customer needs, means of value delivery preferred by customers, customer ability to pay as well as firms' capability to meet customer needs. Teece's perspective of BM model can be segmented into several elements, which are customer needs, value generation and provision, customer purchase power, and firms' preparedness to engender customer satisfaction. It was noted that this definition added new considerations to the structure of BM, such as those related to customer ability to pay and firm capability to meet his or her needs. In agreement with that, Sorescu et al. (2011) identified two major purposes of a BM, which are value creation for customers and value appropriation for the firm itself and firm's partners. Value creation refers to three customer-oriented constructs: customer efficiency, customer effectiveness as well as customer engagement, while value appropriation refers to operational efficiency, operational effectiveness and customer lock-in.

2.2 Business model innovation definition

Lopes et al. (2019) suggested a model comprised BM and innovation perspectives as well as sustainability transitions. In the BM part, there were three major components; target customer, value proposition and network partner. For the authors, BM was described in terms of value proposition, value generation and provision along with economic value used to align organizational capital to organizational strategies. Comparing this definition to the three attributes mentioned earlier, i.e., customer selection, needs and satisfaction, demonstrates a consensus on the components of BM. Moreover, the functions of BM divulged by Chesbrough (2010); value proposition articulation, market segmentation, definition of value chain structure, identification of revenue generation mechanisms, cost and profit structure estimation, description of a firm's position within customer-supplier network value, and competitive strategy formulation put on new elements of the same structure. Boons and Lüdeke-Freund (2013) recognized four components of BM, which are in addition to the financial model, value proposition, supply chain, and customer interface. The authors conceptualize value proposition as the value embedded in the firm's products and services. Supply chain, on the other hand, describes supplier relationship management. Customer interface, in this regard, represents customer relationship management. Finally, benefits and costs acquired or incurred on the grounds of the previously mentioned components signifies the financial model. In consonance with Teece (2010), BM can be achieved using: market segmentation, identification of segments value proposition, design and implementation of segments value capture mechanisms, and mechanisms isolation to block competitors' imitation. Based on the above-stated definitions, one can think of BM as a multi-stage system customized to aggrandize firm performance leaning on two pillars; the organization and the consumer, by which an organization segments the market, puts its finger on customer needs, recognizes customer purchasing power, locates value(s) that meet these needs, pinpoints the organization capability to meet those needs in light of costs and profits, designs methods of producing and delivering value, and ensures protection against competitors. Innovation was signified in the literature as new methods used by the firm to achieve its BM activities and purposes. Therefore, BMI was operationalized as new methods utilized by firms to create, deliver and capture value (Spieth et al., 2014). According to Bucherer et al. (2012), a BMI is a process that initiates change in the principal elements of the firm. As a key source of the firm's innovativeness, BM helps the firm to create a new market for its products and services or help it to create or invest market opportunities (Amit and Zott, 2010). In addition, managers can ask employees to bring ideas which may lead to achieve of corporate overall performance (Alnajdawi et al. (2017). In the scale developed by Clauss (2017) to measure BMI, three components of BMI were proposed: value creation innovation, value proposition innovation and value capture innovation.

Ibarra et al. (2018) found that companies should adopt new changes in the components of their business models, i.e., value creation, value proposition and value capture in order to be able to achieve the requirements of BMI. Such changes in terms of value creation are related to efficient production, connection of internal and external process of the company with the processes of the suppliers, employee training, data driven transparent decisions, real-time information about manufacturing, sales, and inventories, new physical and human resources. Changes of value proposition include new offers, smart products, customer segmentation and direct relationships. Finally, cost optimization and saving, and new streams of revenues are examples of value capture changes.

2.3 Dimensions of business model innovation

Andreassen et al. (2018) indicated that BM value could be created through interactions and transactions of the involved parties, i.e., resources suppliers and buyers, as well as reduction of transactions costs. Chesbrough and Rosenbloom (2002) and

Chesbrough (2007) identified six functions of business models: determining the value proposition, signifies market segments, identifying the value chain structure, estimating costs and profits of the produced offers, detailing the position of the firm in the value network, and constructing the competitive strategy of the firm. Clauss (2017) and Matzler et al. (2013) identified three dimensions that can be used to assess the BMI, which are value creation, value proposition and value capture innovation. According to Matzler et al. (2013), the profitable BM is the one that consists of high value creation and high value capture. In a study by Visnjic et al. (2016), BMI was divided into product-oriented business model and customer-oriented business model.

2.4 Business model innovation and firm performance

Generally, prior research identified a positive effect of BMI as measured by value creation, value proposition, and value capture on firm performance. So recently, managers agree that more efficiency and productivity are required more than the past (Banyhamdan et al. (2020)). Moreover, some authors underlined the importance of some mediating and moderating factors in such a relationship. For Teece (2010), a business model is a key driver of organizational performance. Conducting an empirical study on the Australian pension industry, Hartmann et al. (2013) found a positive influence of BMI on firm performance. In their study in Long Range Planning on business models and technological innovation, Baden-Fuller and Haefliger (2013) indicated that business models mediate the relationship between technology and firm performance. Other authors (e.g., Huang et al., 2012, Kranich and Wald, 2018) revealed similar findings. Khaddam (2020) shows that Personnel Creativity impact strategic agility through Knowledge management which increases understanding of organization how these variables interact to create value to customers and develop strategies. Heij et al. (2014) pointed out that two types of BMI, which are renewal and replication, had a significant effect on firm performance. The results of Gerdoçi et al. (2018) indicated that novelty-centered BM had a significant effect on firm performance in contrast to efficiency-centered BM. In a study on BMI and firm performance, Latifi and Bowman (2018) identified several factors that mediate and moderate the impact of BMI on firm performance. Examples of factors moderated that relationship include firm characteristics and BM practices, while factors mediated that relationship cover revenue growth, efficiency growth and organizational capabilities enhancement. Moreover, Hartmann et al. (2013) showed that the effect of BMI on the performance of the firm was moderated by both the size and experience of the firm. Consequently, the following sub-hypotheses were suggested:

H₁: Value creation innovation has a significant impact on company performance.

H₂: Value proposition innovation has a significant impact on company performance.

H₃: Value capture innovation has a significant impact on company performance.

3. Methodology

3.1 Research sample and data collection

A sample of managers of Alban Al-youm company, a leading dairy company in Jordan, was selected to collect research data. The sample encompassed 100 managers from all managerial levels. The sample size was deemed representative since the company has 100 managers. A total of 100 questionnaires were administered to research sample. Out of them, 11 were excluded due to incomplete responses, while 87 questionnaires were used for data analysis.

3.2 Research instrument

BMI was measured as shown in Table 1 by three major dimensions: value creation, value proposition and value capture innovation. Company performance was measured by 5 items.

Table 1
Measurements of BMI and company performance

Dimensions	Items	Authors
Value creation innovation	1. The company emphasizes transactions simplicity to reduce mistakes.	Bowman and Ambrosini (2000), Amit and Zott (2001), Matzler et al. (2013)
	2. Our customers are familiar with our transactions.	
	3. The company delivers effective and efficient offers.	
	4. We possess valuable resources that meet customer needs in reasonable costs	
	5. Our customers are satisfied with the value we delivered.	
Value proposition innovation	6. Our company provides customers with high quality products	Chesbrough and Rosenbloom (2002), Lindič and Marques da Silva (2011), Skálén et al. (2015).
	7. Flexibility in providing our service is key priority	
	8. Performance of our employees is good	
	9. We assess our customer perceived value periodically.	
Value capture innovation	10. A major part of our value proposition is to support customer value creation	Bowman and Ambrosini (2000), Hall and Roelich (2016), Yang et al. (2017).
	11. We use our resources innovatively to generate profit	
	12. Our products value is adequate for customer willingness to pay.	
	13. value capture policy is built on expanding our market share	
Company performance	14. A key factor in our production process to capture a value is product quality	Stup et al. (2006), Singh et al. (2016), Gunasekaran et al. (2015), Mohan and Sequeira (2016).
	15. Our company achieves a good level of return on assets	
	16. The company has a good share in the dairy market	
	17. The company provides innovation-based products	
	18. The company has achieved outstanding performance in the past three years.	
	19. The company carries out its activities efficiently and effectively	

Table 1 indicates that value creation was measured using 5 items related to transactions simplicity, transaction familiarity, market offers, valuable resources used to meet customer needs, and customer satisfaction with value created (Bowman & Ambrosini, 2000; Amit & Zott, 2001, Matzler et al., 2013). Value proposition was assessed by 5 items refer to high quality products, service

flexibility, employee performance, customer perceived value, and customer value creation support (Chesbrough and Rosenbloom, 2002, Lindič & Marques da Silva, 2011, Skálén et al., 2015). Value capture was appraised via 4 items concerned innovative use of resources, customer willingness to pay, market share expansion and quality of products (Bowman & Ambrosini, 2000, Hall & Roelich, 2016, Yang et al., 2017). On the other hand, company performance was measured operationally using 5 items related to return on assets, market share, innovation-based products, company performance in the past three years, and company ability to carry out its activities efficiently and effectively (Stup et al., 2006, Singh et al., 2016, Gunasekaran et al., 2015, Mohan & Sequeira, 2016). For company performance rating, participants were asked to rate company performance from their perspectives.

3.3 Research model

A conceptual model as shown in Fig. 1 was constructed in order to portray research hypotheses. Part (a) of the model represents the impact of BMI on company performance, while part (b) demonstrates the proposed effects of BMI on company performance. Hypothesis 1 as depicted in part (a) was examined using BMI a whole construct and hypotheses (H01-H03) were tested separately in the same model.

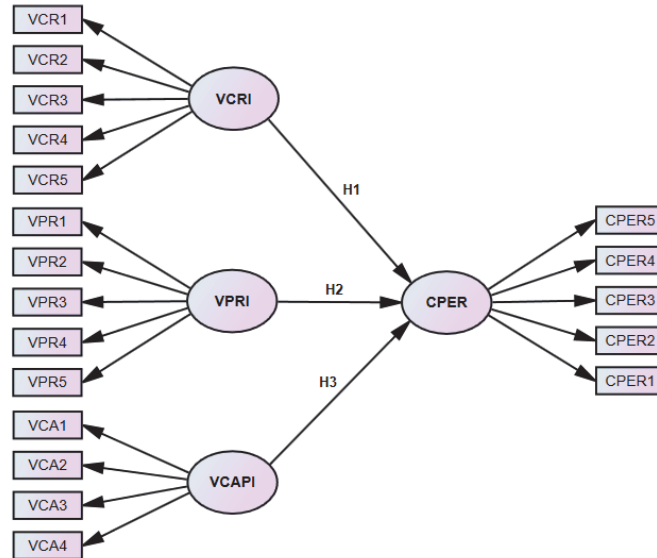


Fig. 1. Research conceptual model

3.4 Reliability and validity

Reliability was evaluated using Cronbach’s alpha coefficients and validity was measured via average variance extracted (AVE) was used to evaluate validity. AVE was extracted on the basis of exploratory factor analysis (EFA) carried out using current data. Results of descriptive statistics, standardized factor loadings (SFL), AVE values, composite reliability and Cronbach’s alpha coefficients are shown in Table 2.

Table 2
Descriptive statistics, factor loadings and reliability and validity results

Variables	Items	M	SD	SFL	AVE	CR	α
Value creation innovation	VCR1	3.71	1.01	0.789	0.584	0.875	0.881
	VCR2	3.74	0.98	0.708			
	VCR3	3.76	0.84	0.748			
	VCR4	3.81	0.96	0.726			
	VCR5	3.78	1.12	0.842			
Value proposition innovation	VPR1	3.79	0.67	0.834	0.656	0.905	0.911
	VPR2	3.74	0.74	0.741			
	VPR3	3.94	0.91	0.753			
	VPR4	3.75	1.05	0.851			
	VPR5	2.98	1.13	0.864			
Value capture innovation	VCA1	3.77	0.84	0.853	0.747	0.922	0.932
	VCA2	3.89	0.93	0.842			
	VCA3	2.86	0.73	0.864			
	VCA4	3.73	0.64	0.897			
Company performance	CPER1	3.74	0.99	0.884	0.667	0.909	0.924
	CPER2	3.79	1.07	0.862			
	CPER3	3.82	0.93	0.836			
	CPER4	3.72	0.75	0.769			
	CPER5	3.88	0.83	0.721			

Means of all items as shown in Table 2 were moderate with values ranged from 2.861 to 3.94. SFL values were in the required cut-off value since all of them were higher than 0.50 (Pommier et al., 2020). Moreover, AVE values were greater than 0.50 (Chong et al., 2020). The results in Table 2 indicated that CR and Cronbach's alpha coefficient were also acceptable since their value is greater than 0.70 (Batayneh & Abu-Hussien, 2016, Seman et al., 2018, Irtaimeh, 2018, López-Núñez et al., 2020).

4. Data analysis and results

4.1 Research measurement model

Confirmatory factors analysis (CFA) was carried out in order to examine the validity of the measurement model and its usability to be converted to a structural one, by which research hypotheses can be tested. Fig. 2 shows the measurement model in which 4 constructs were associated and Table 3 presents the results of the model goodness-of-fit indices, in which the results of 4 indices were reported.

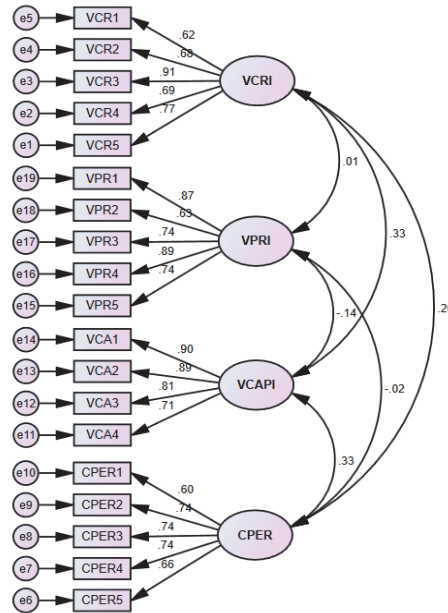


Fig. 2. Research measurement model

4.2 Goodness-of-fit indices

According to the results in Table 3, it was noted that the measurement model is valid in terms of goodness-of-fit indices: CMIN/DF (χ^2/df), comparative fit index (CFI), and Root mean square error of approximation (RMSEA). The results showed that χ^2/df is less than 3.0 (Kuoch et al., 2019), CFI is close to 0.9 (Gieure et al., 2019) and RMSEA is less than 0.08 (Bonfils et al., 2015).

Table 3
Results of goodness-of-fit indices

Index	Index value	Cut-off value	Reference
CMIN/DF	1.33	< 3.00	Kuoch et al. (2019)
CFI	0.942	> 0.90	Gieure et al. (2019)
TLI	0.933	> 0.90	Shi et al. (2019)
RMSEA	0.062	< 0.08	Bonfils et al. (2015)

4.3 Research structural model

IBM SPSS 25.0 and AMOS 22.0 were used to conduct structural equation modeling (SEM) to construct the structural model in Fig. 3 by which research hypotheses were tested. The model presents an examination of three hypotheses, i.e., H01, H02, and H03 in which value creation innovation, value proposition innovation, and value capture innovation were presumed to exert significant effects on company performance. The results, as reiterated in Table 4 indicate that all BMI dimensions had significant effects on company performance. Value creation innovation had a significant effect on company performance ($\beta = 0.10$, C.R. = 2.32, $P = 0.020$).

Additionally, value proposition had a significant effect on company performance ($\beta = 0.24$, C.R. = 4.05, $P = 0.000$) and value capture innovation had a significant effect on company performance ($\beta = 0.32$, C.R. = 8.16, $P = 0.001$). However, the effect of value capture innovation was the higher on company performance, followed by the effect of value proposition innovation, then, the effect of value creation innovation.

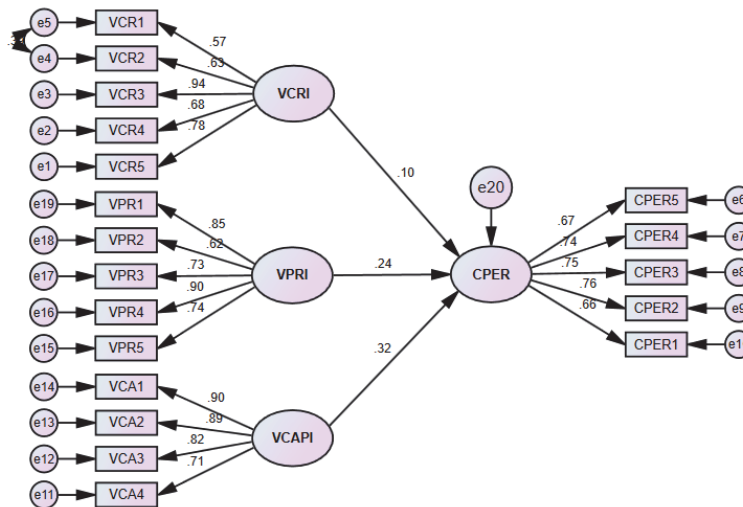


Fig. 3. Research structural model

Table 4
Results of hypotheses testing

	Paths		β	C.R.	P *
Value creation innovation	→	Company performance	0.10	2.32	0.020
Value proposition innovation	→	Company performance	0.24	4.05	0.000
Value capture innovation	→	Company performance	0.32	8.16	0.001

* significant at 0.001

5. Results discussion and conclusion

The aim of this study was to examine the impact of BMI as measured by value creation innovation, value proposition innovation, and value capture innovation, on company performance. The hypotheses that these three dimensions of BMI have significant effects on company performance were supported. These results are in agreement of several prior studies, in which the positive effect of BMI on organizational performance was established (e.g., Teece, 2010, Hartmann et al., 2013, Baden-Fuller & Haefliger, 2013, Huang et al., 2012, Kranich & Wald, 2018, Heij et al., 2014, Gerdoçi et al., 2018, Marolt et al., 2018; Latifi & Bowman, 2018).

Generally, organizational innovation was described as engagement in new behaviors related to products, i.e., creative ideas of product designs to be manufactured and introduced to customers in order to meet their needs and ultimately to enhance business performance (Karimi and Walter, 2016). According to Huang et al. (2012), innovative behaviors are crucial to develop business models. Clauss (2017) proposed a measure of BMI consisted of value creation innovation, value proposition innovation and value capture innovation. Foss and Saebi (2018) added that the focus of BMI is on three integral mechanisms: value creation, value proposition and value capture while the focus of BMI is on novel changes that applied to the relations between these mechanisms. Therefore, BMI had been simply defined as change in the components of BMI, which include firm's resources, activities, partners, customers, distribution channels as well as communications (Marolt et al., 2018).

For the present study, activities of BMI are related to company's transactions since the company has individual customers and retailers, company's offers, customer needs and satisfaction, mistakes and cost reduction, product design and quality, customer support and assessment, resources effective utilization, market share expansion. These innovation-driven behaviors exhibit positive influences on company performance. Basically, it was concluded that a successful introduction of BMI should consider the ability to introduce novel changes in company's model components.

6. Managerial implications

BMI is a key driver of company performance; therefore, companies should pay a great attention to the core requirements of the achievement of BMI. A crucial theme of BMI is change, so, managers are requested to manage change resistance first in order to leave a room for those who are work on the novel ideas in the company. In the second place, managers are required to utilize company resources to implement innovative ideas, as well, processes should be reviewed to match new designs of products. Finally, customers of dairy products due to diversity of products and companies are price sensitive; accordingly, cost reduction should be a key priority of the implementation of BMI.

7. Limitations and future trends

The current study is limited to its small sample size, which comprised managers of one company working in dairy industry in Jordan. Secondly, the study was conducted using a cross-sectional design for data collection. Therefore, researchers are called for examining the impact of BMI using large sample sizes from different companies from different industries.

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