Development and validation of a scale for identifying User Innovators

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Abstract:

INTRODUCCIÓN / OBJETIVOS: Existing research have demonstrated that user innovators can play a significant role in innovation and are a valuable source of ideas. This paper aims to offer a reliable and valid scale to identify user innovators. Therefore, this study represents a significant input for managers and public policy in the identification of user innovators. Due to its cross-industrial approach, simplicity and practicality, this cross-market scale constitutes of a valuable measurement instrument that can be applied to regions with a varied level of development in order to identify user innovators. The instrument has surpassed a rigorous validity process and it have been tested in a sample of adult consumers in Bogotá, Colombia. Both an exploratory factor analysis (EFA) and a confirmatory factor analysis (CFA) were performed. The final scale includes twelve variables fit and represented in three constructs: User leadership, curiosity and creativity, and time and skills to develop products. The instrument is in accordance with previous studies and counts with theoretical support.

REVISIÓN DE LITERATURA: Baldwin & von Hippel (2011) defined a user innovator as a single firm or individual that creates an innovation in order to use it. Flowers and Henwood (2010) observed a gap in the correct identification of innovative users. Mujika-Alberdi et al., (2015) pointed out the need to apply cross- industry scales in order to identify user innovators in emerging markets. Mujika-Alberdi et al., (2015) also mentioned the need to conduct psychometric contrasts applying confirmatory analysis to different communities and regions with varied levels of development. Consequently, this research offers a validation scale to identify user innovators in Colombia.

METODOLOGÍA – AGENDA: This study has a cross-sectional quantitative design with a descriptive scope. To ensure the validity of this study, the author followed suggestions from Churchill (1979), Gerbing and Anderson (1988), and Moscoso, Gil, & Rodríguez (2000). A measurement scale was administered to identify user innovators using a non-representative sample of older adults older than 18 years. 518 questionnaires, of which 433 were valid, with a response rate of 83.5% were received. A database that systematizes all the information was created and the data was analyzed through SPSS 23.

The validation process started with adapting the instrument to a new cultural context, in this case, Colombian context. Subsequently, a prototype of the scale was achieved. A pilot test was necessary to prove the instrument, ensure an understanding of the question and enhanced clarity. Afterwards, the first sample data set was obtained; a purification process was utilized by applying an Exploratory Factor Analysis (EFA). Consequently, the instrument was applied to a second sample data set. In this step, the authors performed a data validation process, apply an EFA, ensured internal consistency of the scale, and apply a Confirmatory Factor Analysis (CFA) to confirm unidimensionality, reliability, convergent and discriminant validity.

RESULTADOS Y CONTRIBUCIONES: In this study, the reader can examine the validation process of a measurement scale to identify users, following the methodological steps to ensure rigourosity, reliability, and validity. This article describes the validation process of the scale, which includes definition of the instrument to identify user innovators, the application of a pilot test or prototype scale, the application of the final scale, exploratory and confirmatory factor analysis (CFA), correlation matrix per dimension after CFA, and sample and data collection.

The test of the first order implies twelve variables were fit and represented in three constructs: User leadership, curiosity and creativity, and time and skills to develop products. Consequently, the instrument is in accordance with previous studies and counts with theoretical support. Quantitative analysis exhibits high correlations among those three dimensions.

Both an exploratory factor analysis and a confirmatory factor analysis were performed. Internal consistency of the scale, unidimensionality, reliability, convergent and discriminant validity were confirmed. A confirmatory factor analysis was carried out to achieve a valid model of good fit for the data obtained.

IMPLICACIONES Y VALOR: This research performed a rigorous validation process of a measurement instrument and found existence of user innovators in Colombia. This scale has also been successfully tested and validated in a European region called Gipuzkoa and now in Bogotá, Colombia. Given the scarse literarature about user innovator in emerging countries, particularly, in Colombia, this study

provided a measurement scale to identify user innovators. It offers public policy a better understanding of innovator consumers. The scale surpasses a rigorous validity process and facilitates the correct identification of those type of users. Therefore, this paper represents a significant input for managers in the identification of user innovators who can assist in co-creacion, new product development or new service development processes.

Due to its cross-industrial approach, simplicity and practicality, this cross-market scale constitutes of a valuable measurement instrument that can be applied to regions with a varied level of development in order to identify user innovators. Consequently, this research can serve as a guidance for further research.

PALABRAS CLAVE: Instrument validation, user innovation, user innovators, innovation by users, validity