

RESEARCH ARTICLE

# Creativity, Innovation, and Sustainability: Insights of Entrepinays in the Handicrafts Industry

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**Abstract:** This study analyzed the insights of Filipina entrepreneurs in the handicrafts industry on creativity and sustainability as they relate to innovation. Specifically, the responses of the EntrePinays in Luzon, Visayas, and Mindanao pertaining to factors affecting their innovation activities; the degree of implementation of innovation activities; factors hampering innovation activities; and the effects/impact of innovation on sustainability and other outcomes were compared. The study utilized the conceptual framework on creativity and entrepreneurship by Matthews (2007) and the innovation measurement framework of the OECD/Eurostat (2005). Two hundred three Filipina entrepreneurs in the handicrafts industry from Luzon, Visayas, and Mindanao were interviewed using the adapted survey instrument from OECD/Eurostat (2005). Results indicate that on a national scale, only creativity and laws and regulations significantly influence product innovations. Moreover, the influence of creativity is twice as much as that of laws and regulations. Likewise, it was found that only the institutional factor (incentive program for innovations) significantly influences process innovations. Among the innovation activities, product and marketing innovation activities have the highest level of implementation. Organizational innovations activities, on the other hand, are the least implemented. There are no significant differences in the degree of implementation of innovation activities among Luzon, Visayas, and Mindanao Entrepinays. Only product and organizational innovations affect sustainability. Thus, the study recommends that more training programs be offered, both by the government and private sectors, as well as the academe, to enhance entrepreneurs' creativity; and for the government to ensure that laws and regulations affecting entrepreneurs' efforts to undertake product innovation will protect and foster such initiatives for creative outcomes.

**Keywords:** creativity, innovation, sustainability, entrepreneurship, handicraft industry, women entrepreneur

**JEL Classifications:** L21, L22, L23, L25, L26

***“Successful entrepreneurs innovate to create new values and make a different contribution.”***  
(Drucker, 1985)

Entrepreneurship is the act of innovating so as to enable resources to generate value. It is sustained by creativity. Through practiced creativity, the entrepreneur sees and leverages opportunities. A decision-making logic is applied as an important antecedent of practiced creativity and innovation may likely ensue from the individual entrepreneurial decision-making (Blauth, Mauer, & Brettel, 2014).

In the process of innovating through new combinations causing discontinuity, a value is generated. Significant value is created necessary for the proper functioning of the economic system (Bruyat & Julien, 2000). New combinations can take the form of anything new in usually five areas, namely: product, production method, market, supplier, and industry structure (Bull & Willard, 1993).

In the Philippines, the handicrafts industry contributes about US\$71.9M to foreign exchange earnings as of the year 2000 and employs more than one million Filipinos. Philippine handicrafts have evolved through innovative changes in designs over the years, reinforced by exciting choices and combination of indigenous materials. Data show that the Philippines is the second largest world producer of handicrafts, mainly baskets made from indigenous materials. It has also maintained the respect of the high-end markets in the United States, European Union, and Japan (Beth811, 2015).

However, there is still plenty of room for improvement, particularly in remote upland communities with little access to market information, brokering services, capital, and technologies to add value to their products (Beth811, 2015). Improvement is the key to many companies' success and may be attributed to the continuous search for ways to improve a product or services in gaining competitive advantage from competitors and satisfy consumers (Heyne, Boettke, & Prychitko, 2010).

Improvements are achieved through creativity and innovations. Creativity is the “production of novel and useful ideas by an individual or a small group of individuals working together” (Amabile, 1988, p. 126). Innovation, on the other hand, is the process of conceptualizing and implementing new and improved

ways of product/service design and delivery, including the product itself, process, and method (Alsaaty, 2011).

Moreover, the kind of entrepreneurship that is practiced should be sustainable. Sustainable entrepreneurship is defined as the foundation in the realization of sustainability innovations geared towards a larger market and providing benefit to society as a whole (Schaltegger & Wagner, 2011). Sustainability and sustainable development had become public mantra (Bello, 2000, as cited in Baharin & Sentosa, 2012) and when applied to business, can be understood as “meeting the needs of a firm’s direct and indirect stakeholders (such as shareholders, employees, clients, pressure groups, communities, etc.) without compromising its ability to meet the needs of future stakeholders as well” (Dyllick & Hockerts, 2002, p. 131). It further means integrating the economic, ecological, and social capital of the firm in a triple-bottom line (Dyllick & Hockerts, 2002).

Saddled by problems such as dwindling supply of raw materials and seasonality of demands (Decena, 1991), Filipino artisans have constantly been producing new designs for their products to overcome these problems. Innovation, as in this case, can be perceived as the “tangibilisation of creativity” (Fillis & Rentschler, 2010, p. 66). It is the manifestation or concretization of the novel, different, or unique ideas. Creativity is something you think of, while innovation is something you implement and eventually involves application. While the linkage between creativity and innovation exists (Edwards-Schachter, Garcia-Granero, Sanchez-Barrioluengo, Quesada-Pineda, & Amara, 2015) and the nexus is often cited in many literatures, it has varying findings, which range from highly correlated, moderate, or negligible relationship.

It has also become incumbent for businesses to look for novel ways to align innovation with public expectations and seriously offer a management framework that is based on discoursing, deciding, and then producing sustainable value. Dominant enterprises have comprehended that this hinges upon the understanding of the unfolding nature of society and rethinking the relationships they want to establish with

stakeholders like customers, suppliers, governments, and with the public at large (Dearing, 2000).

Presently, the handicrafts industry has large-scale involvement of women, the under-privileged section of society and minorities, and the out-of-school youths, among others. Women entrepreneurs, in particular, make a substantial contribution to national economies, through their participation in start-ups and their growth in the informal sector, in achieving sustainable and competitive growth of businesses (United Nations, 2006). In the Philippines, women constitute more than half of the population of the 100 million people and have a very significant role to play in the socio-cultural and economic spheres of society.

Entrepinays are represented by Filipina entrepreneurs who are engaged in either micro, small, or medium enterprises. Literature has shown though that Filipina women entrepreneurs are now more empowered, resilient, competent, and given more support by the government, which can lead to the increase in their influence in shaping our society and the economy. The Filipina entrepreneurs, in another study, “rated high on innovation strategy as manifested in their vision, commitment to innovation and leadership, while their efforts to motivate their people, propensity to take risks and efforts to make the organization an attractive place to work on, points to the value they put on organization and culture” (Caning & Edralin, 2016, p. 228).

Thus, it is worthwhile to look into the insights of Entrepinays in the handicrafts industry with regard to creativity, innovation, and sustainability.

## Statement of the Problem

We pose this research query: What are the insights of Filipina entrepreneurs in the handicrafts industry on creativity and sustainability as they relate to innovation?

## Objectives

Specifically, we aim to:

1. Determine the extent of influence of creativity compared to other factors affecting innovation activities;

2. Analyze the degree of implementation of innovation activities related to the product, process, marketing, and organizational aspects;
3. Identify the extent of influence of the different factors hampering innovation activities;
4. Determine whether the various innovation activities have an effect/impact on sustainability and other outcomes; and
5. Analyze if there are significant differences in the insights among the Entrepinays in Luzon, Visayas, and Mindanao pertaining to: (a) factors affecting their innovation activities; (b) degree of implementation of innovation activities per type of innovation; (c) factors hampering innovation activities; and (d) the effects or impact of innovation on various outcomes.

## Significance of the Study

Our paper advances the research on creativity, innovation, and sustainability. In so doing, the alignment among them can be better established in a management framework that can help business and society rethink the dynamics of their relationships with one another.

## Scope and Limitations

Our study is limited to select Entrepinays in Luzon, Visayas, and Mindanao. The results are not aimed at making generalizations but only serve to provide preliminary insights.

## Review of Related Literature

According to Nowduri (2012), entrepreneurship consists of putting up a new business and transforming innovations into economic goods in the process. Through venture creation, entrepreneurs create new value necessary for the economic system to function properly (Bruyat & Julien, 2000). The entrepreneur creates value by carrying out new combinations in the areas of product, production method, market, supplier, and industry structure (Bull & Willard, 1993).

Innovation is the process of conceptualizing and implementing new and improved ways of product/service design and delivery, including the product itself, process, and method (Alsaaty, 2011). It is the entrepreneurs’ specific means by which they exploit change as an opportunity for a different business or service (Drucker, 1985). Likewise, it is the creation of new knowledge and ideas to facilitate new business outcomes geared at improving internal business processes and structures, and to form market-driven products and services (Plessis, 2007, as cited in Ariss & Deilami, 2012). It is a complex phenomenon and a practical discipline that generates new ideas.

Innovations can be classified into four: product, process, marketing, and organization. Product innovations pertain to changes in the product or service offerings. Process innovations refer to changes in delivery or production methods. Marketing innovations deal with new ways to reach the customer and innovations related to the organization usually involves organizational methods. Organizational innovations refer to a new method of business practice, workplace organization, or external relations that are different from others in enhancing the business. (OECD/Eurostat, 2005, as cited in Alsaaty, 2011, p. 7).

The linkage between creativity and innovation exists (Edwards-Schachter et al., 2015). This nexus is often cited in many pieces of literature but with

varying findings, which range from highly correlated, moderate, or negligible relationship. In today’s global business environment, most firms rely on the close link between creativity and innovations for reasons such as profitability, competitiveness, and sustainable entrepreneurship.

Amabile (1983) pointed out that creativity is a skill set that is integral to the process of innovation. Hence, innovation is the result of the creative beginnings of a thought. Innovation occurs when one tries to conceive new ideas, by tapping one’s inner thoughts to offer a new stream of ideas that serve as a catalyst in a relatively different context not thought of before (Amabile, 1983).

### Conceptual Framework

According to Matthews (2007), “creativity and entrepreneurship, like innovation, have been recognized as important contributors to a nation’s economic growth” (p. 2). While creativity is focused on the creation of novelty and value, entrepreneurship, on the other hand, is concerned with novelty in business, new business ideas, and the reality of achieving positive returns in the market and in existing and new business models. Notably, creativity and entrepreneurship have gone in the same path in terms of their focus on the

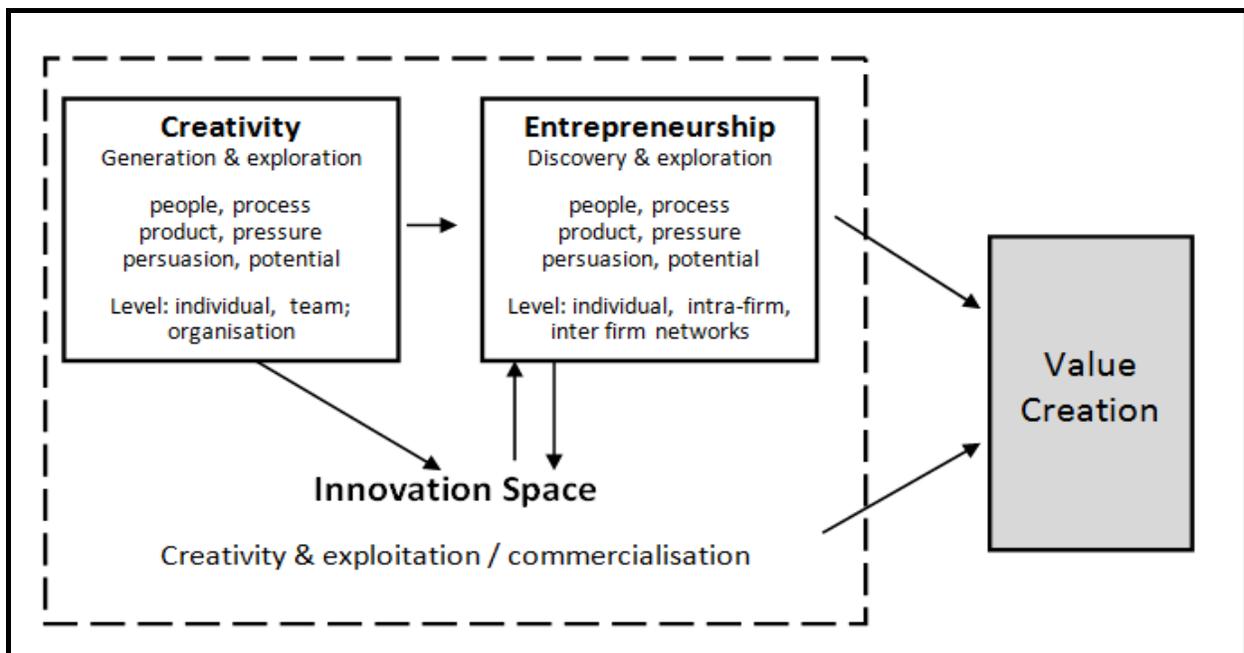


Figure 1. Relationship of creativity, entrepreneurship, and innovation. Adapted from Matthews (2007).

person and the process which produces novelty and value in both (Matthews, 2007).

From an entrepreneurial perspective, creativity can be understood as the realized opportunity to apply creative skills on the job (DiLiello & Houghton, 2008). This is referred to as practiced creativity. This is the ability of the individual to see and leverage creative opportunities which can be considered as a vital requirement for employees in new product development. The decision-making logic is an important antecedent of practiced creativity, and the individual entrepreneurial decision-making can lead to innovation (Blauth et al., 2014).

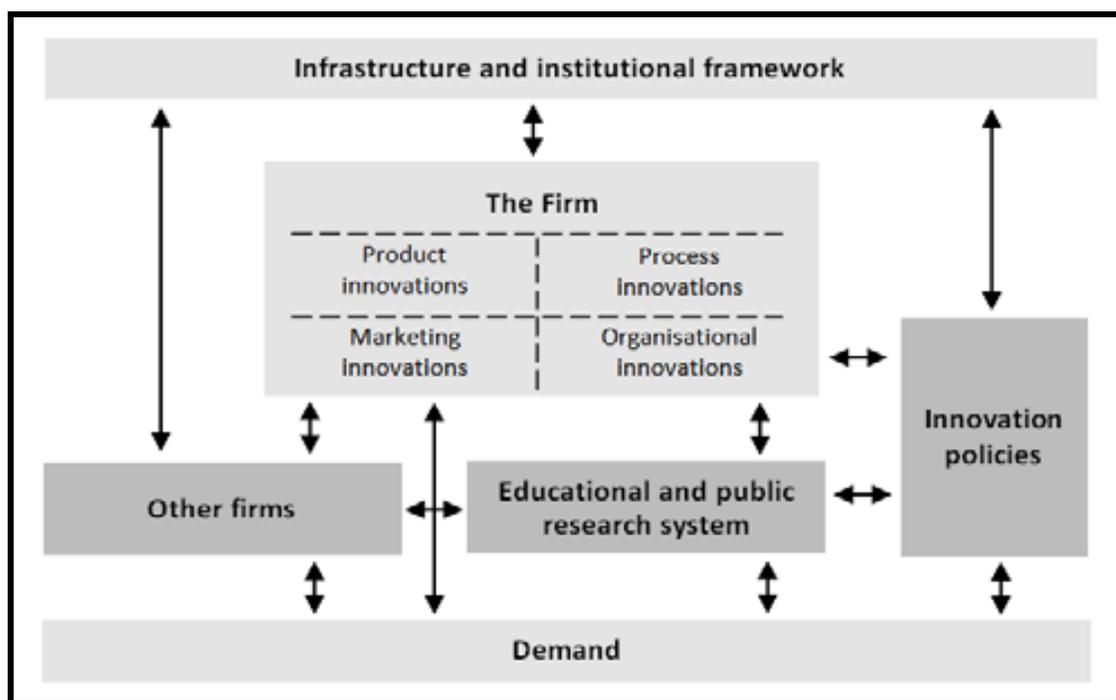
Moreover, creativity is influenced by external and internal factors which emanate from the environment and individual characteristics (Blauth et al., 2014). The qualities of environments that promote creativity are freedom, good project management, sufficient resources, encouragement, different organizational characteristics, recognition, sufficient time, challenge, and pressure (Amabile, 1988). One of the beneficial individual characteristics is creative skills.

Creative skills depict the individual approach to risk propensity, the attitude to engage with uncertainty, the tolerance for frustration, and the desire for independence and self-discipline (Chen & Kaufmann,

2008; Amabile, 2013). Other sources of creativity in entrepreneurship can be access to information, access to technology, experience, family background, access to training, and networks/linkages.

As the previous research has concordantly established that extrinsic rewards given independently actually weaken the creative process (by reducing intrinsic motivation), it appears that many firms may be inadvertently hindering their creative efforts. However, the incentive programs (as an extrinsic motivation) in the form of monetary rewards can be made to have more positive results if offered in convergence with appropriate training. The training alters the impact of the reward, such that it reinforces, rather than weakens, intrinsic motivation (Burroughs, Dahl, Moreau, Chattopadhyay, & Gorn, 2011). Therefore, managers and entrepreneurs can enhance the effectiveness of their creative efforts by leveraging the utilization of incentives and training in fusion.

Figure 1 implies that more detailed studies of the entrepreneurship process, particularly at the nascent entrepreneurship stage, may identify multiple creative thinking processes that inform the initiation and development of the new enterprise, as well as its business model, customer relationship, and evolution over time (Matthews, 2007).



*Figure 2.* The innovation measurement framework. Adapted from OECD/Eurostat (2005).

The OSLO Manual (OECD/Eurostat, 2005) for measuring innovation specified that enterprises could engage in innovation for a number of reasons, such as products, markets, efficiency, quality, or the ability to learn and to implement changes. It spelled out that innovation activities can be hampered by a number of factors such as economic factors, for example, high costs or lack of demand; factors specific to an enterprise, like lack of skilled personnel or knowledge; and legal factors, such as regulations or tax rules. Moreover, the Manual indicated that the impacts of innovations on firm performance range, from effects on sales and market share to changes in productivity and efficiency. The important impacts at industry and national levels are changes in international competitiveness and in total factor productivity, knowledge spillovers from firm-level innovations, and an increase in the amount of knowledge flowing through networks.

Figure 2 depicts the framework from the perspective of the firm. The model represents an integration of insights from various firm-based theories of innovation, with those approaches that view innovation as a system. The main characteristics of the above framework are: (1) innovation in the firm; (2) linkages with other firms and public research institutions; (3) the institutional framework in which firms operate; and (4) the role of demand. The OSLO Manual emphasized, among other things, “the driving forces behind innovation, the importance not only of products and processes, but also of marketing and organisational practices the role of linkages and diffusion and the view of innovation as a system” (OECD/Eurostat, 2005, p. 33).

Innovation leads to the creation and diffusion of new knowledge which increases the economy’s potential to develop new products and more productive methods of operation. The improvements do not rely solely on technological knowledge, but also on other forms of knowledge that are utilized to develop a product, process, marketing, and organizational innovations. Particular types of innovation can significantly vary in their impact on firm performance and economic change. Given this condition, it is imperative to be able to identify the implementation and impacts of different types of innovation (OECD/Eurostat, 2005).

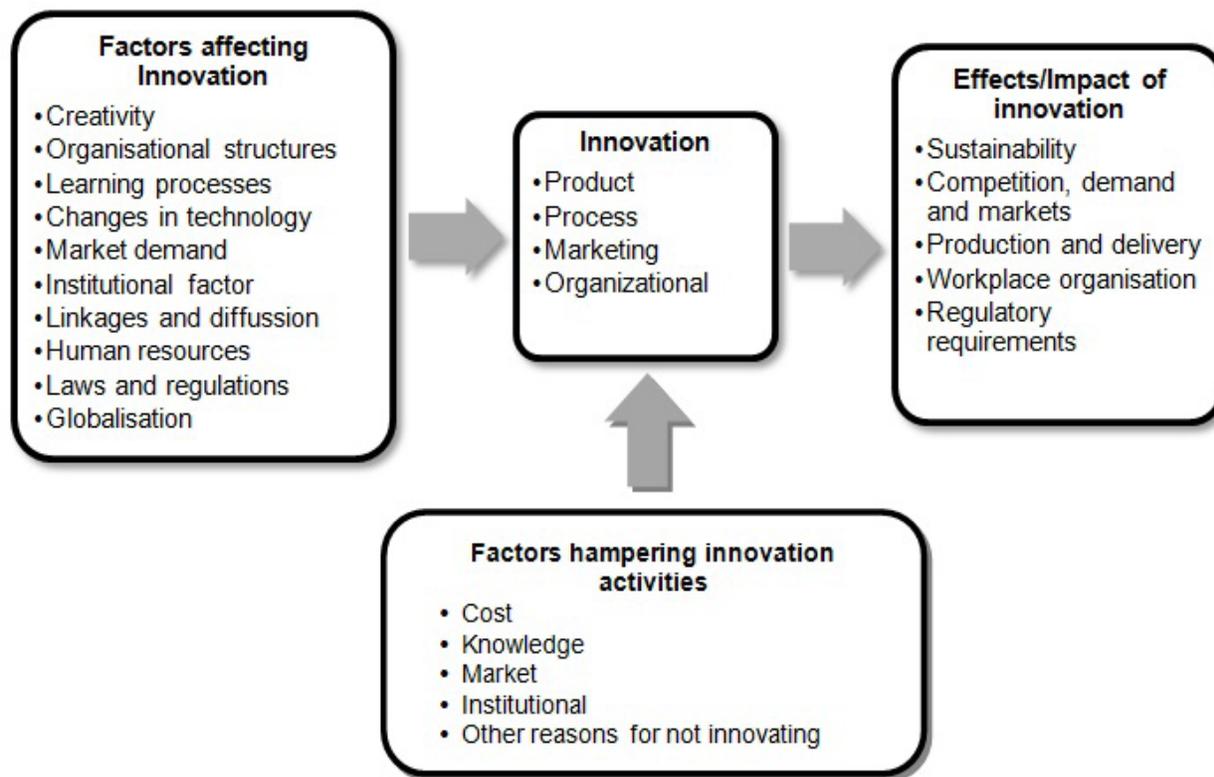
Creation of new markets, products, and demand emanate from sustainable development practices. Sustainable development practices drive new business models that are heavy on innovation and light on the cost structures. Enterprise sustainability is now

the backbone of any business, and the early movers towards sustainable business practice will definitely enjoy unparalleled advantages against competitors. Businesses that ignore the sustainability agenda will definitely lose out in terms of profitability and market share, and worse, might even risk losing monetary wealth and reputation (Baharin & Sentosa, 2012).

## Operational Framework

Figure 3 presents our operational framework. It indicates the factors affecting innovation, such as creativity, organizational structures, learning processes, changes in technology, among others. We also considered that there are four types of innovations that encompass a wide range of changes in firms’ activities, namely: (1) product innovations, (2) process innovations, (3) organizational innovations, and (4) marketing innovations. Product innovations refer to a new idea or service being introduced to the market in order to meet customer needs that are market-oriented and primarily customer driven. Process innovations pertain to a systematic attempt for intra-change company production and services with an emphasis on efficiency. Organizational innovations refer to a new method of business practice, workplace organization, or external relations that are different from others in enhancing the business. Marketing innovations involve the provision of a better product design or packaging, product placement, or promotional or pricing methods that significantly differ from others. We considered that innovation activities can be hampered by a number of factors, such as economic factors, for example, high costs or lack of demand; factors specific to an enterprise, like lack of skilled personnel or knowledge; and legal factors, such as regulations or tax rules. There are also effects or impact of innovation activities on the organization, such as sustainability, competition, demand, and markets among other outcomes.

In this research, we hypothesized that creativity has the most significant influence affecting innovation activities compared to other factors. We also posited that all innovation activities have an effect/impact on sustainability. We further hypothesized that there are no significant differences in the degree of implementation of innovation activities per type of innovation activities among Luzon, Visayas, and Mindanao handicrafts businesses.



*Figure 3.* Operational framework of the study.

## Methodology

We utilized the descriptive, comparative, and causal research designs in this cross-sectional empirical study. There were 203 sample Filipina entrepreneurs in the handicrafts industry from Luzon ( $n=50$ ), Visayas ( $n=53$ ), and Mindanao ( $n=100$ ) who agreed to participate. Two-thirds of the respondents were college graduates and the rest were, at most, high school graduates. About 91% of the respondents were at least 30 years old, and they have been operating their business for an average of 14 years as the sole proprietor. We interviewed them using the survey instrument adapted from the OECD/Eurostat (2005) survey instrument. We pre-tested and translated in Filipino the 63 questions with a 5-point Likert scale as the basis of the response and established the scales' internal reliability per construct. The Cronbach coefficient alpha result for each construct is as follows: (1) product innovation = .825; (2) process innovation = .744; (3) organisational innovation = .758; (4) marketing innovation = .666; (5) creativity = .820; (5)

other factors affecting innovating activities = .864; (6) sustainability = .746; and (7) other effects/impacts of innovation = .922.

We employed descriptive statistics (such as percentage, mean, and standard deviation) and inferential statistics (particularly, ANOVA and regression) as analytical tools to determine the patterns, causal relationships, and variations of insights of the Entrepinays on the variables under study. Qualitative responses from the Entrepinays were also included in the discussion to substantiate the quantitative results.

We wrote a letter to each of our research participants explaining the objectives and significance of the current study, as well as secured their verbal consents. Before the actual conduct of the interview, the researcher emphasized that their responses will be treated with utmost confidentiality, and that at any point in the course of the interview, they can opt not to continue if they are no longer interested to answer the research questions.

## Results and Discussion

### *Influence of Creativity Compared to Other Factors Affecting Innovation Activities*

**Product innovation.** Product innovations done by the Entrepinays are those that involved the introduction of new, improvement, or variations in the handicrafts to the market in order to meet customer needs. This implies that individual inherent creative talent plays a dominant role in, and is used to leverage for, effective product innovations in handicrafts sold in the local and international markets. It is the creative rareness that makes these handicrafts very attractive, especially in the U.S.A. and European Union countries. There is a need for continuous innovation so that Entrepinays are not left behind.

As one Entrepinay shared, “when I want to make a new design, and I come across an idea from research, I just say to myself, I think I can make that...and then I make it.” The creativity of the Filipina entrepreneur, such as their approach to risk, how they deal with uncertainty, and their tolerance for ambiguity, help them to come up with new or unique products. As a consequence, it is imperative to continuously reinforce their creativity to be successful in the future. A supportive entrepreneurial environment, like having laws and regulations that offer both incentive and training programs to motivate these entrepreneurs to become more creative, will foster product innovations.

Indeed, results revealed that on a nationwide level, only creativity and laws and regulations significantly influence product innovations. The influence of creativity is double that of laws and regulations. On a per island group basis, creativity is the most significant predictor of product innovation in Luzon, no significant predictor for Visayas, while laws and regulations are the most meaningful determinant for Mindanao.

**Process innovations.** Process innovations done by the Entrepinays pertain to their systematic attempts for intra-change enterprise production, like new production methods, introducing new methods of delivery or distribution, introducing new ways of operating in areas such as purchasing and accounting, and basing their processes on existing processes from other enterprises with emphasis on efficiency.

On a national scale, only the institutional factor (incentive program for innovations) significantly influences process innovations. On an island group basis, not any of the factors significantly affect process

innovations in Luzon and Visayas, while incentive programs for innovation meaningfully affect process innovations in Mindanao.

This means that such efforts on improvements on production methods of operation and delivery depend not so much on technological knowledge, but more on incentive programs for innovations provided at the institutional level or by the government. Incentive programs come in the form of subsidized training, opportunity to participate in trade fairs, and provision for administrative assistance to manage the business. As one Entrepinay expressed - “I started in trade fairs organized by the Department of Trade and Industry, wherein most of the buyers were balikbayans and foreigners. I realized that my product is special because it does not use any sort of machinery as it is completely handmade.” Therefore, it is essential to develop the capacity to innovate the process by providing more government incentives, through the Departments of Trade, Tourism, and Science and Technology programs, that can cover reduced fees and taxes, facilitation of securing patent/copyright, financial assistance to support the full utilization of the new method/process that was developed, and giving a chance to meet other fashion designers/creative people who can teach the innovative processes.

**Organizational innovations.** Organizational innovation done by the Entrepinays refers to their new method of business practice, workplace organization, or external relations that are different from others in enhancing the business. As one Entrepinay revealed, “I was able to secure a trademark for my recycled paper beads for the period 2014–2024 since I studied the government requirements and asked help from other people I know in the industry.”

On a national scale, organizational structures, linkages, laws and regulations, and globalization significantly influence organizational innovations to a uniform extent. However, the influence of globalization is negative. On an island group basis, linkages significantly influence organizational innovations in Luzon, no factor significantly affect organizational innovations in the Visayas, while knowledge of government regulations meaningfully determine organizational innovations in Mindanao.

It seems obvious that to be able to come up with something novel in one’s organization, the Entrepinays find it necessary to benchmark from other firms’ business practices, and establish linkages (like

Table 1. Influence of Creativity and Other Factors to Innovation

Independent Variables	Product Innovation			Process Innovation			Organizational Innovation			Marketing Innovation						
	Nt'l	Lzn	Vis	Min	Nt'l	Lzn	Vis	Min	Nt'l	Lzn	Vis	Min				
Location																
	t-stat	3.41	2.94	1.68	1.52	.40	-.23	.87	-1.75	.07	-1.30	-.52	1.95	1.33	1.68	1.94
Creativity	p-value	.00	.01	.10	.13	.69	.82	.39	.08	.95	.20	.61	.05	.19	.87	.06
	Influence	W	W	N	N	N	N	N	N	N	N	N	N	N	N	N
Organizational Structures	t-stat	-.91	.34	-.18	-.75	1.57	.84	.98	2.82	2.23	2.00	1.01	2.50	2.23	1.01	1.59
	p-value	.36	.74	.86	.46	.12	.40	.33	.01	.03	.05	.32	.01	.03	.32	.12
	Influence	N	N	N	N	N	N	N	W	W	N	N	W	W	N	N
Learning Process	t-stat	-.52	-1.37	-.87	1.11	-.24	-1.10	.29	.17	-.01	-1.08	.82	-.59	-.83	-1.06	.36
	p-value	.61	.18	.39	.27	.81	.55	.77	.87	.99	.27	.41	.56	.41	.30	.72
	Influence	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Changes in Technology	t-stat	-1.38	-.71	.63	-1.69	.57	-1.08	1.93	.07	.65	1.63	-1.74	.12	.13	2.95	-2.14
	p-value	.17	.48	.53	.10	.57	.27	.06	.72	.52	.11	.09	.90	.90	.01	.04
	Influence	N	N	N	N	N	N	N	N	N	N	N	N	N	W	W
Market Demand	t-stat	1.89	1.29	.78	.55	-.61	-.81	-.91	1.75	-.30	1.52	.78	.70	1.46	.11	-.04
	p-value	.06	.21	.44	.58	.54	.42	.37	.08	.77	.14	.44	.48	.15	.91	.97
	Influence	N	N	N	N	N	N	N	N	N	N	No	N	N	N	N
Institutional Factor	t-stat	.24	-1.0	-1.41	1.54	2.82	.64	1.37	1.30	1.05	1.05	.82	3.08	.72	1.02	2.76
	p-value	.81	.92	.17	.13	.01	.53	.18	.20	.30	.30	.41	.00	.48	.31	.01
	Influence	N	N	N	N	W	N	N	N	N	N	N	W	N	N	W
Linkages and Diffusion	t-stat	-.19	.93	.37	-1.17	2.24	1.0	1.08	2.26	.59	.69	1.72	.42	.15	1.5	-.75
	p-value	.85	.36	.72	.25	.03	.32	.29	.03	.56	.50	.09	.67	.88	.13	.45
	Influence	N	N	N	N	W	N	N	W	N	N	N	N	N	N	N
Human Resources	t-stat	.98	.83	.43	.48	-.07	1.76	-.77	1.67	.63	.58	1.06	.49	1.97	-1.01	-.01
	p-value	.33	.41	.67	.64	.95	.09	.45	.09	.53	.57	.29	.62	.06	.32	.99
	Influence	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Laws and Regulations	t-stat	2.94	.22	1.67	2.57	1.97	-.46	1.23	3.11	.96	1.91	2.07	1.55	-.19	1.61	1.35
	p-value	.00	.83	.10	.01	.05	.65	.23	.00	.34	.06	.04	.12	.85	.11	.18
	Influence	W	N	N	W	W	N	N	W	N	N	W	N	N	N	N
Globalization	t-stat	1.61	.43	.65	.50	1.48	1.23	1.43	-.72	-.76	-1.17	-.37	.68	-.40	1.10	.61
	p-value	.11	.67	.52	.62	.14	.23	.16	.01	.45	.25	.72	.50	.69	.28	.54
	Influence	N	N	N	N	N	N	N	W	N	N	N	N	N	N	N

Legend: W- with influence; N- no influence; Nt 'l-National; Lzn-Luzon; Vis-Visayas; Min-Mindanao

membership in their industry association or having a formal partnership with the academe or other agencies supporting the industry) to keep updated on new trends that they can adopt, with some tweaking to suit their enterprise needs, as well as knowing well the laws and regulations that will dictate their workplace arrangements, protect their product/s from being copied, and help sell their products to a bigger and reliable market.

The influence of globalization is negative maybe because the trade liberalization, tax incentives, as well as labor and market flexibilities that come with it have made the competition stiffer, for instance, the presence of imported handicraft products in the local market which mainly come from China. This may have prompted the Entrepinays in the handicrafts industry to organizationally innovate to sustain their businesses and help employ many poor Filipinos.

**Marketing innovations.** Marketing innovations done by the Entrepinays are those that involve the provision of a better product design or packaging, product placement, or promotional or pricing methods that significantly differ from others. Some of them have been improving distribution channels via licensing, franchising, and direct selling, as well as improving the quality of the product through product testing, customer response survey, and other types of market research. As one Entrepinay cited, “exposure in trade fairs and in major malls is what really helps my business.” As marketing people will say, “there is no revenue for the firm unless they promote and sell the products and convince customers to buy them repeatedly.”

On a nationwide scale, creativity, organizational structure, and institutional factors (incentive program for innovations) significantly influence marketing innovations. The institutional factor exerts the most influence, followed by creativity and organizational structure, respectively. On an island group basis, linkages significantly influence marketing innovations in Luzon; acquisition of new machinery, equipment, and software significantly determine marketing innovations in the Visayas; while incentive programs for innovation and acquisition of new machinery, equipment, and software are the meaningful predictors of marketing innovations in Mindanao.

Again, the results showed the vital influence of creativity and incentive programs for innovations to happen is highlighted. Rethinking of new ways on how and where to sell the products when there

is stiff competition in the present market calls for creativity to be able to market such products. There has to be a systematic market innovation that should occur. This involves the meaningful and organized search for changes, and the systematic analysis of the opportunities where such changes give economic or social innovation (Drucker, 1985).

#### ***Degree of Implementation of Innovation Activities Related to the Product, Process, Marketing, and Organizational Aspects***

On a nationwide scale, product and marketing innovation activities have the highest level of implementation, while organizational innovations activities are the least implemented. On an island group basis, there are no significant differences in the degree of implementation of innovation activities among Luzon, Visayas, and Mindanao Entrepinays in the handicrafts industry.

The high concern of the Entrepinays for the implementation of product and marketing innovation activities is not surprising. In a traditional business strategy, the immediate emphasis is to produce quality and competitively-priced products to be sold to as big a market as possible. This is the old partnership of marketing and production to generate revenue for the expected profit. The low level of implementation of organizational innovations activities, compared to product and marketing innovation activities, deserve better attention by the Entrepinays. According to Lawson and Samson (2001), for a firm to be innovative, it needs a proper business structure which should align with the surrounding environment; otherwise, there is a great chance of failure. Such an organizational structure and system need to particularly focus on appropriate organizational structure, motivating reward systems, and “stretch” goals for innovation (Lawson & Samson, 2001). As one Entrepinay expressed, “DTI introduced me to this American woman who taught us how to recycle garbage bags by weaving the material and making them into bags.”

#### ***Influence of the Different Factors Hampering Innovation Activities***

**Product innovation.** On a nationwide level, costs and growth in the market influence product innovation. When costs are manageable and markets are growing, these increase product innovation activities. The

**Table 2.** *Level of Implementation of Innovation Activities*

Innovation Activities		National	Luzon	Visayas	Mindanao
Product Innovation	Mean	3.52	3.56	3.78	3.38
	SD	1.04	.81	.97	1.14
Process Innovation	Mean	2.83	2.94	2.64	2.88
	SD	.97	.84	1.02	1.00
Organizational Innovation	Mean	2.69	2.7	2.50	2.78
	SD	.89	1.05	1.02	.83
Marketing Innovation	Mean	3.19	3.13	3.25	3.2
	SD	.99	.82	1.02	1.06

**Table 3.** *Difference in the Implementation of Innovation in Luzon, Visayas, and Mindanao – ANOVA Results*

INNOVATION	F-Stat	P-value	Difference Among Regions
Product	2.70	.07	None
Process	1.15	.30	None
Organizational	1.49	.23	None
Marketing	.18	.84	None

opposite is true. Thus, unmanageable costs and shrinking markets hamper product innovation. On an island group basis, costs hinder product innovations in Luzon, but no factor hampers product innovations in the Visayas and Mindanao.

As one Entrepinay commented, “Our problem is lack of funds for product innovation...walang pang pondo.” The handicraft industry generally performed satisfactorily in terms of generating foreign exchange, as well as providing employment to thousands of Filipinos. Despite the wide acceptance of handicraft items here and abroad, problems saddle the industry like dwindling supply of raw materials, and seasonality of demands. The government and the private sectors are urged to look into alternatives that will explore the potential/growth of the industry (Decena, 1991).

**Process innovation.** Innovation activities can be hampered by a number of factors, such as economic factors, for example, high costs or lack of demand; factors specific to an enterprise, like lack of skilled personnel or knowledge; and legal factors, such as regulations or tax rules. However, our results showed that none of these factors hamper process innovations, both at the national and island group levels. It means that the Filipina entrepreneurs in the handicrafts industry have not been significantly hindered by

external and internal factors in their process of innovation in their business. This may be attributed to their entrepreneurial skill of adaptability, frugality, and flexibility during hard times, as well as their resiliency to exploit whatever opportunities are available around them. As one Entrepinay said, “Gawa lang ng gawa. Ito ang hanapbuhay ko.”

**Organizational innovation.** On a nationwide level, partnerships and growth in the market influence organizational innovation. When there are more willing partners and the markets are growing, these increase organizational innovation activities. The reverse is true. Thus, lack of willing partners and shrinking markets hamper organizational innovation. On an island group basis, no factor hampers process innovations in Luzon and Visayas, while shrinking markets hamper organizational innovation in Mindanao.

Partnerships involve collaboration and extended networks to avail of the knowledge to support the innovation capability of a firm. As such, collaboration prolongs resources, lessens reliance and investment on their own research and development efforts, as well as helps to widen the Entrepinays’ expertise. This is necessary to the firm because collaboration with customers, competitors, and suppliers can fill the gap in knowledge that the enterprise itself could not fill

Table 4. Factors Hampering Innovation

Dependent Variables	Product Innovation			Process Innovation			Organizational Innovation			Marketing Innovation						
	Nt'l	Lzn	Vis	Min	Vis	Lzn	Nt'l	Min	Vis	Lzn	Nt'l	Min	Vis			
Location	2.13	2.02	1.01	1.25	.98	.02	1.76	1.23	1.08	-1.10	1.68	.08	2.25	-0.80	2.18	1.30
Cost	.04	.05	.32	.21	.33	.99	.08	.22	.28	.28	.10	.93	.03	.43	.03	.20
Influence	W	W	N	N	N	N	N	N	N	N	N	N	W	N	W	N
Knowledge	1.21	.10	.52	.62	1.38	1.14	1.16	.42	-1.53	.82	-1.60	-.05	1.02	1.61	.16	.91
Influence	.23	.92	.61	.54	.18	.26	.25	.67	.13	.42	.12	.96	.31	.12	.88	.36
Influence	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Market	2.63	-.84	1.69	1.58	-.12	1.25	.35	.61	2.34	1.69	1.23	2.56	1.70	1.24	.81	1.32
Influence	.01	.40	.10	.12	.91	.22	.72	.55	.02	.10	.23	.01	.09	.22	.42	.19
Influence	W	N	N	N	N	N	N	N	W	N	N	W	N	N	N	N
Institutional	.53	1.12	-.04	1.03	.16	.18	1.63	1.23	1.97	.13	1.12	.81	2.03	.30	.71	1.34
Influence	.60	.27	.97	.31	.87	.86	.11	.22	.05	.90	.27	.42	.04	.76	.48	.19
Influence	N	N	N	N	N	N	N	N	W	N	N	N	W	N	N	N

Legend: W- with influence; N- no influence; Nt'l-National; Lzn-Luzon; Vis-Visayas; Min-Mindanao

(Saunila, 2014). Extended networks and co-creation enable them to generate creativity that results in innovation (Sheldon, 1995; Füller, Hutter, & Faullant, 2011). As one Entrepinay shared, “I have a business partner in Canada who communicates with me in real time, which really helps my business.”

**Marketing innovations.** On a nationwide level, costs and partnerships influence marketing innovation. When costs are manageable and there are willing partners, these increased marketing innovation activities. As one Entrepinay expressed, “We have joined tradeshows in Megamall and Glorietta for several years now and these events were organized by HABI. From distributing business cards during the trade fairs, we now have more customers.” The converse is true. Thus, unmanageable costs and lack of partnerships hamper marketing innovation. On a per island group basis, no factor hampers marketing innovations in Luzon and Mindanao, while unmanageable costs hinder marketing innovation activities in the Visayas.

#### ***Effect/Impact of Innovation Activities on Sustainability and Other Outcomes***

On a national scale, only product and organizational innovations affect sustainability. On an island group basis, the four types of innovation activities have no effect on sustainability in Luzon and Visayas, while product and organizational innovations have effects on sustainability in Mindanao. As one Entrepinay said, “Before, our ancestors who were into weaving taught

the younger generation. Grabe yung concentration nila spiritually. We inherited a specific pattern, pwedeng ituro sa anak mo. Iba talaga ang pattern na kami lang ang nakakaalam because of our imagination.”

Results also showed on a nationwide scale that only product and marketing innovations have impacts on competition, demand, and markets. On an island group basis, innovation activities have no effect on competition, demand, and markets in Luzon; organizational and marketing innovations have effects on competition, demand, and markets in the Visayas; while product innovations have effects on competition, demand, and markets in Mindanao. As one Entrepinay revealed, “We are already very organized in the sense that we have several Purchase Orders. We have been getting quite a number of assistance from E.U. and U.S.A. I came to the picture with NZ aid. We were taught to organize ourselves. We have different organizations based on our different strengths.”

Moreover, the national level findings indicated that only organizational and marketing innovations have effects on production and delivery. On an island group basis, only marketing innovations have an effect on production and delivery in Luzon and Mindanao, while organizational and marketing innovations have effects on production and delivery in the Visayas.

Lastly, on a national scale, all types of innovation activities, except process innovation, have effects on workplace organization and compliance with regulatory requirements. On an island group basis, innovation activities have no effect on workplace and

**Table 5.** *Effect of Innovation on Sustainability*

<b>Dependent Variable: Sustainability</b>		<b>National</b>	<b>Luzon</b>	<b>Visayas</b>	<b>Mindanao</b>
<b>Independent Variables</b>	Product Innovation	t-stat: 4.17 p-value: .00 WITH EFFECT	t-stat: 1.39 p-value: .17 NO EFFECT	t-stat: .17 p-value: .87 NO EFFECT	t-stat: 2.65 p-value: .01 WITH EFFECT
	Process Innovation	t-stat: -.21 p-value: .83 NO EFFECT	t-stat: 1.81 p-value: .08 NO EFFECT	t-stat: -.15 p-value: .88 NO EFFECT	t-stat: -.68 p-value: .49 NO EFFECT
	Organizational Innovation	t-stat: 2.02 p-value: .04 WITH EFFECT	t-stat: -.32 p-value: .75 NO EFFECT	t-stat: 1.89 p-value: .06 NO EFFECT	t-stat: 2.65 p-value: .01 WITH EFFECT
	Marketing Innovation	t-stat: .50 p-value: .62 NO EFFECT	t-stat: -.28 p-value: .78 NO EFFECT	t-stat: .53 p-value: .60 NO EFFECT	t-stat: .72 p-value: .46 NO EFFECT

compliance with regulatory requirements both in Luzon and Mindanao, while organizational and marketing innovations have effects on workplace organization and compliance with regulatory requirements in the Visayas.

## Conclusion

The insights of the Entrepinays in the handicraft industry on creativity and sustainability, as they relate to innovation, lead us to a number of interesting conclusions.

On a nationwide level, only creativity and laws and regulations significantly influence product innovations. The influence of creativity is double that of laws and regulations. Therefore, it is necessary to give more attention to the efforts that will enhance and nurture the creative talents of Entrepinays. This is where the role of the schools as training grounds to harness creative skills is vital. On the other hand, government institutions should provide support, incentives, as well as easy access to education and financial assistance, to encourage women in the handicraft industry towards creative pursuits that will lead to innovation and sustainable entrepreneurship. It is only the institutional factor (incentive program for innovations) that significantly influences process innovations. Organizational structures, linkages, laws and regulations, and globalization significantly influence organizational innovations to a uniform extent. However, the influence of globalization is negative. This means that the government, through its economic and political safety nets, should be able to temper the negative effects of globalization on process innovation. Moreover, creativity, organizational structure, and institutional factors (incentive programs for innovations) significantly influence marketing innovations. This indicates that for marketing innovations to thrive, the bundle of creativity of the women entrepreneurs, together with a suited organizational structure and incentive programs, should be pursued. Overall, findings were able to answer the objective that creativity has the greatest extent of influence compared to other factors affecting innovation activities.

As an entire group, product and marketing innovation activities have the highest level of implementation, while organizational innovation activities are the least

implemented. There are no significant differences in the degree of implementation of innovation activities among Luzon, Visayas, and Mindanao Entrepinays in the handicrafts industry. In general, results were also able to answer the objective regarding the degree of implementation of innovation activities related to the product, process, marketing, and organizational aspects, where marketing innovation activities proved to be the most implemented.

Unmanageable costs and shrinking markets hamper product innovation. Given this outcome, it is the role of the government to protect the handicraft entrepreneurs from the rising costs of production and stiff competition from big handicraft firms producing handicrafts locally and importing products that are saturating the market at a lower price. No factor hampers process innovations. Likewise, lack of willing partners and shrinking markets hamper organizational innovation, while unmanageable costs and lack of partnerships hamper marketing innovation. These inhibiting factors can be reduced or eliminated through government economic and legal intervention to control costs of production and help the Entrepinays find business partners here and abroad through the Department of Trade and Industry. As a whole, findings were able to answer the objective to identify the extent of influence of the different factors hampering innovation activities, such as unmanageable costs, shrinking markets, and lack of willing partners.

On a national scale, only product and organizational innovations affect sustainability. On an island group basis, the four types of innovation activities have no effect on sustainability in Luzon and the Visayas, while product and organizational innovations have effects on sustainability in Mindanao. Overall, results were able to answer the objective to determine whether the various innovation activities have an effect/impact on sustainability, indicating that only product and organizational innovations affect sustainability.

The nationwide data showed that only product and marketing innovations have impacts on competition, demand, and markets. Only organizational and marketing innovations have effects on production and delivery, while all types of innovation activities, except process innovation, have effects on workplace organization and the regulatory requirement.

Overall, however, findings revealed that there are no significant differences in the insights of the

Entrepreneurs in the handicraft industry on creativity and sustainability, as they relate to innovation,

## Recommendations

We, therefore, recommend that more training and development programs be offered, both by the government and private sectors, as well as the academe, to enhance entrepreneurs' creativity in the new product development process; and for the government to ensure that laws (with the corresponding incentive programs) and regulations affecting entrepreneurs' efforts to undertake product innovation will protect and foster such initiatives for creative outcomes. We need to support the enhancement of individual creativity for continuous innovations to happen in the workplace.

As previous research has concordantly established that extrinsic rewards given independently actually weaken the creative process (by reducing intrinsic motivation), it appears that many firms may be inadvertently hindering their own creative efforts (Burroughs et al., 2011). However, the incentive programs (as an extrinsic motivation), in the form of monetary rewards, can be made to have more positive results if offered in convergence with appropriate training. The training alters the impact of the reward, such that it reinforces, rather than weakens, intrinsic motivation (Burroughs et al., 2011). Entrepreneurs, like the Entrepreneurs in the handicrafts industry, can enhance the effectiveness of their creative efforts by capitalizing on the use of incentives and training in fusion. Creativity will lead to innovation and innovation is image branding.

We further recommend the collaboration of the Philippine Trade and Training Center, the Design Center of the Philippines, the Philippine Chamber of Commerce and Industry, and the schools offering Entrepreneurship courses to design and implement relevant and globally-focused capacity-building programs that will develop creativity, innovation, and sustainability consciousness and passion among women entrepreneurs. This can contribute to achieving a more innovative and sustainable entrepreneurial Philippine culture, particularly in the handicrafts industry.

Lastly, as we investigated through a broad review and analysis of relationships of creativity, innovation, and sustainability constructs from the insights of the

Entrepreneurs in the handicrafts industry, we propose that off-shoot studies be done, with the use of mixed methods, in the other industries in the country. The combined methods of quantitative and qualitative will lend to a deeper understanding of the underlying realities behind the patterns and relationships revealed by the inferential statistics. This means integrating the positivist and critical realism research philosophies in the conduct of similar research to gain a better perspective on the constructs of creativity, innovation, and sustainability investigated together.

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