The networked consumption: development and validation of a social capital scale from the consumer perspective

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Abstract:

The escalating adoption of social capital in consumer behavior studies is marked by a myriad of measurement techniques. This multiplicity of methods is likely to yield a spectrum of outcomes, underscoring the potential for varied and significant findings. This study aims to develop and validate a social capital scale from the specific domain of consumer behavior. Purchase intention of sustainable products, and participation in brand communities, two themes widely related to social capital were employed to validate the scale, through conditional effects of self-efficacy and self-esteem. Initially, a systematic literature review was conducted for item pool generation. Then, through exploratory and confirmatory factor analysis for scale development, structural equation modeling for hypothesis predictive testing, and regression analysis for mediation testing, data from 624 participants were obtained and analyzed. The results suggest a three-dimensional factor scale with adequate psychometric properties capable of predicting consumer networked responses.

1. Introduction

Consumers are increasingly integrated with each other. On a daily basis, consumers' choices, opinions, attitudes and behaviors are affected by other consumers who cultivate these networked relationships, not always institutionalized, but which replicate and flow along each individual's chain of contacts, composing a shared way of life (Loch et al., 2015). This network of contacts and the set of by-products of these networks can be called social capital (Nahapiet & Ghoshal, 1998). Studies on consumer behavior have been documenting the relationship between social capital and consumption responses in a wide range of contexts, in which networks play a crucial role (Ghahtarani, Sheikhmohammady & Rostami, 2020, Kim, Kang & Lee, 2020, Fei, Zeng & Jin, 2022). Social capital is the network of social relationships, trust, and mutual cooperation that enables individuals and groups to achieve their community and individual goals (Coleman, 1990; Putnam, 2000). Although widely employed in consumer behavior studies, as theory and as a construct, the measurement of social capital is diverse, and without consensus, remining controversial in the existing literature (Jeong, Ha & Lee, 2021). A better understanding of the measurement of social capital is important to avoid misconceptions and a diffuse approach to consumer behavior phenomena, producing potential distinct findings. To address this limitation of the existing literature, this study aims to develop and validate a social capital scale from the specific domain of consumer behavior. From a structured literature review a pool of items were generated and validated by specialists. Then 624 participants responses were analysed through exploratory and confirmatory factor analysis for scale dimensionality. To validate the scale dimensionality, a structural equation modelling with direct and conditional analysis were performed.

1.1 Social capital in consumer behavior

In the realm of consumer behavior research, the concept of social capital plays a pivotal role in understanding the dynamics of consumer interactions and decisions. Social capital, a multifaceted construct, encompasses the networks, norms, and trust that facilitate coordination and cooperation among individuals. It significantly influences consumer behavior through various dimensions. Social capital is inherently linked to the networks and relationships consumers form. These networks can be sources of information, influence, and trust, impacting consumer decisions and brand loyalty. Studies often explore how social networks disseminate information and shape perceptions about products or brands (Wong, 2023). Central to social capital is the element of trust. In consumer behavior studies, trust is examined in the context of

brand credibility, consumer-brand relationships, and online shopping behavior. The degree of trust consumers place in a brand or within their social networks can profoundly affect their purchasing decisions (Berg, 2022). Social capital also involves shared norms and values within a community. These shared beliefs can influence consumer behavior by establishing certain consumption patterns as desirable or acceptable within a group. This aspect is particularly relevant in studies focusing on sustainable consumption, ethical products, and brand communities (Kim, Kang & Lee, 2020, Wong & Lee, 2022). With the advent of digital platforms, social capital has extended into the virtual domain. Social media networks contribute significantly to building social capital by facilitating connections and interactions. Consumer behavior studies often investigate how social media influences purchasing decisions, brand loyalty, and the spread of consumer trends. Social capital is also shaped by broader cultural and societal factors. Consumer behavior research in this context examines how cultural norms and societal structures influence consumer attitudes, values, and behaviors, especially in multicultural or diverse environments (Eckhardt & Bardhi, 2020). The presence of social capital in consumer behavior studies offers a comprehensive lens to understand how social dynamics and interpersonal relationships shape consumer attitudes, behaviors, and decision-making processes. This approach underscores the importance of social context in shaping market trends and consumer preferences (Chen et al., 2021).

2. Method

3.1 General view of techniques

Firstly, a synthesis of the literature was sought, through a Systematic Literature Review (Snyder, 2019), by means of scientometric techniques, with the use of the Bibliometrix package for the R software (Aria & Cucurrullo, 2017). The intent of this evaluation was to observe the intellectual structure of the relationship between the topics Social Capita and Consumer Behavior, and for item generation. The operational definition of Social Capital in the context of consumption proposed in this study states that the scale should assess tacit or institutionalized relationships between consumers that promote mutual benefits between them, such as trust, solidarity, cooperation, power, similarity of behavior and choices. Following the procedures proposed by Churchill (1979), Hardesty and Bearden (2004) and Lee and Hooley (2005), the 64 pool of items proposed were sent to five experts in consumer behavior for refinement. For the dimensionality analysis and psychometric properties of the scale, the Exploratory Factor Analysis (EFA) procedures, proposed by Ferrando and Lorenzo-Seva (2017, 2018), were

adopted, using the Factor software, as it allows observing a series of indicators of model fit. Diagonally Weighted Least Square (DWLS) and Robust data analysis were adopted as estimation methods, as they are better suited to non-normal data distributions, yielding good indicators of model fit, with confidence intervals calculated by boostrapping. The PROMIN rotation used in this study is oblique, given the objectives of the study, in which each factor, although independent, may have a correlation with another, more suitable for the DWLS estimation method. For the confirmatory model, in a second group of respondents, the fit analysis parameters of the proposed model were established if observing Bartlet test of sphericity by means of the chi-square ($\chi2$), the Fit Quality Index (GFI), the Normalized Fit Index (NFI), the Comparative Fit Index (CFI), and the Root Mean Square Error of Approximation (RMSEA). The validation of the scale in a nomological network and hypothesis testing employed structural equation modeling, based on partial least squares, given the predictive objective of this step, following the procedures proposed by Hair et al. (2022), using SmartPLS4. The proposed model is presented in Figure 1.
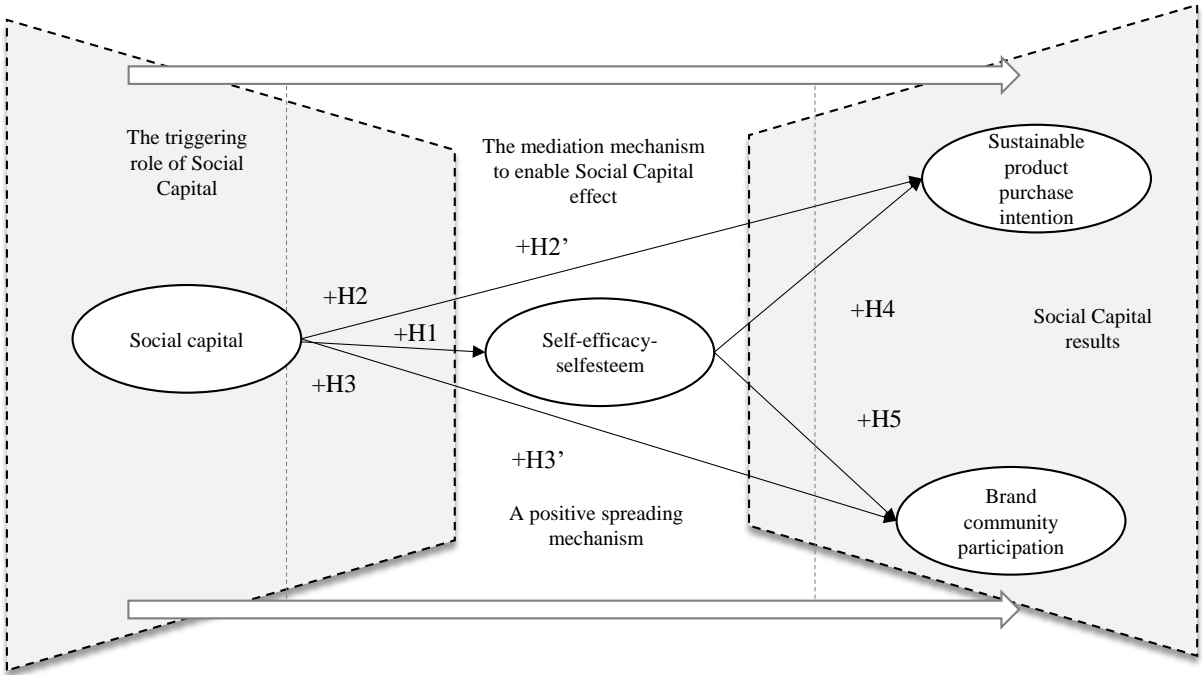

Figure 1. Nomological network for scale validation

To measure Purchase Intention it was adopted items from Dodds et al. (1991) study, adapted for sustainable products. To assess the relationship with communities of interest, the intention to participate in a brand community was measured, based on the study by Baldus, Voorhees and Calantone (2015). Finally, the study measured Self-esteem/self-efficacy, based on the study by Rogers, Chamberlin, and Ellison (1997). The capital scale used was the one developed in

this study. All items were anchored on a seven-point Likert scale, from strongly disagree, to strongly agree. Items are presented in appendix A.

2. Results

Initially, the dimensionality of the scale was evaluated, comparing the percentage of variance of the real data versus the variance explained by the resamples, through parallel analysis. When the real variance is higher than the resampling variance, it is suggested that there is a factor. When the opposite occurs, a factor is not confirmed. The final factorial solution was reached with three factors, as can be seen in Table 1.

Table 1. Scale dimensionality and main indicators

Dimensions	Variance explained	H-Latent	H-Observed	FDI	Orion	SR	EPTD
1	49.15	0.850	0.846	0.922	0.850	2.384	90.40%
2	7.44	0.938	0.901	0.968	0.938	3.885	94.50%
3	5.52	0.973	0.969	0.986	0.973	5.949	97.10%

GFI = 1.00; NFI = 0.998; CFI = 0.999; RMSEA = 0,018 confidence interval 95% [0.01; 0.05]; Bartlett = 4714.5; KMO = 0.924, p<0.001 df = 493; FDI = Factor determinancy index; SR = Sensitivity ratio; EPTD = Expected percentage of true difference; ORION = Overall Reliability of fully Informative Oblique N-EAP scores. For further information see Ferrando & Lorenzo-Seva (2016).

The confirmatory factor analysis was performed to observe the dimensionality proposed, although the exploratory factor analysis yielded satisfactory indicators. Results were also adequate, $\chi 2$= 3148, CFI = 0.918, TLI = 0.903, RMSEA = 0.084). Nomological validity was then performed to validate the scale. Table 2 provide evidence of the validity of the scale.

Table 2. Hypotheses testting

Hs	Relationship	Γ	sd	t test	p	LLCI	ULCI	Status
H1	Social capital → Self-efficacy-self-esteem	0.232	0.036	6.348	0.001	0.161	0.303	Supported
H2	Social capital → Sustainable product purchase intention	0.231	0.039	5.998	0.001	0.153	0.304	Supported
H2'	Social capital → Self-efficacy-self-esteem → Sustainable product purchase intention	0.062	0.013	4.667	0.001	0.039	0.091	Supported
H3	Social capital → Brand community participation	0.631	0.028	22.2	0.001	0.574	0.685	Supported
H3'	Social capital → Self-efficacy-self-esteem → Brand community participation	0.007	0.008	0.867	0.386	-0.009	0.024	Not supported
H4	Self-efficacy-self-esteem → Sustainable product purchase intention	0.267	0.043	6.235	0.001	0.187	0.353	Supported
H5	Self-efficacy-self-esteem → Brand community participation	0.031	0.035	0.887	0.375	-0.036	0.100	Not supported
	Social capital → Fator 2	0.729	0.023	31.4	0.001	0.682	0.775	-

Social capital → Fator 3	0.994	0.001	1874	0.001	0.993	0.995	-

2. Discussion

This study provided the construction of a measurement scale of Social Capital in the context of consumer behavior, in a second-order construct, composed of three dimensions. The results of the study also point to indicators that allow researchers who will use the instrument developed, parameters that guide its replicability, suggest points of attention for conducting research with the scale, and other parameters that suggest more security in the application of the instrument. Existing studies on the measurement of Social Capital have done so based on adjustments of the same measures from sociology adapted for consumption, largely approximating concepts linked to social capital. In Yang's (2021) study, social capital was approximated by concepts related to it, such as "social interaction," "trust in peers," and "reciprocity," with measures derived from other studies, adapted for the author's research context. Zhang and Dong (2021) measured social capital by approximating it to dimensions called "structure," "cognition," and "trust," also drawing on measures from other studies. Part of the items in Zhang and Dong's study originates from the study of Meek et al (2019) who developed a specific scale for social capital in brand communities, based on the dimensions "shared language," "shared vision," "social trust," and "reciprocity." However, in this study Meek and colleagues obtained items from other studies for the dimensions they proposed were theoretically related to social capital. In this effort, the authors gathered 25 items from other studies to apply the concept of social capital. In Wang and Ho's (2017) study, one-dimensional social capital was also adapted from other studies. In these said studies the measurement of social capital is also approximated by concepts related to it, drawing on other studies. This is the case of the study by Zinnbauer and Honer (2011). There is a wide range of studies that use the concept of social capital, measuring it through approximations of related concepts, making adaptations that replicate other adaptations. This study seeks to establish a proposal to measure social capital based on consumer behavior, observing this specific domain since the beginning of the scale formulation process. This study contributes to the theory of social capital by developing and validating a specific scale for consumption contexts in general, based on the universe of consumers.

The results obtained in the scale validation point to the predictive ability of social capital for the phenomena of buying sustainable products and participating in brand groups. This corroborates previous studies, and suggests that social capital implies that these phenomena are the result of the set of resources obtained through the consumer's networks.

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Appendix A - Study's scales

VARIABLES	ITEM
FACTOR1 - Ties and similarity of consumption	I feel very close to the people who consume like I do
	Consuming as most people consume is a good choice for me
	I think it is safe to consume things as other people in general consume
	I see consumption the same way that other people in my personal contacts see it
	I make consumption choices like people in general do
FACTOR 2 - Solidarity and consumer cooperation	I find it cool to observe what people in general consume
	I have friends I like a lot who help me solve my consumer doubts
	I have people I love and consider important to help me with what I should consume
	In my consumption choices the people in my network can help me
	In my social groups I have people I like who help me in my consumption choices
	Observing how acquaintances consume is something interesting
	To consume, the people in my network collaborate with each other
	To consume I observe how other people I have some contact with consume
	To decide about consumption, I can count on people I admire within my conviviality
	Thinking about each other's good consumption choices is common among my contacts
	When it comes to consumption, I have loved ones I can trust to make my choices
FACTOR 3 - Language and shared values	I often interact with people who consume like I do
	People who consume like me have a very similar jargon
	I share the worldview of people who consume like I do
	I maintain close relationships with people who consume like I do
	I identify myself with people who consume like I do
	I spend some time interacting with people who consume like I do
	I have a view on consumption similar to the view on consumption of people in my circle of contacts
	I approach people who have a similar view of consumption as I do
	I communicate frequently with people who consume like I do
	My language is very similar to the language of people who consume like me
	My way of expressing myself is similar to that of people who consume like me
	My network has a similar view of consumption among them
	My consumption choices reflect a vision similar to that of the people I know
	The communication pattern among people who consume like me is very similar
	People who consume like me act reciprocally when necessary
	When I consume I usually interact with people who consume like me
	I am proud to belong to the group of people who consume like I do

	I have a sense of belonging to the group of people who consume like I do
	I have values similar to the values of people who consume like me
Intention to purchase sustainable products	I am very likely to buy sustainable products
	If I were to buy sustainable products I would buy it for the price shown
	The likelihood that I would consider buying sustainable products is high
	My desire to buy sustainable products is great
	If your are going to buy sustainable products the chance of actually buying them is great
	I would buy sustainable products
Brand community participation	I would participate in a brand community about the brand I like
	Increasing the strength of my connection with a brand I like would make me want to participate in a community of this brand
	Participating in the community of a brand I like would make me feel more connected to it
	Participating in the community of a brand I like would make me feel more connected to other consumers of this brand
	I usually accomplish what I set out to do
	I have a positive attitude about myself
	When I make plans I am almost certain that they will work out
Self-efficacy-self-esteem	I am generally confident about the decisions I make
	I am often able to overcome barriers
	I feel that I am a person of value, at least when compared to others
	I see myself as a capable person
	I am able to do things as well as most other people
	I feel that I have a lot of good qualities