

November 2021

CUSTOMERS LOYALTY: DOES VALUE CO-CREATION BECOME INDISPENSABLE FOR UNIVERSITIES?

Ayman Mahmoud Bazzi

PhD Candidate, Lecturer at Beirut Arab University, Faculty of Business Administration, Beirut Arab University, Beirut, Lebanon, aymanbazzi@hotmail.com

Alaaeddine Abbas Ali

Associate Professor, Head of Business Administration Department, Beirut Arab University, Beirut, Lebanon,, alaaabass@hotmail.com

Nehale Mostapha

Professor, Dean Faculty of Business Administration Beirut Arab University), Beirut Arab University, Beirut, Lebanon, nehale.mostapha@bau.edu.lb

Follow this and additional works at: <https://digitalcommons.bau.edu.lb/csdjournal>

 Part of the [Marketing Commons](#)

Value co-creation, Customers` loyalty, Relationship strength, Customers` satisfaction, Lebanese universities.

Recommended Citation

Bazzi, Ayman Mahmoud; Ali, Alaaeddine Abbas; and Mostapha, Nehale (2021) "CUSTOMERS LOYALTY: DOES VALUE CO-CREATION BECOME INDISPENSABLE FOR UNIVERSITIES?," *BAU Journal - Creative Sustainable Development*: Vol. 3 : Iss. 1 , Article 5.

Available at: <https://digitalcommons.bau.edu.lb/csdjournal/vol3/iss1/5>

This Article is brought to you for free and open access by Digital Commons @ BAU. It has been accepted for inclusion in BAU Journal - Creative Sustainable Development by an authorized editor of Digital Commons @ BAU. For more information, please contact ibtihal@bau.edu.lb.

CUSTOMERS LOYALTY: DOES VALUE CO-CREATION BECOME INDISPENSABLE FOR UNIVERSITIES?

Abstract

This paper investigates the direct and indirect relationships between customers` participation in value co-creation activities (CPVCA) and their loyalty. Quantitative research approach is adopted, while the population consists of all the Lebanese private universities` students. A questionnaire was used to collect data from 403 students, nominated according to convenience sampling technique. The study proposed scale validity and the relationships between variables were examined depending on PLS-SEM. The findings reveal a direct significant relationship between CPVCA and customers` loyalty; in addition, to indirect relationship, through the partial mediating role for customers` satisfaction and relationship strength. Research implications and limitations are presented.

Keywords

Value co-creation, Customers` loyalty, Relationship strength, Customers` satisfaction, Lebanese universities.

1. INTRODUCTION

Customers' loyalty is a major intangible asset which enables firms to develop a competitive advantage. This explains the continuous researchers' and practitioners' interest in investigating the factors that lay behind achieving customers' loyalty (Cossío-Silva *et al.*, 2016). Many studies adopted customers' satisfaction (El-Adly, 2019; Gumussoy & Koseoglu, 2016), perceived value (El-Adly & Eid, 2016; Jiang *et al.*, 2016) service quality (Ali *et al.*, 2016; Makanyeza & Chikazhe, 2017) and relationship strength between customers and their product/service provider (Hayati *et al.*, 2020; Jaziri, 2016) as an antecedent for customers' loyalty. Whereby, this paper investigates customers' participation in value co-creation activities (CPVCA) as an antecedent for customers' loyalty (Cossío-Silva *et al.*, 2016).

During the first decade of this century CPVCA topic started to get significant interest by researchers (such as, Prahalad & Ramaswamy, 2004; Vargo & Lusch, 2008). Whereby, jointly creating value by customers' and their service/product providers is a main tool for confronting future competition (Prahalad *et al.*, 2004). The main idea behind customers' value co-creation process is referred to the interaction between organizations and their customers, whereby customers can be seen as partners who are willing to participate in creating value to satisfy their needs (Sashi, 2012). Also, the main shift in marketing concepts from customer driven to customer centric marketing, leads to firms' adoption for service dominant logic perspective concerning the customers' partnering role in creating value (Bowen & Schneider, 1995). Moreover, Adamik *et al.* (2018) stated that CPVCA is an important tool for creating firms' competitive advantage, thus allowing them to face high level of competition.

No single agreement between researchers about the shape of the relationship between CPVCA and loyalty. Some researchers adopted the direct relationship between CPVCA and loyalty (such as, Auh *et al.*, 2007; Lee *et al.*, 2019). Iglesias *et al.* (2020) demonstrated that CPVCA is a main determinant for customers' loyalty. Other researchers illustrated the existence of indirect relationship, through customers' satisfaction and relationship strength (such as, Mariyudi & Matriadi, 2018; Rajah *et al.*, 2008).

Recently high education institutions are facing a huge level of competition (Nasim *et al.*, 2020; Pucciarelli & Kaplan, 2016), in which a continuous effort to retain student, in addition to attracting and registering them is required (Chandra *et al.*, 2019). Ali and Ahmed (2018) and Rowley (2003) illustrated the existence for low student loyalty level toward their high education institutions. In the same context, Lebanese private education sector is facing intense competition from rival universities that have entered the market (Nasserredine, 2012). Besides, the Lebanese higher education environment has become more competitive due to the conversion of many Lebanese colleges to full universities (The Muhanna Foundation, 2010). Moreover, Lebanese universities are trying to face student disloyalty problem through offering various academic majors and applying market oriented policies (Abouchedid & Nasser, 2002). Whereby, Lebanese researchers share the same interest to boost students' loyalty toward higher education institutions (Khawaja *et al.*, 2021; El-Kassar *et al.*, 2019).

Lately, researchers shed the light on some underrated variables, which may aid high education institutions in facing students' disloyalty problem, such as participating students in value co-creation activities (Orozco & Arroyo, 2017). Hence, this paper aims to investigate the direct influence for students' participation in value co-creation activities on their loyalty toward Lebanese private universities, in addition to its indirect influence through satisfaction and relationship strength. This paper is considered as one of the few empirical studies on Lebanon, that investigates the influence for students' participation in value co-creation activities on their loyalty toward high education institutions. In the next paragraph, this study theoretical background is presented.

2. THEORETICAL BACKGROUND

This paper adopts the perspectives for both self-serving bias theory and service dominant logic to illustrate the role of CPVCA in enhancing customers' loyalty. Self-serving bias theory demonstrated that individuals tends to relate success to their contribution, while relating the failure cause to other individuals' ability or to external factors (Campbell & Sedikides, 1999). In other words, Myers (2015) illustrated that self-service bias theory is a cognitive process, dominated by the need to perceive oneself in a highly favorable manner. Hence, CPVCA enhances their satisfaction, since co-creator customers relate any favorable outcome to their participation (Bendapudi & Leone, 2003).

Moreover, service dominant logic (S-D logic) illustrated the role for active CPVCA; in which, customers are considered as an important resource for a firm, that are able to manage other resources and to participate actively in value co-creating activities (Vargo *et al.*, 2004). In the coming paragraphs this paper provides conceptualizations for all the study variables.

Customers` value co-creation is defined as active participation in service delivery, which boost both their level of satisfaction and perception of service quality (Kotze & du Plessis, 2003). In the same vein, customers` value co-creation is considered as an ongoing operation between customers and firms` employees to create ideas, products, services, information and experiences (Rice, 2005). Moreover, Lawer (2005) defined customers` value co-creation as shared value creating process between customers and firms to create personalized value.

Even though customers` satisfaction is a main aspect of marketing, there are no agreement about a single definition for it (Rogers *et al.*, 1992). Whereby, customers` satisfaction can be defined as customers` response toward fulfillment (Oliver *et al.*, 1997). Also, customers` satisfaction is linked to customers` sense of happiness or disappointment, developed when they compare their expectations concerning the performance of a particular product/service with its actual performance (Kotler and Keller, 2006). Thus, agreeing with Tse and Wilton (1988) definition, which defined customers` satisfaction as customers` perceived deference between their previous expectation and the realized performance for a certain product or service.

The relationship strength between customers and a firm is highly influenced by the persistence of this relationship with time (Liljander, 2000). De Cannière *et al.* (2010) defined relationship strength as relationship complexity reflected by the degree of contact and personal relationship between two partners. Furthermore, Shi *et al.* (2009, pp. 3) defined the relationship strength as “the extent to which the partners are bound in a customer relationship and reflects the ability of the relationship to resist both internal and external challenges”.

One of the main firms` goals through performing business activities is to enhance their customers` loyalty (Singh *et al.*, 2012). Whereby, customers` loyalty is defined as their willingness to commit to a long-term relationship with a specific brand or organization, in addition to recommending them for others (Markovic *et al.*, 2018). Relatedly, customers` loyalty is defined as customers` continuous repurchasing for a certain product/service while ignoring competing firms marketing offers (Beerli *et al.*, 2004). Various conceptualization for customers` loyalty exists, which tends to illustrate it based on different approaches, such as attitudinal approach, behavioral approach and composite approach (Ozturk *et al.*, 2016). Knowing that attitudinal approach includes psychological links between the customers and a specific brand or firm (Liu-Thompkins & Tam, 2013), while behavioral approach is concerned with customers` purchase amount and frequency (Liu-Thompkins *et al.*, 2013), finally, composite approach which includes both customers` attitude and their willingness to repurchase a specific brand, as measures for loyalty (Rundle-Thiele, 2005).

3. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

In this section, the researchers reviewed the related previous literature, which was used as base for developing both the study hypotheses and the conceptual framework.

3.1 Participation in Value Co-Creation Activities and Customers` Loyalty

Although, few studies examined the impact for CPVCA on their loyalty, reviewing previous literature revealed that CPVCA boosts their loyalty (such as, Hajli *et al.*, 2017; Kaufmann *et al.*, 2016; Lee *et al.*, 2019). Moreover, some researcher examined the relationship between CPVCA and their loyalty in service sector, such as, Hosseini and Hosseini (2013) study which demonstrated the existence for positive relationship between banks` CPVCA and loyalty. Relatedly, participating patients in value co-creation activities increase their loyalty (Banyté *et al.*, 2014). Thus, agreeing with the results of Peña *et al.*, (2014) concerning the positive influence for participating tourists in value co-creation activities on their loyalty. In the same context, Iglesias *et al.* (2020) supported the positive influence for CPVCA on their loyalty toward insurance services organizations. Relatedly, Janjua and Ramay (2020) demonstrated a positive influence for participating students in value co-creation activities on their loyalty toward higher education institutions. The following hypothesis is developed based on the previous literature review:

H1: Customers` participation in value co-creation activities has a positive effect on their loyalty

3.2 Participation in Value Co-Creation Activities and Relationship Strength

The interaction between customers and their product/service provider through CPVCA facilitates creating highly customized product/service, which leads to stronger relationship between the firm and its customers (Claycomb & Martin, 2001). In other words, CPVCA is considered as a determinant for relationship strength. Relatedly, Shrivastava (2016) stated that participating customers in value co-creation activities results in long-term relationship between the organization and its customers. Few empirical studies examined the relationship between CPVCA and relationship strength, such as Boyle (2007) who supported the positive relationship between CPVCA and relationship strength. Also, CPVCA enhances customers` satisfaction, which in turn strengthen the relationship between customers and their suppliers in service sector (Claycomb *et al.*, 2001; Storbacka *et al.*, 1994). Moreover, Janjua *et al.* (2020) illustrated a positive influence for participating students in value co-creation activities on relationship strength with their higher education institutions. The following hypothesis is developed based on the previous literature review:

H2: Customers` participation in value co-creation activities has a positive effect on the relationship strength.

3.3 Participation in Value Co-Creation Activities and Customers` Satisfaction

Many researchers came to an agreement on the significant relationship between CPVCA and customers` satisfaction (such as, Heidenreich *et al.*, 2015; Ho *et al.* 2014; Terblanche, 2014). Whereby, previous studies revealed a positive influence for CPVCA on customers` satisfaction (such as, Cambra-Fierro *et al.*, 2017; Frempong & Ampaw, 2018; Opata *et al.*, 2020; Ranjan & Read, 2016). Furthermore, Ribes-Giner *et al.* (2016) revealed a significant influence for CPVCA on satisfaction in high education institutions. In the same vein, Bovill (2014) illustrated that students` participation in co-creating university curriculum increases the level of satisfaction for them and for their instructors. Also, Lin *et al.* (2020) study revealed a positive influence for university students` participation in value co-creation activities on their satisfaction. Relatedly, Nguyen *et al.* (2021) demonstrated a positive influence for students` participation in value co-creation activities on their satisfaction. The following hypothesis is developed based on the previous literature review.

H3: Customers` participation in value co-creation activities has a positive effect on their satisfaction.

3.4 Customers` Satisfaction and Relationship Strength

Customers` satisfaction is a determinant for a strong relationship between them and their product/service provider (Storbacka *et al.*, 1994). Barry *et al.* (2008) stated that customers` satisfaction impact the relationship strength between them and their product or service supplier. Relatedly, Fleming *et al.* (2005) demonstrated that as customers` satisfaction increase the switching behavior toward competing product or service decrease, thus boosting the sense of belonging to a certain product or service provider, through enhancing the relationship strength between customers and firm. Moreover, Palto & Lebcir (2018) adopted a positive association between customers` satisfaction and bonds` strength among the firm and its customers. Also, some studies on the service sector adopted the positive influence for customers` satisfaction on relationship strength (Claycomb *et al.*, 2001; Storbacka *et al.*, 1994). Thus, the following hypothesis is derived based on prior literature review:

H4: Customers satisfaction has a positive effect on relationship strength.

3.5 Customers` Satisfaction and Customers` Loyalty

Many studies supported the relationship between customers` satisfaction and their loyalty (such as, Kasiri *et al.*, 2017; Lam *et al.*, 2004). Whereby, customers` satisfaction is considered as loyalty determinant (Gumussoy *et al.*, 2016). Relatedly, Ismail *et al.* (2017) demonstrated that satisfying customers is an antecedent for their loyalty. Moreover, previous literature revealed the positive influence for customers` satisfaction on loyalty (Famiyeh *et al.*, 2018; Chang *et al.*, 2009; Yieh *et al.*, 2007). Also, in service sector many researchers adopted customers` satisfaction as a main determinant for loyalty (Eshghi *et al.*, 2007; Gray & Boshoff, 2004). Zins (2001) study revealed that customers` satisfaction is an antecedent for airline customers` loyalty. Moreover, customers` satisfaction positively impact the loyalty for life insurance customers (Nguyen *et al.*, 2018). Furthermore, Teeroovengadum *et al.* (2019) illustrated that students` satisfaction has a positive influence on their loyalty toward their higher education institutions. Thus, the following hypothesis is derived based on prior literature review:

H5: Customers` satisfaction has a positive effect on their loyalty.

3.6 Relationship Strength and Customers` Loyalty

Relationship strength between customers and firms boosts customers` loyalty (Evanschitzky *et al.*, 2006). Relatedly, relationship strength is considered as an antecedent for customers` loyalty (Hausman, 2001). Moreover, Jaziri (2016) study supported the positive influence for relationship strength on customers` loyalty. Also, relationship quality has a positive influence on customers` loyalty (Kuhn & Mostert, 2018), whereby relationship quality refers to the strength of the relationship between the firm and its customers (Agarwal *et al.*, 2014). Moreover, relationship strength positively influences the loyalty for banks` customers (Hayati *et al.*, 2020). Furthermore, Chen (2016) illustrated the positive effect of relationship strength on international students` loyalty toward their higher education institutions in Taiwan. Hence, the following hypothesis is derived based on prior literature review:

H6: Relationship strength has a positive effect on customers` loyalty.

3.7 The Mediating Role of Customers` Satisfaction and Relationship Strength

In addition to the direct relationship between CPVCA and loyalty, some researchers investigated the indirect relationship between these two variables, such as Rahmani *et al.* (2017) who supported the role of customer satisfaction as a mediator for the relationship between CPVCA and loyalty. In the same vein, an evidence for customers` satisfaction mediation role for the relationship between CPVCA and customers` loyalty was revealed by Yacob *et al.* (2018) study. Moreover, reviewing previous literature revealed an agreement between researchers about the mediation role for customers` satisfaction (such as: Cambra-Fierro *et al.*, 2017; Giner and Rillo, 2016; Prastiwi & Hussein, 2019). Thus, the following hypothesis is developed based on previous literature review:

H7: Customers` satisfaction mediates the relationship between customers` participation in value co-creation activities and customers` loyalty.

Also, this paper contributes in bridging literature gap, through investigating relationship strength mediation role on the relationship between CPVCA and customers` loyalty. Whereby, few researchers examined this mediation role. Knowing that previous studies supported the relationship between CPVCA (predictor) and relationship strength (mediator) (Boyle, 2007; Janjua *et al.*, 2020). Moreover, the relationship between relationship strength (mediator) and customers` loyalty (criterion) was also supported (Jaziri, 2016). Thus, the following hypothesis is developed:

H8: Relationship strength mediates the relationship between customers` participation in value co-creation activities and customers` loyalty.

Depending on previous literature review, this study conceptual framework is developed as presented in Figure (1) below:

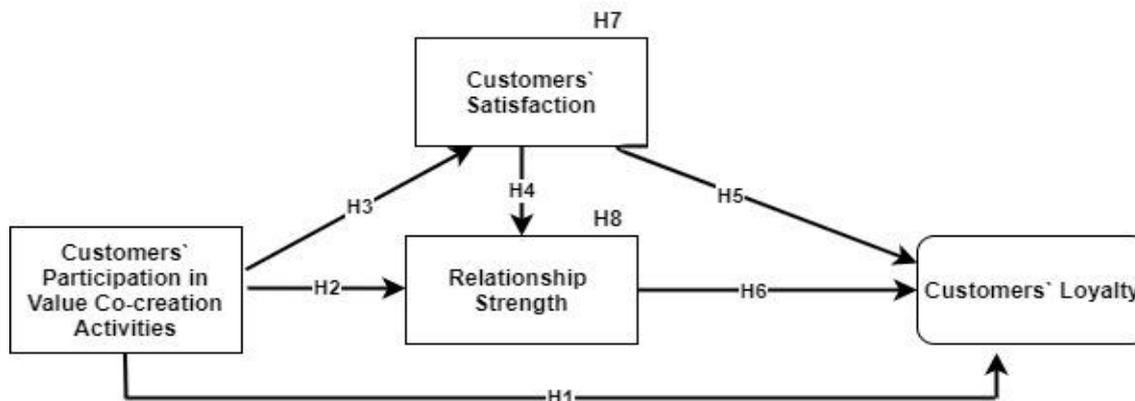


Fig.1: Conceptual Framework

4. RESEARCH METHODOLOGY

Quantitative research approach is adopted by this paper, whereby, researchers depend on narrow question to gather quantifiable data from the students of private Lebanese universities, to be used in farther analysis, depending on appropriate statistical methods (Creswell, 2008).

4.1 Research Population

The recent study population consists of all private Lebanese universities` students. Private Lebanese universities students registered during the academic year 2016/2017 accounted for 125000 students (Ghanem, 2018). Moreover, 94474 students were registered in private Lebanese universities during the academic year 2017/2018 (BLOMINVEST BANK, 2018).

4.2 Sampling and Procedures

To determine the current study sample size, the authors depended on Sekaran and Bougie (2016), which demonstrated that the minimum sample size for a population that exceeds 75,000 units is equal to 384 respondents. Thus, the current study sample contains 403 students, nominated base on convenience sampling technique. Online questionnaire survey was used to collect data, that enable collecting large amount of data within a short period of time (Regmi *et al.*, 2016). Moreover, recently online questionnaire survey gains higher interest due COVID-19 pandemic (Hlatshwako *et al.*, 2021). Furthermore, according to "10 times rule" this study sample size is sufficient for data analysis depending on PLS-SEM, in which CPVCA has the greatest indicators number (19 indicators) and it points toward three latent variables, as a result, the minimum acceptable sample size for data analysis is 220 students $[(19+3) * 10]$ (Hair *et al.*, 2014). 50.9% of recent study sample are males (205 students), while 49.1% are females (198 students). The majority of respondents are aged from 18 to 20, and accounts for 33.7% (136 students). Also, 68% (274 students) are undergraduate students, and 32% (129 students) are postgraduate students

4.3 Measures

CPVCA is measured by nineteen items (for example, When the lecturer gives an explanation that appeals to me, I am willing to offer comments) (Yi & Gong, 2013). While, six items are used to assess customers` satisfaction (for example, "I am satisfied with quality of services") (Annamdevula & Bellamkonda, 2016, p. 455). Moreover, relationship strength is measured by nine measurement items (for example, the relationship with my university is something I care about) (Rajah *et al.*, 2008). Finally, six measurement items are used to assess customer loyalty. (for example, "I'm very interested in keeping in touch with my faculty") (Hennig-Thurau *et al.*, 2001, p. 342). All the study measurements are developed based on five-points Likert scale.

5. DATA ANALYSIS

This paper's data analysis is divided into three parts: First, descriptive statistics whereby, the main attributes for this paper data set is presented. Second, evaluation for the measurement model, which establishes relationships between latent variables and their relevant indicators. Finally, structural model evaluation to investigate the relationships between the latent variables of this study.

5.1 Descriptive Statistics

The current study examines the standard deviation (SD) and the means for each study variable. In which, CPVCA has the highest mean value (4.03), with SD = 0.588. On the contrary relationship strength has the lowest mean value (3.65), and SD = 0.853. Also, this study investigates the data set modeling for normal distribution, through performing skewness normality tests. Knowing that “Skewness assesses the extent to which a variable’s distribution is symmetrical. If the distribution of responses for a variable stretch toward the right or left tail of the distribution, then the distribution is referred to as skewed” (Hair *et al.*, 2017, p. 61). Furthermore, Hair *et al.* (2017) illustrated that numerical value for skewness test which is higher than +1 or less than -1 demonstrates a substantial skewed distribution. Referring to table 1 below, the data for this study is normally distributed, since the numerical values of skewness test for all the variables are within their accepted range.

Table 1: Variables mean, standard deviation & skewness test

	Mean	Std. Deviation	Skewness	
			Statistic	Std. Error
CPVCA	4.03	.588	-.108	.122
Customers` Satisfaction	3.75	.876	-.390	.122
Relationship Strength	3.65	.853	-.434	.122
Customers` Loyalty	3.94	.851	-.693	.122
Notes: CPVCA= Customers` participation in value co-creation				

5.2 Evaluation For The Measurement Model

Researchers tested the content validity, through making sure that all the measurement items obviously reflect the measured variables. In other words, the procedures for establishing the measurement items were checked by the researchers (Straub, 1989). Also, construct validity is confirmed, in which all the used measurement items was retrieved from well-known research (kerlinger, 1964). This paper adopts PLS-SEM whereby, Smart PLS-3 software is used, that allow hypotheses testing in relation to pre-existing concepts and theories, in addition to the possibility to use it in new theory development (Sarstedt *et al.*, 2014). Furthermore, to use PLS-SEM this study classifies the latent variables into formative (Customers` satisfaction and relationship strength) and reflective (CPVCA and customers` loyalty).

5.2.1 Evaluation for reflective measurement model

To perform accurate evaluation for reflective variables measurement model, this paper examines reliability (internal consistency), convergent validity, and discriminant validity.

5.2.1.1 Reliability (Internal consistency)

Internal consistency refers to the extent to which all measurement items precisely measure the same construct (Revelle, 1979). This study depends on both Cronbach alpha and composite reliability to check the reliability. The following are the Cronbach alpha values for the study's reflective variables: CPVCA (0.909) and customers' loyalty (0.885). Whereby, all the alphas' values are greater than 0.7, hence showing acceptable internal consistency for this study reflective variables (Nunnally, 1978). Also, the current study checked the composite reliability, knowing that it is highly recommended in research applying structure equation modeling (Peterson & kim, 2013). In which the reflective variables composite reliability values are as follow: CPVCA (0.921) and customers' loyalty (0.913), thus revealing adequate composite reliability since all values are more than 0.7 (Hair *et al.*, 2014).

5.2.1.2 Convergent validity and discriminant validity

This paper tests the convergent validity to assure that each construct item measures are positively related to one another (Campbell & Fiske, 1959). Hence, the researchers depend on factor analysis to determine the reflective variables measurement items outer loading, along with the average variance extracted (AVE) calculation. The outer loadings for the CPVCA items range between 0.396 and 0.724, with AVE = 0.386. While, the outer loadings for customers' loyalty range from 0.719 to 0.857, with AVE = 0.636. Moreover, this paper adopts the criteria for Chin (1998) and Hair *et al.* (2011) in which any construct indicator loading below 0.5 is dropped. Hence, deleting three measurement items of CPVCA {CPVCA1 (outer loading = 0.396), CPVCA7 (outer loading = 0.462) and CPVCA8 (outer loading = 0.410)} having loading values lower than 0.5. While all customers' loyalty measurement items are retained. Excluding the indicators with unacceptable loading values must increase the AVE for the construct to exceed 0.5 (Fornell and Larcker, 1981). Thus, checking AVE for CPVCA after deleting the previous three items revealed an increase in its value to reach 0.533. Moreover, the composite reliability for construct must increase after items deleting (Henseler *et al.*, 2009), whereby, CPVCA composite reliability increased from 0.921 to reach 0.924.

Table 2: Latent variable correlation compared to \sqrt{AVE}

	CPVCA	Customers' satisfaction	Relationship strength	Customers' loyalty	AVE	\sqrt{AVE}
CPVCA	1.000	0.502	0.681	0.528	0.386	0.621
Customers' loyalty	0.528	0.664	0.794	1.000	0.636	0.797
Notes: AVE=Average Variance Extracted CPVCA= Customers' participation in value co-creation						

This paper also examines the reflective constructs discriminant validity to determine whether each construct is highly related to its specific measurement items. Whereby, Fornell and Larcker criterion is adopted to make sure that \sqrt{AVE} for each reflective latent variable exceeds its correlation with any other latent variable (Fornell and Larcker, 1981). Table 2 revealed that the \sqrt{AVE} for both CPVCA and customers' loyalty are higher than any correlation between them and other latent variable. Hence, satisfying discriminant validity for the study reflective variables.

Moreover, checking cross loading reveals that all the indicators' loadings for reflective variables on their specific construct exceeds their loadings on other construct, thus satisfying discriminant validity (Gefen & Straub, 2005).

Also, the results revealed an accepted Heterotrait-monotrait ratio value (0.575) less than 0.9 (Henseler, 2017), and its confidence interval bias do not include 1 (Henseler *et al.*, 2015) as presented in table 3 below.

Table 3: The reflective variables HTMT values and confidence intervals bias correlations

	Original Sample (O)	Sample Mean (M)	2.5%	97.5%
CPVCA -> Customers` Loyalty	0.575	0.575	0.488	0.661
CPVCA= Customers` participation in value co-creation				

5.2.2 Evaluation for formative measurement model

This paper includes two formative variables (Customers` satisfaction and relationship strength). To ensure accurate evaluation for formative variables measurement model, the collinearity between the indicators for each formative variable is examined, through checking the variance inflation factors (VIF) for customers` satisfaction and relationship strength measurement items. Table 4 reveals that all the VIF values are less than 5, which indicate that there is no serious collinearity problem (Hair *et al.*, 2017). Moreover, rule of thumb is conducted to examine convergent validity (Hair *et al.*, 2014), starting from checking the outer weight significance for the formative variables indicators, which indicates insignificant p-value for the following indicators (CS2, CS3, CS4, CS5, RS1, RS2, RS4 and RS7). To uncover which of the previous insignificant outer weights indicators must be removed, the outer loading for these indicators are calculated as presented in table 4 below, whereby only indicators with outer loading value that exceeds 0.5 is retained (Hair *et al.*, 2014). As a results for rule of thumb only RS1 and RS2 are removed since their outer loadings are do not exceed 0.5.

Table 4: Outer VIF values, outer weight significance and outer loading

	VIF	T-Statistics ((O/STDEV))	P Values	Outer Loading
CS1	3.012	4.763	0.000	0.888
CS2	4.524	0.308	0.758	0.849
CS3	4.408	0.112	0.911	0.807
CS4	3.344	0.200	0.842	0.777
CS5	3.474	0.987	0.324	0.811
CS6	2.760	6.662	0.000	0.917
RS1	1.777	0.548	0.584	0.489
RS2	1.712	1.102	0.271	0.500
RS3	2.468	4.637	0.000	0.820
RS4	3.066	0.986	0.325	0.698
RS5	2.855	2.827	0.005	0.819
RS6	2.746	3.421	0.001	0.843
RS7	3.530	0.081	0.936	0.772
RS8	4.254	2.449	0.015	0.854
RS9	4.191	4.268	0.000	0.884
Notes: VIF= Variance Inflation Factor; CS= Customers Satisfaction Measurement Item; RS= Relationship Strength				

5.3 Structural Model Evaluation

The recent study model is assessed based on evaluating the structure model, which includes the following procedures: First, assessment for collinearity. Second, assessment for coefficient of determination (ΔR^2), blindfolding predictive relevance (Q^2), path coefficients and size effect (F^2) (Nouraldeen *et al.*, 2021). The current study model as developed by Smart PLS-3 software is presented in figure 2 below.

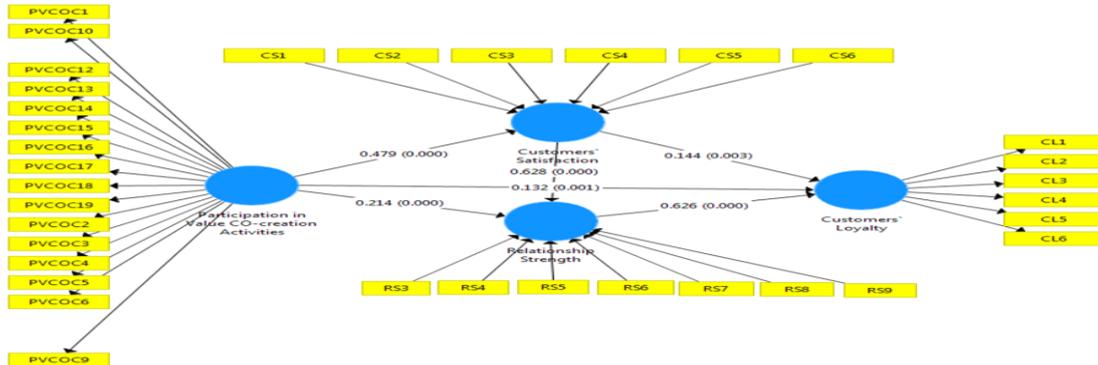


Fig.2: Research model developed by smart PLS-3 software

5.3.1 Collinearity assessment

This paper investigates the correlation between the indicators by computing VIF. Whereby, Hair *et al.* (2011) demonstrated that VIF value greater or equal to 5 indicates a serious collinearity problem. Table 5 presents the inner VIF value for the study variables, showing that all values for VIF do not exceed 5. Hence, the current paper indicators have no significant collinearity problem.

Table 5: Inner VIF values

	Customers` Loyalty	Customers` Satisfaction	Relationship Strength
Customers` Satisfaction	2.213		1.297
CPVCA	1.404	1.000	1.297
Relationship Strength	2.320		
Notes: CPVCA= Customers` participation in value co-creation			

5.3.2 Coefficient of determination (ΔR^2), blindfolding predictive relevance (Q^2), path coefficients and size effect (F^2)

According to structure equation modeling, the link between study constructs is known as path coefficient, which is used to examine the hypotheses and the strength of the relationship between the study variables. Garson (2016) stated that any value of path coefficient which is close to +1 indicates a robust positive relationship, while any path coefficient value close to -1 indicates a robust negative relationship, finally any path coefficient close to zero reveals insignificant relationship between the variables under study. Table 6 below presents the path coefficient for the study variables, in addition to the comparison between t-value for each path and the t- critical value (2.58 at level of significant 1%). Whereby, any accepted hypothesis must have t-value path greater than t-critical, in addition to significant p-value (Garson, 2016).

Table 6: Path coefficient results, coefficient of determination (ΔR^2), predictive relevance (Q^2) and size effect (F^2)

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	F ²
Customers` Satisfaction -> Customers` Loyalty	0.144***	0.124	0.049	2.958>2.58	0.028
Customers` Satisfaction -> Relationship Strength	0.628***	0.635	0.046	13.799>2.58	0.705
CPVCA -> Customers` Loyalty	0.132***	0.129	0.039	3.364>2.58	0.037
CPVCA -> Customers` Satisfaction	0.479***	0.488	0.043	11.071>2.58	0.297
CPVCA -> Relationship Strength	0.214***	0.211	0.048	4.457>2.58	0.082
Relationship Strength -> Customers` Loyalty	0.626***	0.630	0.045	14.000>2.58	0.505
	Customers` Loyalty		Customers` Satisfaction		Relationship Strength
ΔR^2	0.663		0.227		0.567
Q^2	0.391		0.146		0.362
Notes: ΔR^2 : adjusted R square; Q^2 : predictive relevance, F^2 : size effect *** p < 0.01 CPVCA= Customers` participation in value co-creation					

This paper examines the value for the adjusted R square (ΔR^2) as revealed in table 6. Whereby, 66.3% of the variation in customers` loyalty is due to the variation in CPVCA, customers` satisfaction and relationship strength. Moreover, 22.7% of the variation in customers` satisfaction is due to the variation in CPVCA. Furthermore, 56.7% of the change in relationship strength is due to the change in CPVCA and customers` satisfaction. Also, the results reveal a high predictive power for the study model. Whereby, all the predictive relevance (Q^2) value are greater than zero {customers` loyalty ($Q^2= 0.391>0$), customers` satisfaction ($Q^2= 0.146>0$) and relationship strength ($Q^2= 0.362>0$)} (Geisser, 1974).

5.3.2.1 Testing the relationships of H1, H2, H3, H4, H5 and H6

According to the path coefficient value, there is a positive significant relationship between CPVCA and customers` Loyalty, in which CPVCA has a small size effect on customers` loyalty (path-coefficient = 0.132; P-value < 0.01; t-statistics 3.364> t-critical 2.58; $F^2 = 0.037 > 0.02$). Hence, H1 is supported. Also, the findings reveal that CPVCA positively influence the relationship strength. Whereby, a small size effect exists (path-coefficient = 0.214; P-value < 0.01; t-statistics 4.457> t-critical 2.58; $F^2 = 0.082 > 0.02$). Thus, H2 is supported. Moreover, CPVCA has a significant positive effect on customers` satisfaction, with a medium size effect (path-coefficient = 0.479; P-value < 0.01; t-statistics 11.071> t-critical 2.58; $F^2 = 0.297 > 0.15$). Thus, supporting H3.

The path coefficient result shows a significant positive influence for customers` satisfaction on of relationship strength, with a large size effect (path-coefficient = 0.628; P-value < 0.01; t-statistics 13.799> t-critical 2.58; $F^2 = 0.705 > 0.35$). Hence, supporting H4. Moreover, the path coefficient results reveal a

positive significant relationship between customers` satisfaction and loyalty; while, customers` satisfaction has a small size effect on loyalty (path-coefficient = 0.144; P-value < 0.01; t-statistics 2.958> t- critical 2.58; F² = 0.028> 0.02). Thus, H5 is also supported. Referring to the result for path coefficient, relationship strength has a positive significant influence on customers` loyalty, with a large size effect (path coefficient = 0.626; P < 0.01; t statistics 14.000> t- critical 2.58; F² = 0.505> 0.35). Thus, H6 is supported.

5.3.2.2 Testing the mediators between CPVCA and customers` loyalty

Examining the relationship between CPVCA and customers` loyalty reveals a significant total effect for CPVCA on customers` loyalty, in which table 7 presents the t-test for the total effect (t-statistics =12.885; p < 0.01). Also, Table 7 below reveals an indirect significant relationship between CPVCA and customers` loyalty (t-statistics =10.438; p < 0.01). Moreover, a direct significant effect for CPVCA on customers` loyalty exists, since H1 was previously supported. Thus, the relationship between CPVCA and customers` loyalty is partially mediated. In the coming paragraphs the researchers will examine the partial mediation role for customers` satisfaction and relationship strength between CPVCA and customers` loyalty.

5.3.2.2.1 Customers` satisfaction mediation role

Supporting H3, reveals a significant relationship between CPVCA (predictor) and customers` satisfaction (mediator). Also, supporting H5 reveals a significant relationship between customers` satisfaction (mediator) and customers` loyalty (criterion). Moreover, supporting H1 shows a significant direct relationship between CPVCA and customers` loyalty. Based on the previous analysis customers` satisfaction partially mediates the relationship between CPVCA and customers` loyalty, thus H7 is supported.

5.3.2.2.2 Relationship strength mediation role

Supporting H2, reveals a significant relationship between CPVCA (predictor) and relationship strength (mediator). Also, a significant relationship between relationship strength (mediator) and customers` loyalty (criterion) exists through supporting H6. Moreover, supporting H1 shows a significant direct relationship between CPVCA and customers` loyalty. Based on the previous analysis, relationship strength partially mediates the relationship between CPVCA and customers` loyalty, thus H8 is also supported.

Table 7: Total effect and indirect effect for CPVCA on customers` loyalty

	Total Effect		Indirect Effect	
	Standard Deviation (STDEV)	T Statistics	Standard Deviation (STDEV)	T Statistics
CPVCA-> Customers` Loyalty	0.041	12.885***	0.037	10.438***
Notes: *** p < 0.01 CPVCA= Customers` participation in value co-creation				

6. DISCUSSION

This study investigates the relationship between students' participation in value co-creation activities and their loyalty toward private Lebanese high education institutions. In which, the results for the direct relationship reveal a positive significant relationship between participating students in value co-creation activities and loyalty, through supporting H1. Hence, allowing students to actively participate in value co-creation activities enable high education institutions to overcome students' disloyalty problem. Whereby, this result goes in parallel with the findings for the studies performed by Iglesias *et al.* (2020), Lee *et al.*, 2019, Hajli *et al.*, 2017 and Kaufmann *et al.*, 2016.

Supporting H2, reveals a positive relationship between CPVCA and the relationship strength, which confirm with the results for Shrivastava (2016) and Boyle (2007) studies. Also, supporting H3, indicates a positive relationship between CPVCA and their satisfaction, which goes in line with the results for Opata *et al.* (2020), Frempong *et al.* (2018), Cambra-Fierro *et al.* (2017) and Ranjan *et al.* (2016). Furthermore, supporting H4, reveals a positive influence for customers' satisfaction on relationship strength, which also agrees with the findings for Jaziri (2016) and Fleming *et al.* (2005). Thus, supporting H2, H3 and H4 reveals a significant role for participating universities' students in value co-creation activities as a determinant for their high level of satisfaction, which in turn leads to developing strong relationship with their high education institutions.

After, supporting the relationships of CPVCA with both relationship strength and customers' satisfaction, this paper also investigates the relationships between customers' satisfaction and relationship strength from the first side, and customers' loyalty from the other side. Whereby, supporting H5, reveals a significant positive influence for customers' satisfaction on their loyalty, thus agreeing with many previous studies findings (such as, Nguyen *et al.*, 2018; Kasiri *et al.*, 2017; Gumussoy *et al.*, 2016). Also, supporting H6, demonstrates the existence for positive relationship between the relationship strength and customers' loyalty, which agrees with the findings for numerous previous studies (such as, Hayati *et al.*, 2020; Kuhn *et al.*, 2018; Jaziri, 2016). As a result, supporting H5 and H6 demonstrates that both relationship strength and students' satisfaction are determinants for universities students' loyalty.

Furthermore, the current study examines the mediation role for customers' satisfaction and relationship strength on the relationship between CPVCA and their loyalty. Whereby, supporting H7, reveals a significant mediation role for customers' satisfaction, thus agreeing with the findings for Prastiwi *et al.* (2019), Cambra-Fierro *et al.* (2017) and Giner *et al.* (2016). Also, supporting H8, contributes to the literature of the indirect relationship between CPVCA and loyalty. Knowing that the direct relationship between CPVCA and their loyalty was previously supported, thus both customers' satisfaction and relationship strength partially mediates the relationship between CPVCA and customers' loyalty.

The previous discussion for the current study findings reveals that overcoming students' disloyalty problem can be accomplished through depending on new underrated variables, such as students' participation in value co-creation activities. Whereby, students' participation in value co-creation activities has a direct positive influence on their loyalty, as well as indirect influence through enhancing both students' satisfaction and the relationship strength, as determinants for students' loyalty in high education institutions.

7. THEORETICAL AND PRACTICAL IMPLICATIONS

The current study contributes to value co-creation literature, through demonstrating the role of CPVCA as an antecedent for customers' loyalty. Thus, confirming the assumptions for both self-serving bias theory and SD-logic perspectives, concerning the positive consequences of CPVCA on customers' satisfaction and loyalty.

Also, this study has some practical implications for universities' managers and decision makers, which helps in enhancing students' satisfaction and overcoming disloyalty problem. These implications can be summarized as follow: First, the findings of the current study assist university boards of directors in developing strong programs for retaining and keeping their students loyal. Second, the recent study findings help university executives to build and maintain strong relationships with universities' students, though enhancing student satisfaction and relationship strength. Third, this study assists students to better interact with their universities and faculties, through actively participating in value creation activities.

8. LIMITATIONS AND FUTURE RESEARCH

This paper encompasses some limitations that might influence its findings generalization. First, this study was performed during COVID-19 pandemic, which might influence the students' willingness to participate in value co-creating activities. Whereby, Steen and Brandsen (2020, p.851) stated in their study that "Coproductio is flourishing under COVID-19, but can we expect it to last? Most likely, in post COVID-19 times, people and institutions will easily slip back into business as usual". In other words, COVID-19 might enhance universities students' participation in value co-creation during the pandemic, while they will be less likely to participate after the pandemic end. Thus, future replication study is highly recommended after COVID-19 end. Second, the recent paper is cross-sectional, thus further longitudinal research may better illustrate the influence of CPVCA on all other study variables. Third, this paper depends on convenience sampling technique, as a one of non-probability sampling techniques. Whereby, future research which depends on probability sampling techniques, such as simple random sample can better enhance findings' generalization. Finally, COVID-19 spread shed the light on the importance of online interaction between students' and their universities, due to the risk of face to face interaction (Chakraborty *et al.*, 2020). In this context, social media platforms are considered as a media for interaction and communication between students and their universities (Easa, 2019). Thus, further research which investigates the use of social media as a moderator for the relationship between CPVCA and students' satisfaction is highly recommended.

REFERENCES

- Abouchedid, K., & Nasser, R. (2002). Assuring quality service in higher education: registration and advising attitudes in a private university in Lebanon. *Quality Assurance in Education*, 10(4), 198-206.
- Adamik, A., Nowicki, M., & Szymańska, K. (2018). Openness to co-creation as a method of reducing the complexity of the environment and dynamizing companies' competitive advantages. *Management & Marketing. Challenges for the Knowledge Society*, 13(2), 880-896.
- Agarwal, A., Singhal, A., & Goel, B. (2014). A study of emotional satisfaction, relationship quality & customer loyalty in retail industry. *International Journal of Retailing & Rural Business Perspectives*, 3(1), 732-740.
- Ali, F., Zhou, Y., Hussain, K., Nair, P. K., & Ragavan, N. A. (2016). Does higher education service quality effect student satisfaction, image and loyalty?. *Quality assurance in education*, 24(1), 70-94.
- Annamdevula, S. & Bellamkonda, R.S. (2016). The effects of service quality on student loyalty: the mediating role of student satisfaction. *Journal of Modelling in Management*, 11(2), 446-462.
- Auh, S., Bell, S. J., McLeod, C. S., & Shih, E. (2007). Co-production and customer loyalty in financial services. *Journal of retailing*, 83(3), 359-370.
- Banytè, J., Tarutè, A., & Taujanskytè, I. (2014). Customer engagement into value creation: Determining factors and relations with loyalty. *Engineering Economics*, 25(5), 568-577.
- Barry, J. M., Dion, P., & Johnson, W. (2008). A cross-cultural examination of relationship strength in B2B services. *Journal of Services Marketing*, 22(2), 114-135
- Beerli, A., Martin, J. D., & Quintana, A. (2004). A model of customer loyalty in the retail banking market. *European journal of marketing*, 38(1/2), 253-275.
- Bendapudi, N., & Leone, R. P. (2003). Psychological implications of customer participation in co-production. *Journal of Marketing*, 67(1), 14-28.
- Blominvest Bank, E. A. (2018). *Students in Higher Education - Education - Lebanon*. BRITE. Retrieved from : www.brite.blominvestbank.com
- Bovill, C. (2014). An investigation of co-created curricula within higher education in the UK, Ireland and the USA. *Innovations in Education and Teaching International*, 51(1), 15-25.
- Bowen, D. E., & Schneider, B. (1995). *Winning the service game*. Harvard Business School Press, Boston, MA.
- Boyle, E. (2007). A process model of brand cocreation: brand management and research implications. *Journal of Product & Brand Management*, 16(2), 122-131.

- Cambra-Fierro, J., Pérez, L., & Grott, E. (2017). Towards a co-creation framework in the retail banking services industry: Do demographics influence?. *Journal of Retailing and Consumer Services*, 34, 219-228.
- Campbell, D. & Fiske, D. (1959). Convergent and discriminant validation by the multitrait-multimethod matrix. *Psychological Bulletin*, 56(2), 81-105.
- Campbell, W. K., & Sedikides, C. (1999). Self-threat magnifies the self-serving bias: A meta-analytic integration. *Review of general Psychology*, 3(1), 23-43.
- Chakraborty, P., Mittal, P., Gupta, M. S., Yadav, S., & Arora, A. (2020). Opinion of students on online education during the COVID-19 pandemic. *Human Behavior and Emerging Technologies*, (3)2, 357-365.
- Chandra, T., Hafni, L., Chandra, S., Purwati, A. A., & Chandra, J. (2019). The influence of service quality, university image on student satisfaction and student loyalty. *Benchmarking: An International Journal*, 26(5), 1533-1549.
- Chang, H. H., Wang, Y. H., & Yang, W. Y. (2009). The impact of e-service quality, customer satisfaction and loyalty on e-marketing: Moderating effect of perceived value. *Total quality management*, 20(4), 423-443.
- Chin, W. (1998). Commentary: Issues and opinion on structural equation modeling. *MIS Quarterly*, 22(1), 7-16.
- Claycomb, C., & Martin, C. L. (2001). Building customer relationships: an inventory of service providers' objectives and practices. *Marketing Intelligence & Planning*, 19(6), 385-399.
- Cossío-Silva, F. J., Revilla-Camacho, M. Á., Vega-Vázquez, M., & Palacios-Florencio, B. (2016). Value co-creation and customer loyalty. *Journal of Business Research*, 69(5), 1621-1625.
- Creswell, J. (2008). *Educational research: Planning, conducting, and evaluating quantitative*. Upper Saddle River, N.J.: Pearson/Merrill Prentice Hall.
- De Cannière, M. H., De Pelsmacker, P., & Geuens, M. (2010). Relationship quality and purchase intention and behavior: The moderating impact of relationship strength. *Journal of Business and Psychology*, 25(1), 87-98.
- Easa, N. F. (2019). Social Media Strategies and Students' Satisfaction at Egyptian Universities. *International Journal of Customer Relationship Marketing and Management (IJCRMM)*, 10(1), 1-16.
- El-Adly, M. I. (2019). Modelling the relationship between hotel perceived value, customer satisfaction, and customer loyalty. *Journal of Retailing and Consumer Services*, 50, 322-332.
- El-Adly, M. I., & Eid, R. (2016). An empirical study of the relationship between shopping environment, customer perceived value, satisfaction, and loyalty in the UAE malls context. *Journal of Retailing and Consumer Services*, 31, 217-227.
- El-Kassar, A. N., Makki, D., & Gonzalez-Perez, M. A. (2019). Student–university identification and loyalty through social responsibility: A cross-cultural analysis. *International journal of educational management*, 33(1), 45-65.
- Eshghi, A., Houghton, D., & Topi, H. (2007). Determinants of customer loyalty in the wireless telecommunications industry. *Telecommunications policy*, 31(2), 93-106.
- Evanschitzky, H., Iyer, G. R., Plassmann, H., Niessing, J., & Meffert, H. (2006). The relative strength of affective commitment in securing loyalty in service relationships. *Journal of business research*, 59(12), 1207-1213.
- Famiyeh, S., Asante-Darko, D., & Kwarteng, A. (2018). Service quality, customer satisfaction, and loyalty in the banking sector. *International Journal of Quality & Reliability Management*, 35(8), 1546-1567.
- Fleming, J. H., Coffman, C., & Harter, J. K. (2005). Manage your human sigma. *Harvard business review*, 83(7), 106-114.
- Fornell, C. and Larcker, D.F. (1981). Structural Equation Models with Unobservable Variables and Measurement Error: Algebra and Statistics. *Journal of Marketing Research*, 18(3), 382-388.
- Frempong, J., Chai, J., & Ampaw, E. M. (2018). Effects of waste management customer online value co-creation on sanitation attitude and advocacy: A customer-enterprise dyadic perspective. *Sustainability*, 10(7), 1-21.
- Garson, G.D. (2016). *Partial least squares: Regression and structural equation models*. Asheboro, NC: Statistical Associates Publishers.

- Gefen, D. & Straub, D. (2005). A Practical Guide to Factorial Validity Using PLS-Graph: Tutorial and Annotated Example. *Communications of the Association for Information Systems*, 16(1), 91-109.
- Geisser, S. (1974). A predictive approach to the random effect model. *Biometrika*, 61(1), 101–107.
- Ghanem, R. (2018). Too many universities? Retrieved October 04, 2020, Retrieved from www.businessnews.com.lb
- Giner, G. R., & Rillo, A. P. (2016). Structural equation modeling of co-creation and its influence on the student's satisfaction and loyalty towards university. *Journal of Computational and Applied Mathematics*, 291, 257-263.
- Gray, B., & Boshoff, C. (2004). The relationships between service quality, customer satisfaction and buying intentions in the private hospital industry. *South African journal of business management*, 35(4), 27-37.
- Gumussoy, C. A., & Koseoglu, B. (2016). The effects of service quality, perceived value and price fairness on hotel customers' satisfaction and loyalty. *Journal of Economics, Business and Management*, 4(9), 523-527.
- Hair Jr, J. F., Hult, G. T. M., Ringle, C., & Sarstedt, M. (2017). *A primer on partial least squares structural equation modeling (PLS-SEM)*. Sage publications.
- Hair, J. F., Ringle, C. M. & Sarstedt, M. (2011). PLS-SEM: Indeed a Silver Bullet. *Journal of Marketing Theory and Practice*, 19(2), 139–152.
- Hair, J. F., Sarstedt, M., Hopkins, L. & Kuppelwieser, V. G. (2014). Partial least squares structural equation modeling (PLS-SEM). *European business review*, 26 (2), 106-121.
- Hajli, N., Shanmugam, M., Papagiannidis, S., Zahay, D., & Richard, M. O. (2017). Branding co-creation with members of online brand communities. *Journal of Business Research*, 70(January), 136-144.
- Hausman, A. (2001). Variations in relationship strength and its impact on performance and satisfaction in business relationships. *Journal of Business & Industrial Marketing*, 16(7), 600-616.
- Hayati, S., Suroso, A., Suliyanto, S., & Kaukab, M. (2020). Customer satisfaction as a mediation between micro banking image, customer relationship and customer loyalty. *Management Science Letters*, 10(11), 2561-2570.
- Heidenreich, S., Wittkowski, K., Handrich, M., & Falk, T. (2015). The dark side of customer co-creation: exploring the consequences of failed co-created services. *Journal of the Academy of Marketing Science*, 43(3), 279-296.
- Hennig-Thurau, T., Langer, M. F., & Hansen, U. (2001). Modeling and managing student loyalty: An approach based on the concept of relationship quality. *Journal of service research*, 3(4), 331-344.
- Henseler, J. (2017). Partial least squares path modeling in *Advanced Methods for Modeling Markets*, Leeflang, P. S. H., Wieringa, J. E., Bijmolt, T. H. A. and Koen, P. (Eds.). *Advanced Methods for Modeling Markets*, Springer, Heidelberg, 361-381.
- Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the academy of marketing science*, 43(1), 115-135.
- Henseler, J., Ringle, C. M., & Sinkovics, R. R. (2009). The use of partial least squares path modeling in international marketing. *Advances in International Marketing*, (20), 277–319.
- Hlatshwako, T. G., Shah, S. J., Kosana, P., Adebayo, E., Hendriks, J., Larsson, E. C., ... & Tucker, J. D. (2021). Online health survey research during COVID-19. *The Lancet Digital Health*, 3(2), e76-e77.
- Ho, Y. C., Hsieh, M., & Yu, A. P. (2014). Effects of Customer-value Perception and Anticipation on Relationship Quality and Customer Loyalty in Medical Tourism Services Industry. *Information Technology Journal*, 13(4), 652-660.
- Hosseini, M. H., & Hosseini, V. S. (2013). The impact of co-production on customer loyalty in banking services: a case of Saman Bank. *Iranian Journal of Management Studies*, 6(2), 105-129.
- Iglesias, O., Markovic, S., Bagherzadeh, M., & Singh, J. J. (2020). Co-creation: A key link between corporate social responsibility, customer trust, and customer loyalty. *Journal of Business Ethics*, 163(1), 151-166.

- Ismail, A., Zaki, H. O., & Rose, I. R. (2017). Interlinkages between service quality, customer satisfaction and customer loyalty in Malaysia: A case study of Armed Forces Medical Organizations. *Geografia-Malaysian Journal of Society and Space*, 12(7), 47-59.
- Janjua, Q. R., & Ramay, M. I. (2020). The Effect of Co-creation of Value on Service Quality-Customer Loyalty Chain and the Role of Relationship Quality in Higher Education Institutions. *Journal of Business & Economics*, 12(1), 125-147.
- Jaziri, N. B. A. E. (2016). How Co-creating Enhances the Quality of a Brand-consumer Relationship, using the U&G Approach: The Coca-Cola Case. *Journal of Marketing Research and Case Studies*, 2016, 1-17.
- Jiang, L., Jun, M., & Yang, Z. (2016). Customer-perceived value and loyalty: how do key service quality dimensions matter in the context of B2C e-commerce?. *Service Business*, 10(2), 301-317.
- Kasiri, L. A., Cheng, K. T. G., Sambasivan, M., & Sidin, S. M. (2017). Integration of standardization and customization: Impact on service quality, customer satisfaction, and loyalty. *Journal of Retailing and Consumer Services*, 35, 91-97.
- Kaufmann, H. R., Loureiro, S. M. C., & Manarioti, A. (2016). Exploring behavioural branding, brand love and brand co-creation. *Journal of Product & Brand Management*, 25(6), 516-526.
- Kerlinger, F. N. (1964). *Foundations of behavioral research*. New York: Holt, Rinehart and Winston.
- Khawaja, L., Ali, A., & Mostapha, N. (2021). The mediating effect of customer satisfaction in relationship with service quality, corporate social responsibility, perceived quality and brand loyalty. *Management Science Letters*, 11(3), 763-772.
- Kotler, P. & K. L. Keller (2006). *Marketing Management*, Pearson-Prentice Hall, New Jersey.
- Kotze, T. G., & du Plessis, P. J. (2003). Students as "co-producers" of education: A proposed model of student socialisation and participation at tertiary institutions. *Quality Assurance in Education*, 11(4), 186-201.
- Kuhn, S., & Mostert, P. (2018). Relationship intention and relationship quality as predictors of clothing retail customers' loyalty. *The International Review of Retail, Distribution and Consumer Research*, 28(2), 206-230.
- Lam, S. Y., Shankar, V., Erramilli, M. K., & Murthy, B. (2004). Customer value, satisfaction, loyalty, and switching costs: an illustration from a business-to-business service context. *Journal of the academy of marketing science*, 32(3), 293-311.
- Lawer, C. (2005). *On customer knowledge co-creation and dynamic capabilities*: Working Paper, Cranfield School of Management.
- Lee, Y. L., Pan, L. Y., Hsu, C. H., & Lee, D. C. (2019). Exploring the sustainability correlation of value Co-creation and customer loyalty-A case study of fitness clubs. *Sustainability*, 11(1), 1-15.
- Liljander V. (2000). The importance of internal relationship marketing for external relationship success. In: Hennig-Thurau T., Hansen, U. (eds). *Relationship marketing: gaining competitive advantage through customer satisfaction and customer retention*. Berlin: Springer.
- Lin, L., Huang, Z., Othman, B., & Luo, Y. (2020). Let's make it better: An updated model interpreting international student satisfaction in China based on PLS-SEM approach. *Plos one*, 15(7), 1-13.
- Liu-Thompkins, Y., & Tam, L. (2013). Not all repeat customers are the same: Designing effective cross-selling promotion on the basis of attitudinal loyalty and habit. *Journal of Marketing*, 77(5), 21-36.
- Makanyeza, C., & Chikazhe, L. (2017). Mediators of the relationship between service quality and customer loyalty. *International Journal of Bank Marketing*, 35(3), 540-556.
- Mariyudi, M., & Matriadi, F. (2018). Customer Value Co-Creation Behavior and Customer Loyalty: A Case Study in The Mobile Application Industry. *Proceedings of the 1st Economics and Business International Conference 2017 (EBIC 2017)*.
- Markovic, S., Iglesias, O., Singh, J. J., & Sierra, V. (2018). How does the perceived ethicality of corporate services brands influence loyalty and positive word-of-mouth? Analyzing the roles of empathy, affective commitment, and perceived quality. *Journal of Business Ethics*, 148(4), 721-740.
- Myers, D.G. (2015). *Exploring Social Psychology*, 7th Edition. New York: McGraw Hill Education.

- Nassereddine. A. (2012). Increased competition and income diversification at Beirut Arab University. *Good Practices in Higher Education Financial Management, Chapter: IV, TEMPUS*, Editors: UNAM, pp.27.
- Nasim, K., Sikander, A., & Tian, X. (2020). Twenty years of research on total quality management in Higher Education: A systematic literature review. *Higher Education Quarterly*, 74(1), 75-97.
- Nguyen, H. T., Nguyen, H., Nguyen, N. D., & Phan, A. C. (2018). Determinants of customer satisfaction and loyalty in Vietnamese life-insurance setting. *Sustainability*, 10(4), 1151- 1166.
- Nguyen, L. T., Lin, T. M., & Lam, H. P. (2021). The Role of Co-Creating Value and Its Outcomes in Higher Education Marketing. *Sustainability*, 13(12), 6724–6738.
- Nouraldeen, R. M., Mandour, M., & Hegazy, W. (2020). The impact of interactive internal audit function quality determinants and coordination on audit report lag. *BAU Journal-Creative Sustainable Development*, 2(1), 1-34.
- Nunnally, J. C. (1978). *Psychometric Theory: 2d Ed.* McGraw-Hill.
- Oliver, R. L., Rust, R. T., & Varki, S. (1997). Customer delight: foundations, findings, and managerial insight. *Journal of retailing*, 73(3), 311-336.
- Opata, C. N., Xiao, W., Nusenu, A. A., Tetteh, S., & John Narh, T. W. (2020). Customer Value Co-Creation in the Automobile Industry: Antecedents, Satisfaction, and Moderation. *SAGE Open*, 10(3), 1-11.
- Orozco, F. C., & Arroyo, J. C. (2017). Students' loyalty in higher education: The roles of affective commitment, service co-creation and engagement. *Cuadernos De Administración*, 33(57), 96-110.
- Ozturk, A. B., Bilgihan, A., Nusair, K., & Okumus, F. (2016). What keeps the mobile hotel booking users loyal? Investigating the roles of self-efficacy, compatibility, perceived ease of use, and perceived convenience. *International Journal of Information Management*, 36(6), 1350-1359.
- Peña, A. I., Jamilena, D. M., & Molina, M. Á. (2014). Value co-creation via information and communications technology. *The Service Industries Journal*, 34(13), 1043-1059.
- Peterson, R. A. & Kim, Y. (2013). On the relationship between coefficient alpha and composite reliability. *Journal of Applied Psychology*, 98(1), 194–198.
- Prahalad, C. K., & Ramaswamy, V. (2004). Co-creation experiences: The next practice in value creation. *Journal of interactive marketing*, 18(3), 5-14.
- Prastiwi, E. H., & Hussein, A. S. (2019, October). The Role of Value Co-Creation in Improving Customer Loyalty with Customer Satisfaction as Mediating Variable. In *2019 International Conference on Organizational Innovation (ICOI 2019)* (pp. 596-601). Atlantis Press.
- Pucciarelli, F., & Kaplan, A. (2016). *Competition and strategy in higher education: Managing complexity and uncertainty*. *Business Horizons*, 59(3), 311–320.
- Rahmani, Z., Ranjbar, M., & Gara, A. A. N. (2017). The study of the relationship between value creation and customer loyalty with the role of trust moderation and customer satisfaction in Sari hospitals. *Electronic physician*, 9(6), 4474-4478.
- Rajah, E., Marshall, R., & Nam, I. (2008). Relationship glue: customers and marketers co-creating a purchase experience. *ACR North American Advances*, 35, 367-373.
- Ranjan, K. R., & Read, S. (2016). Value co-creation: Concept and measurement. *Journal of the Academy of Marketing Science*, 44(3), 290–315.
- Regmi, P. R., Waithaka, E., Paudyal, A., Simkhada, P., & Van Teijlingen, E. (2016). Guide to the design and application of online questionnaire surveys. *Nepal journal of epidemiology*, 6(4), 640-644.
- Reichheld, F. F., & Scheffer, P. (2000). E-loyalty: your secret weapon on the web. *Harvard business review*, 78(4), 105-113.
- Revelle, W. (1979). Hierarchical cluster analysis and the internal structure of tests. *Multivariate Behavioral Research*, 14(1), 57-74.
- Ribes-Giner, G., Perello-Marín, M. R., & Díaz, O. P. (2016). Co-creation impacts on student behavior. *Procedia-Social and Behavioral Sciences*, 228, 72-77.
- Rice, J. (2005). *Co-creation, part 3* (CC). Retrieved 11/11, 2020, retrieved from www.brandshift.corante.com
- Rogers, H. P., Peyton, R. M., & Berl, R. L. (1992). Measurement and evaluation of satisfaction processes in a dyadic setting. *Journal of Consumer Satisfaction, Dissatisfaction and Complaining Behavior*, 5(1), 12-23.

- Rowley, J. (2003). Retention: rhetoric or realistic agendas for the future of higher education. *The International Journal of Educational Management*, 17(6), 248-253.
- Rundle-Thiele, S. (2005). Elaborating customer loyalty: exploring loyalty to wine retailers. *Journal of Retailing and Consumer Services*, 12(5), 333-344.
- Sarstedt, M., Ringle, C. M., Smith, D., Reams, R., & Hair Jr, J. F. (2014). Partial least squares structural equation modeling (PLS-SEM): A useful tool for family business researchers. *Journal of Family Business Strategy*, 5(1), 105-115.
- Sashi, C. M. (2012). Customer engagement, buyer-seller relationships, and social media. *Management decision*, 50(2), 253-272.
- Sekaran, U., & Bougie, R. (2016). *Research methods for business: A skill building approach*. John Wiley & Sons.
- Shi, G., Shi, Y. Z., Chan, A. K., & Wang, Y. (2009). Relationship strength in service industries: a measurement model. *International Journal of Market Research*, 51(5), 1-20.
- Shrivastava, P. (2016). Effect of Co-Creation on Customer Experience, Trust and Brand Loyalty. *International Journal of Sales & Marketing Management Research and Development (IJSMMRD)*, 6(6), 1-14.
- Singh, J. J., Iglesias, O., & Batista-Foguet, J. M. (2012). Does having an ethical brand matter? The influence of consumer perceived ethicality on trust, affect and loyalty. *Journal of Business Ethics*, 111(4), 541–549.
- Steen, T., & Brandsen, T. (2020). Coproduction during and after the COVID-19 Pandemic: Will It Last?. *Public Administration Review*, 80(5), 851-855.
- Storbacka, K., Strandvik, T., & Grönroos, C. (1994). Managing customer relationships for profit: the dynamics of relationship quality. *International journal of service industry management*, 5(5), 21-38.
- Straub, D. W. (1989). Validating Instruments in MIS Research. *MIS Quarterly*, 13(2), 147-169.
- Terblanche, N. S. (2014). Some theoretical perspectives of co-creation and co-production of value by customers: original research. *Acta Commercii*, 14(2), 1-8.
- The Muhanna Foundation. (2010). Private universities in Lebanon, performance indicators, accountability and value – for – money. Retrieved August 29, 2020, Retrieved from www.muhanna.org/wp-content/uploads/2016/01/Private-Universities-in-Lebanon-Performance-Indicators-Accountability-and-Value-for-Money.pdf
- Tse, D. K., & Wilton, P. C. (1988). Models of consumer satisfaction formation: An extension. *Journal of marketing research*, 25(2), 204-212.
- Vargo, S.L., & Lusch, R.F. (2008). Service dominant logic: continuing the evolution. *Journal of the Academy of Marketing Sciences*, 36(1), 1-10.
- Yacob, Y., Ali, J. K., Hii, J. W. S., & Lim, X. J. (2018). Members' Participation in Service Co-Creation: The Mediating Effect of Satisfaction towards Loyalty. *Asian Journal of Business Research*, 8(2), 18-33.
- Yi, Y., & Gong, T. (2013). Customer value co-creation behavior: Scale development and validation. *Journal of Business research*, 66(9), 1279-1284.
- Yieh, K., Chiao, Y. C., & Chiu, Y. K. (2007). Understanding the antecedents to customer loyalty by applying structural equation modeling. *Total quality management & business excellence*, 18(3), 267-284.
- Zins, A. H. (2001). Relative attitudes and commitment in customer loyalty models. *International Journal of Service Industry Management*, 12(3), 269-294.