Intellectual Capital and Value Co-Creation: an Empirical Analysis from a Marketing Perspective

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Abstract: The aim of this study is to investigate intellectual capital (IC) drivers that may influence Italian consumers' decision to participate in value co-creation (VCC) activities with firms. Given the exploratory nature of the research, after a review of the relevant literature, we conducted a survey among Italian consumers to see if IC principal sub-dimensions (i.e. Relational Capital, Human Capital and Structural Capital) played a role in triggering VCC processes. Using a Principal Component Analysis (PCA), we analyzed 270 usable questionnaires finding that, in order to decide to co-create value with firms, IC sub-dimensions actually play a critical role. Our findings showed that the motivations (i.e., IC components) that influence Italian consumers' decision to participate in value co-creation activities with firms are quite homogeneous and similar both for those who already participated in past in these activities as well for those who never participated. The study has several managerial implications as well as limitations. In fact, the survey has been conducted only among Italian consumers and therefore the research should be extended by a geographically standpoint. Moreover, the research analyzed only the demand-side, while it would be certainly useful to know the point of view of companies also adopting other research methods (e.g., in-depth interviews). This study provides to practitioners important suggestions and warnings about the importance of the development of IC sub-dimensions to (co-)create value with external actors and consequently suggests the importance of adopting a "open" approach towards consumers to establish an effective and interactive relationship with them. The study fills a gap in the literature, since there are not so many references in literature for a deep understanding of the concrete relationship between IC and VCC. In addition, to our best knowledge this paper is the first that explore IC-related issues from a marketing perspective.

Keywords: value co-creation, intellectual capital, marketing, factor analysis, exploratory empirical analysis, consumer behaviour

1. Introduction

Nowadays, consumers must be placed at the center of every firms' process for achieving success in hyper-competitive markets. This customer-centered approach should therefore lead firms that want to retain their actual customers and attract prospects to recognize the critical and central role of human and subjective elements of the relationships they established with customers. That is, value creation *for* and *with* consumers must be guided first of all by the creation of a strong cognitive and emotional bond between consumers and firms, pursuing the final goal of making consumers "engaged" towards firms' activities.

In essence, we argue that when the consumer interacts with a company (especially in open innovation contexts), he/she wants, in first place, to create an empathic link with the firm's "personality". Following this perspective, we propose that firms' intangibles (i.e., Intellectual Capital - IC) (Edvinsson, 1997; Edvinsson and Malone, 1997; Bontis, 1999) are the only elements that give to firms a sort of subjectivity/personality (e.g., values incorporated in the brand). So, we consider absolutely critical to study and recognize that the link between firms' intangibles and consumers is fundamental to understand the VCC phenomenon (and the reasons that motivate consumers to co-create). In addition, this research helps firms to shed light on the importance that might have to leverage on their intangibles to generate more value with consumers' collaboration. This research area is still underdeveloped and it needs more theoretical and empirical investigation.

Thus, this paper aims to explore the relationship between the determinants (i.e., sub-dimensions) of IC and VCC activities. Since there are not yet sufficient references for a deep understanding of this relationship, and no one with regard to Italian market, we decided to explore and study the motivations related to the intangibles of firms which push Italian consumers to participate in co-creation activities with firms.

The study is structured as follows: first, we define the theoretical background of the study and the research questions (§2); second, we expose the used methodology (§3); third, we discuss the findings (§4); fourth, we present our conclusions and managerial implications (§5); in the end, we expose limitations and future line research (§6) along with the references used in our study.

2. Theoretical background and research questions

2.1 IC conceptual foundations and evolution stages

IC is a multidimensional and multi-faceted concept which includes all the intangible assets on which a firm can count while doing its activities. Drawing upon the literature, scholars acknowledged the existence of three major components of IC, namely "Human Capital" (HC), "Structural Capital" (StC), and "Relational Capital" (RC) (Edvinsson and Malone, 1997; Stewart, 1997; Sveiby, 1997; Bontis, 1999). That is, from an internal perspective literature on IC recognizes that people (HC) and systems and procedures (StC) are essential for firms' everyday activities as well as the interactions between them and their external (RC) stakeholders. In fact, as noted also by Kianto (2007) and Kianto, *et al*. (2014) even though both static and dynamic approaches have been used to study IC in its different stages (Dumay and Garanina, 2013) an undoubtedly general consensus on its key role for value creation and to achieve a competitive advantage is preeminent today.

Even if sometimes it has been called with other names, it's possible to retrieve in different fields of literature several statements about the importance of IC and, more in general, of intangible assets or resources. For example, in organizational studies the role of IC components has been highlighted in the resource-based view of firms (e.g., Penrose, 1959; Wernerfelt, 1984). In strategic management realm, since the early '90s Peter Drucker (1993; 1995) also appointed the need for shifting toward a new paradigm for firms which want to continue to generate value in the information era by establishing a social capital view of their activities in the nascent knowledge economy. Moreover, in accounting field of study IC and intangibles have been studied and measured for decades in order to understand their contribution to the economic value of organizations (e.g., Veltri, 2007; Veltri, Mastroleo and Schaffhauser-Linzatti, 2014).

The transversality of realms in which IC and intangibles have been studied showed, on the one hand, that it's fundamental to don't underestimate their importance for the activities of firms and for their decision making processes but, on the other hand, that there are also several different theoretical and practical approaches to IC depending from the main objective of researchers that prevent a broader and integrated view of the role of IC today.

The necessity of unify the view of IC as a whole is coherent with the need to tend to the so called "fourth stage" of research on IC as outline by Dumay and Garanina (2013). The fourth stage of IC research (ICR) is the last of a series of steps that literature on IC has followed during approximately the last thirty years. We quote this approach to the study of the evolution of ICR because of today there is a large consensus between scholars about the goodness of this classification to describe the evolution of IC in the last three decades (e.g., Dumay and Garanina, 2013; Dumay, Guthrie and Puntillo, 2015; Secundo, *et al.*, 2017).

Recently, Guthrie, Ricceri and Dumay (2012) offered an extensive literature review of ICR in their influential paper from the first to the third stage. According to the authors, we can briefly summarize the evolution of ICR as follows:

- In the first stage, most of contributes about IC originated from practitioners' studies. For example, three of the most cited authors in the field (i.e., Edvinsson, 1997; Sveiby, 1997; Stewart, 1997) came from private organizations. In this period, the debate about IC in academicians' world was really underdeveloped even though it was addressed by practitioners as an important topic for creating and managing sustainable competitive advantage (Petty and Guthrie, 2000).
- In 2000, drawing upon practitioners' evidences, Petty and Guthrie (2000) elaborated a conceptual framework for IC, opening the doors for further debates and developments of this new concepts. Since then, many studies have developed several conceptual and theoretical framework about IC to better define its domain and also a large number of measurement systems raised up in this period (e.g., Sveiby, 2010).

- Finally, in the third stage IC has become to be considered a "*dynamic, not static, system of intangible resources (…) [in which] attention is focused on the interactions between the IC components and the managerial activities*" (Secundo *et al.*, 2017, p. 248).

Nowadays, a fourth stage of ICR is emerging. In this stage, the dynamic view of IC as a set of intangible resources is moving forward to a broader view of IC which includes the interactions of its intangible components (i.e., HC, StC, and RC) with internal resources and external stakeholders of firms (e.g., customers, suppliers, employees etc.). It's based on the process of bridging internal knowledge (HC and StC) and external knowledge (RC), combining IC components into a new perspective that includes the social aspects of IC (Secundo *et al.*, 2017).

Therefore, we propose that nowadays it's more and more clear for the management that the path to follow for organizations is strictly dependent by the correct enhancement and empowerment of the intangible elements discussed above. In particular in a social media-driven era, in which customers want to interact and to be engaged by the firms before buying their products, IC cannot but to be deputy to play a key role in value (co-)creation.

2.2 The strategic role of IC in VCC processes

As noted before, in understanding IC as a strategic set of intangible assets, it's essential to underline that its importance originates not only from the "quality" of the intangibles by themselves, but also from the firm's ability in managing them to engage external actors in order to stimulate them to (co-)create value for themselves and for the firm (i.e., VCC). This approach to IC is coherent with the actual ICR that is calling for more practical and empirical studies in the fourth stage of ICR to understand what are the concrete consequences of IC in action (Dumay and Garanina, 2013). So, adopting a strategic view of its components and broadening the scope of action of IC, we argue that it's critical to highlight the roles that IC components could play in the creation of business value and in particular in the activation of effective value co-creation processes (Prahalad and Ramaswamy, 2004).

Drawing upon marketing literature, today there is a general consensus among scholars that to investigate value co-creation is fundamental – first of all – to acknowledge the rationale of the Service-Dominant (S-D) logic (Vargo and Lusch, 2004, 2008; Vargo, Maglio and Akaka, 2008; Lusch and Vargo, 2014). In S-D logic, producers (providers) and users (beneficiaries) are not conceived as separate entities, but as entities that cooperate to co-create value through reciprocal interactions in a *service-for-service exchange environment*. In fact, as Vargo and Lusch (2008, p. 2) stated in their research, "*the customer is always a co-creator of value*". In addition, Lusch, Vargo and Tanniru (2010, p. 22) noted that "*the firm can only make and follow through on value propositions*". So, in the S-D logic, the focus is totally placed on service that producers and users contribute to (co-)create. When firms operate in according to the S-D logic, all the actors/participants become active players in value co-creation for themselves and for the other stakeholders. Thus, we can define value co-creation as an interactive collaborative model in which the consumer becomes an active core resource for the value creation process. The concept of value co-creation is based on the rationale that a firm needs to work *with* and not *for* consumers, co-creating value with them using their skills and insights (Prahalad and Ramaswamy, 2000; 2004). Furthermore, it's important to observe that to trigger a value co-creation process transaction is not necessary, in fact actors just have to exchange resources, term that, in S-D logic, goes beyond the simple purchase of goods.

In that way, it's possible also to better understand the essential role played by the engagement of consumer toward the firm in order to activate effective value co-creation processes. According to Storbacka *et al.* (2016), consumer engagement is a microfoundation of value co-creation and so "*without (…) engagement no resource integration happens and no value can be co-created*" (p. 3008). We can briefly define consumer engagement as a latent construct related to the cognitive, emotional and behavioural dimensions of the interactions between firms and customers in a specific (social) context (Gambetti and Graffigna, 2010; Brodie and Hollebeek, 2011; Brodie, Hollebeek and Smith, 2011, Brodie, *et al.*, 2011; Hollebeek, 2011a, 2011b, 2011c; Hollebeek *et al.* 2014; Brodie, *et al.* 2016) that also "*goes beyond purchase*" (Vivek *et al.*, 2014, p. 406). In addition, consumer engagement is widely recognize as one of the most important strategic goal to achieve in contemporary markets, which are nowadays more and more open, interactive, interconnected, and populated

by empowered consumers (Cova and Dalli, 2009) which want to co-create value and to cooperate with their preferred firms.

In our perspective, if it's true that value co-creation occurs (at least) through the resources integration between firms and consumers and that the firms can only offer a *value proposition* (Lusch, Vargo and Tanniru, 2010) rather than a "value in itself", it's necessary, in first place, to recognize that firms and consumers have to develop a (at least virtual) common space in which it is possible to get a deeper acquainted of each other and to interact.

The only way to create such a common space is through the development of a good level of engagement between firms and consumers. Nevertheless, the extant literature on consumer/customer engagement has studied this construct almost only with regard to the relationship between *brand* and *consumers*. Several contributes in literature, in fact, have explored the role or the nature (i.e., dimensions) of *consumer-brand engagement* (Gambetti and Graffigna, 2011; Hollebeek, Green and Brodie, 2014; Vernuccio *et al.*, 2016; Rossi, 2016) and *customer-brand engagement* (Brodie and Hollebeek, 2011; Hollebeek, 2011a, 2011b, 2011c; Vivek *et al.*, 2014) – sometimes using the terms of "*customer*" and "*consumer*" as synonyms – showing less attention to the other intangible components of firms (i.e., IC) that could be able to engage consumers and consequently push them to participate in VCC activities.

Following this perspective, we propose to see the three main dimensions of IC as basis to generate engagement among consumers and, then, to stimulate them to co-create value with firms, participating in interactive VCC activities established by firms in a specific context and/or situation. Given the absence, to our best knowledge, of previous works about the relationship between IC and VCC from a marketing perspective, we implemented a quantitative exploratory analysis that aims to answer to the following research questions (RQ$_s$):

- RQ$_1$: What are the principal IC components that influence the decision to participate in VCC activities in Italian consumers?
- RQ$_2$: How the principal IC sub-dimensions (i.e, Relational Capital, Human Capital and Structural Capital) are correlate with IC components which motivate Italian consumers to participate in VCC activities? Are there any differences between the motivations (IC components) of those who already participated and among those who never participated in VCC activities?
- RQ$_3$: Are the principal IC components good predictors of Italian consumers' intention to participate in VCC activities?

3. Methodology

3.1 The context of investigation

Before exposing our methodology, we now explain why we thought that Italy could be a good Country to make our investigation. We chosen Italy as context for our research for three main reasons: first, despite the economic crisis still reflects its effects on Italian households, their propensity to consume remained solid and there are also good forecasts for the 2017 (ISTAT data, 2016); secondly, Italy, despite the presence of many dialects, is a Country that has a unitarian national culture rooted in strong values shared by the entire population; third, Italy is a developed country with a inequality index lower than the average of OECD Countries (Fondazione David Hume, 2016).

Thus, the general profile of the Italian citizens we investigated is quite homogenous from the point of view of its own cultural values and socio-economic situation and so the analysis didn't risk to be biased by significant social differences and allowed us to choose a convenience sample of Italian citizens for our investigation.

3.2 Sampling

Data were collected via web through a questionnaire created on SurveyMonkey platform over a time span of 5 weeks between September and October 2016. Our convenience sample consisted in Italian consumers (for this study we used as criterion only the consumers' nationality – Italians or not – for the reasons explained in paragraph 3.1) contacted on social networking sites and through emailing using a snowball sampling technique (Voicu and Babonea, 2011). Before starting our field investigation, we pretested our survey with a small group of consumers (n=16). From the pretest phase didn't emerged any particular problem so we started our investigation with the same questionnaire used in the pretest phase (for more details about questionnaire see

paragraph 3.3). Of the 280 questionnaires collected, 10 were not usable (96% completion rate). So, a total of 270 questionnaires remained available for data analysis. The majority of respondents aged between 16 and 35 years old (76.7%) and lived in the center of Italy (68.15%) with a family annual income that ranged from €15,000 and €60,000. The 53.3% were males and the 77.78% had at least a bachelor's degree. More details about respondents' socio-demographic data are reported in table 1.

Table 1: Respondents' socio-demographic data

Respondents' socio-demographic data	
Gender	**Male**: 53.14% **Female**: 46.86%
Age	**16-24**: 17.71% **25-34**: 59.04% **35-44**: 9.96% **Over 45**: 13.28
Geographic Area of Origin	**North of Italy**: 12.55% **Central Italy**: 68.27% **South of Italy**: 19.19%
Qualification	**Secondary School**: 0.74% **High School**: 21.40% **Bachelor/Master Degree**: 58.67% **Post-lauream Degree**: 19.19%
Annual Family Income (in €)	**0-14,999**: 17.46% **15,000-29,999**: 37.64% **30,000-59,999**: 32.10% **Over 60,000**: 15.50%

3.3 Questionnaire structure

The questionnaire was structured as follows:

- At the beginning, we explained to respondents the purpose of the research. In addition, we also provided them the definitions of IC and VCC for a better understanding of our survey.
- Secondly, we asked respondents to assigned a value on a 7-point Likert-type scale (ranging between 1=absolutely irrelevant and 7=absolutely important) on 11 items about IC, developed after a focus group (that had in total 6 participants: 1 professor of management, three junior researchers in management topics and the authors), that mostly influence the relationship of the respondents with a firm in general (in this section the VCC was not mentioned).
- In the following section, we asked respondents if they have participated at least once to a VCC activity with a firm. Of the 270 respondents, 45 have declared to have participated at least once to a VCC initiative. At this point, two sub-samples were obtained (45 respondents who participated and 225 respondents who never participated in VCC activities).
- After another focus group with the same management experts which helped us to develop the first 11 items for the first section of the questionnaire, we have identified 10 items that correspond to the reasons (related to aspects of firms' intangibles) that have pushed a respondent to participate in one or more VCC activities (if he has participated in past) or that would motivate a respondent to participate (if he has not yet participated). Also in this section we asked respondents to assigned a value on a 7-point Likert-type scale about the importance of these items for them (ranging between 1=very unimportant and 7=very important).
- In the final section, we collected socio-demographic data (age, gender, qualification etc.) about the respondents and asked them to provide us other email addresses to contact for our investigation.

3.4 Data analyses

An EFA (using the PCA technique) was conducted among Italian consumers to highlight the main IC sub-dimensions that mostly influence their relationship with a firm in general and the components that influence their willingness to participate in VCC activities. A series of bivariate analyses were employed to understand how strong were the differences between IC sub-dimensions and IC related components which most influence the decision to participate in VCC activities. In addition, multiple regression analyses were conducted to test the last research question. The software we used for the analyses was IBM SPSS 23.0.

4. Results

To answer the RQ$_1$, an EFA was conducted on data collected with the PCA technique with the aim to reduce data and identify the principal IC components related to those who have never participated (NPART) in VCC activities and the principal IC components related to those who have participated (PART) at least once in VCC activities. As mentioned, a PCA was conducted with a Promax rotation method (*k*=4) and with latent root criterion (eigenvalues>1). Of the original 10 items (10 for NPART and 10 for PART) one for both sub-samples were deleted because they showed factor loading values much smaller than 0.50 (Hair *et al.*, 2009). We decide in turn to retain the last item showed in table 3 because it was very close to the cut-off of 0.50 (0.495). So, 9 items remained for both sub-samples. The components' solution accounted for 59.6% of total variance in NPART sub-sample and for 65.5% in PART sub-sample. The Kaiser-Meyer-Olkin (KMO) test values were 0.846 for NPART and 0.808 for PART sub-sample. Also Bartlett's test showed significant values (p=0.000 for both sub-samples, χ^2(36)=732.380 – for NPART – and χ^2(36)=208.925 – for PART). These results, according to the literature (Hair *et al.*, 2009), showed the factorability of the matrices we obtained. In order to test the reliability of results, we calculated Cronbach's Alpha values (Cronbach's, 1951) for every component. Cronbach's Alpha values showed good values for our analysis, ranging from 0.848 and 0.768). In the end, we obtained two components for NPART ("Know-how integration & innovation orientation" and "Reputation & relational skills" with, respectively, *α*=0.825 and *α*=0.768) and two components for PART ("Innovation & openness to sharing skills" and "Reputation & relational skills" with, respectively, *α*=0.848 and *α*=0.834). In table 2 and 3 we summarize these results.

Table 2: Factor analysis of NPART sub-sample

Variables	Components		Cronbach's Alpha
	1	2	
Know-how integration & innovation orientation			0.825
The fact that I feel a sense of self-fulfillment in giving my contribution to an innovative initiative.	0.877		
The fact that I feel a particular emotional and/or cognitive bond with the company (e.g. because my parents have always spoken well about the firm to me etc.).	0.780		
The fact that I feel to be able to give a concrete contribution thanks to the expertise that I have in specific areas.	0.758		
The fact that previous initiatives had already involved customers and that they have been delighted to have participated (e.g. through reviews written on internet by them).	0.706		
The fact that previous initiatives were particularly innovative and up-to-date.	0.667		
Reputation & relational skills			0.768
The fact that the employees of the firm (e.g. customer service, contact personnel in the stores etc.) are very kind and attentive to customers.		0.880	
The fact of knowing that employees collaborate actively in first person with the firm, which reciprocates by giving them a particularly favorable treat (economic or not).		0.802	
The estimate that I put in brand values and towards the firm's most representative personalities (e.g. top-management).		0.713	
The fact that the company has been particularly transparent in explaining purpose and usefulness of the participation to the initiative.		0.592	
KMO	0.846		
Bartlett's test is significant at the 0.00 level	*p-value*=0.000 χ^2(36)=732.380		

Table 3: Factor analysis of PART sub-sample

Variables	Components		Cronbach's Alpha
	1	**2**	
Innovation & openness to sharing skills			0.848
The fact that I've felt to be able to give a concrete contribution thanks to the expertise that I have in specific areas.	0.988		
The fact that I've felt a sense of self-fulfillment in giving my contribution to an innovative initiative.	0.943		
The fact that the initiative was particularly innovative and up-to-date.	0.723		
The estimate that I've felt towards brand values and towards the firm's most representative personalities.	0.547		
Reputation & relational skills			0.834
The fact that the employees of the firm (e.g. customer service, in-store contact personnel etc.) are very kind and attentive to customers.		0.868	
The fact that previous initiatives had already involved customers and that they have been delighted to have participated (e.g. through reviews written on internet by them).		0.833	
The fact that the firm has been particularly transparent in explaining the purpose and usefulness of the participation in the initiative.		0.821	
The fact of had known that employees collaborate actively in first person with the firm, which reciprocates by giving them a treat (economic or not) particularly favorable.		0.592	
The fact that I've felt a particular emotional and/or cognitive bond with the company (e.g. because my parents have always spoken well of the firm to me etc.).		0.495	
KMO	0.808		
Bartlett's test is significant at the 0.00 level	*p-value*=0.000 χ^2(36)=208.925		

Afterwards (to answer the RQ$_2$), we conducted the same PCA on the first group of items about IC that mostly influence the relationship of respondents with a firm in general. As expected, according to the previous literature, we found three components that corresponded conceptually to the main three sub-dimensions of IC (i.e., Relational Capital, Human Capital and Structural Capital) for both sub-samples. KMO assessed the appropriateness of the factor analysis conducted (0.789 for NPART and 0.649 for PART) and also Bartlett's test values were significant at the 0.000 level (p=0.000 for both sub-samples, χ^2(28)=493.623 – for NPART – χ^2(28)=105.198 – for PART). The Cronbach's Alpha ranged from 0.545 to 0.755. As expected, the correlation between IC components that we found and IC sub-dimensions was significant with the only exception of Structural Capital with the "Reputation and relation skills" component in PART sub-sample (two-tailed model with α=0.05 and α=0.01). In particular, we observed that Relational capital is the most influence sub-dimension of IC on the components found in our PCA analysis (0.555 and 0.484 for PART and 0.616 and 0.423 for NPART). These results led us to conclude that the Relational Capital is the most important sub-dimension, in term of individual motivation, for Italian consumers that participated in past in VCC activities as well as for those who never participated. The results associated to RQ$_2$ are showed in the following tables (see table 4 and table 5).

Table 4: Correlations between IC sub-dimensions and IC components in PART sub-sample

	PART sub-sample	
	Know-how integration & innovation orientation	**Reputation & relational skills**
Relational Capital	0.555**	0.484**
Human Capital	0.319*	0.339*
Structural Capital	0.412**	0.260

* Correlation is significant at the 0.05 level (two-tailed)
** Correlation is significant at the 0.01 level (two-tailed)

Table 5: Correlations between IC sub-dimensions and IC components in NPART sub-sample

	NPART sub-sample	
	Innovation and openness to sharing skills	**Reputation & relational skills**
Relational Capital	0.616**	0.423**
Human Capital	0.310**	0.401**
Structural Capital	0.343**	0.291**

* Correlation is significant at the 0.05 level (two-tailed)
** Correlation is significant at the 0.01 level (two-tailed)

Finally, we estimated two multiple regression models for every sub-sample to verify our RQ_3. The results showed that there was no multicollinearity in the two sub-samples, having good variance inflation factors (VIF), tolerance indexes, and Durbin-Watson values according to Hair *et al.* (2009). In PART sub-sample, we observed that only the Relational capital was significant (t=3.280 and p=0.002 for "Innovation & openness to sharing skills" component and t=2.866 and p=0.007 for "Reputation and relational skills" component). In NPART sub-sample, instead, we found that, in addition to Relational capital (t=8.960 and p=0.000 for "Know-how integration & innovation oriented" component and t=3.580 and p=0.000 for "Reputation and relational skills" component), also Human capital (for "Reputation and relational skills") and Structural capital (for both component) were significant (see Table 6 and 7). Afterwards, we conducted an ANOVA analysis for every sub-sample in order to verify if the models were globally significant. We found that, for both sub-samples, our models were significant (F=8.155 and p=0.000 for "Innovation & openness to sharing skills" and F=5.436 and p=0.003 for "Reputation and relational skills"; F=48.072 and p=0.000 for "Know-how integration & innovation oriented" and F=24.211 and p=0.000 for "Reputation and relational skills").

Table 6: Regression model for NPART sub-sample

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sign.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	-2.358E-17	0.052	------------	0.000	1.000	------------	------------
Relational Capital	0.562	0.063	0.562	8.960	0.000	0.695	1.439
Human Capital	0.010	0.060	0.010	0.160	0.873	0.766	1.305
Structural Capital	0.132	0.056	0.132	2.346	0.020	0.860	1.163

a. Dependent variable: Know-how integration & innovation orientation

ANOVA[a]

Model	Sum of Squares	df	Mean Square	F	Sign.	Durbin-Watson
Regression	88.452	3	29.484	48.072	0.000[b]	
Residual	135.548	221	0.613			1.903
Total	224.000	224				

a. Dependent variable: Know-how integration & innovation orientation

b. Predictors: (constant), Structural Capital, Human Capital, Relational Capital

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sign.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	7.350E-17	0.058	------------	0.000	1.000	------------	------------
Relational Capital	0.251	0.070	0.251	3.580	0.000	0.695	1.439
Human Capital	0.249	0.067	0.249	3.732	0.000	0.766	1.305
Structural Capital	0.142	0.063	0.142	2.264	0.025	0.860	1.163

a. Dependent variable: Reputation & relational skills

ANOVA[a]

Model	Sum of Squares	df	Mean Square	F	Sign.	Durbin-Watson
Regression	55.409	3	18.470	24.211	0.000[b]	
Residual	168.591	221	0.763			1.770
Total	224.000	224				

a. Dependent variable: Reputation & relational skills

b. Predictors: (constant), Structural Capital, Human Capital, Relational Capital

Table 7: Regression model for PART sub-sample

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sign.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	-8.845E-17	0.122	------------	0.000	1.000	------------	-----------
Relational Capital	0.443	0.135	0.443	3.280	0.002	0.836	1.196
Human Capital	0.142	0.132	0.142	1.078	0.287	0.878	1.139
Structural Capital	0.200	0.138	0.200	1.450	0.155	0.806	1.240

a. Dependent variable: Innovation & openness to sharing skills

ANOVA[a]

Model	Sum of Squares	df	Mean Square	F	Sign.	Durbin-Watson
Regression	16.443	3	5.481	8.155	0.000[b]	
Residual	27.557	41	0.672			1.523
Total	44.000	44				

a. Dependent variable: Innovation & openness to sharing skills

b. Predictors: (constant), Structural Capital, Human Capital, Relational Capital

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sign.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	1.046E-16	0.131	------------	0.000	1.000	------------	------------
Relational Capital	0.414	0.144	0.414	2.866	0.007	0.836	1.196
Human Capital	0.222	0.141	0.222	1.576	0.123	0.878	1.139
Structural Capital	0.034	0.147	0.034	0.231	0.819	0.806	1.240

a.   Dependent variable: Reputation & relational skills

ANOVA[a]

Model	Sum of Squares	df	Mean Square	F	Sign.	Durbin-Watson
Regression	12.521	3	4.174	5.436	0.003[b]	
Residual	31.479	41	0.768			1.756
Total	44.000	44				

a. Dependent variable: Reputation and relational skills

b. Predictors: (constant), Structural Capital, Human Capital, Relational Capital

5. Managerial implications and discussion

Our study, based on an exploratory factor analysis, investigated the relationship between IC sub-dimensions and VCC drivers from the Italian consumers' perspective. To our best knowledge, our study is the first in the field of marketing which try to correlate the participation of consumers in VCC activities not only for their preference with a particular brand, but with the entire firm intangibles' system. This research offers several managerial implications as well as theoretical insights. We can in first place suggest to firms which want to engage and involve their customers in VCC activities to invest money, efforts and time in order to create a better brand image and reputation and to enhance their relational skills due to the importance of Relational Capital that showed our findings. In addition, Italian consumers seem to take in great consideration the way in which the firm try to be close to them and consonant with the values they consider essential. Consequently, operating in an open innovation environment also seems very important to motivate consumers to participate in VCC activities. People who participated in past to a VCC activity (PART) clearly showed the importance of propensity for innovation and for the degree of openness to sharing skills of firms in order to participate in VCC activities. People who never participated (NPART), seemed to be also motivated by the propensity for innovation and for know-how integration (very similar to the degree of openness to sharing skills for PART). Furthermore, both sub-samples considered absolutely critical firms' reputation and relational skills in order to motivate them to participate in VCC activities. In the end, we can conclude that, although there are some differences in the two sub-samples, they seem to be motivated by very similar intangible factors. Thus, we believe that IC components should be taken in greater consideration also in marketing field of study, in which is currently missing the correct focalization that intangibles deserve to make value co-creation activities more effective.

6. Limitations and future lines of research

We have to acknowledge the several limitations of this study. First, our study is based on a convenience sampling method which is geographically limited to Italian consumers who have different behaviours and culture than people from other Countries. Moreover, our PART sub-sample is very small (n=45) and should be increased in future studies to enhance its statistical validity. For these reasons we believe that our results cannot be generalized uniformly (*tout-court*) to consumers living in the rest of the world. Therefore, we invite researchers to conduct further investigations about the relationship between IC and VCC using this study as a conceptual framework for their future researches. In particular, we invite researchers to develop new items for a better comprehension of the phenomenon and to try to develop a generalizable scale that can explain the different factors which affect the motivations that influence consumers decision to participate or not to VCC activities of firms. Moreover, this research analyzed only the demand-side, while it would be certainly useful to uncover the point of view of companies on these issues also adopting qualitative and inductive research methods (e.g., in-depth interviews or focus groups with managers).

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