

MANAGERIAL ARTIFACTS AND INNOVATION: AN INVESTIGATION AT THE GOIANIA HIPPIE FAIR

ARTEFATOS GERENCIAIS E INOVAÇÃO: UMA INVESTIGAÇÃO NA FEIRA HIPPIE DE GOIÂNIA

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ABSTRACT

The Goiania Hippie Fair holds significant historical and cultural heritage value for this Brazilian city, driving the entire productive chain and generating a substantial impact on the local economy. This study aims to investigate whether a positive relationship exists between the use of managerial artifacts and the degree of innovation among vendors at the Goiania Hippie Fair. The research adopts an exploratory approach with a quantitative methodology, utilizing a physical questionnaire administered to the vendors. Descriptive statistics and Pearson correlation analysis were applied to the collected data. The findings reveal a positive relationship between the use of managerial artifacts and the degree of innovation among the fair's vendors, identifying them as second-order factors. Additionally, the study shows that increasing the use of first-order factors – heritage and results artifacts and platform innovation – would trigger the adoption of several other factors by the vendors. Furthermore, the research examines the characterization of the vendors at the Goiania Hippie Fair and describes their main managerial and innovative practices. These results can serve as a valuable source of information to guide future practices and training, aiming to support their development within these contexts.

Keywords: managerial artifacts; innovation; open-air market; Goiania Hippie Fair; micro and small companies.

RESUMO

A Feira Hippie de Goiânia possui um valor de patrimônio histórico-cultural para a cidade, movimentando toda a cadeia produtiva e gerando um grande impacto na economia local. O objetivo geral da pesquisa é verificar se há um relacionamento positivo entre o uso dos artefatos gerenciais e o grau de inovação por parte dos feirantes da Feira Hippie de Goiânia. É um estudo exploratório com abordagem quantitativa em que o método de coleta de dados foi um questionário físico aplicado aos feirantes da Feira Hippie de Goiânia. Foram aplicados os testes de estatística descritiva e análise de correlação de Person nos dados coletados. Os resultados demonstram que existe um relacionamento positivo entre o uso dos artefatos gerenciais e o grau de inovação por parte dos feirantes da Feira Hippie de Goiânia, sendo fatores de segunda ordem. Além disso, foi possível verificar que, ao aumentar o uso dos fatores de primeira ordem artefatos patrimoniais e de resultados e inovação de plataforma, desencadearia na elevação do uso de vários outros fatores pelos feirantes. Além do mais, a pesquisa investiga a caracterização dos feirantes da Feira Hippie, bem como descreve suas principais práticas administrativas e inovadoras. Esses resultados podem servir como fonte de informação para orientar práticas e treinamentos futuros, visando auxiliar sua evolução dentro desses contextos.

Palavras-chave: artefatos gerenciais; inovação; feira livre; Feira Hippie de Goiânia; micro e pequenas empresas.

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1. INTRODUCTION

Street and open-air markets have been present in societies since humans ceased being nomadic and began settling in specific locations, practicing livestock farming and agriculture. This custom persisted through the Middle Ages in Greek and Roman communities and was brought to Brazil during its colonization (Santos, Acioly, Bezerra & Moser, 2013). They hold great economic, cultural and social importance, reflected in an environment where people buy, sell and converse with acquaintances (Bernardino, 2015). According to Macarenhas and Dolzani (2008), street markets represent a type of retail market organized by the municipality on a weekly basis, aimed at the commercialization of foodstuffs and basic products.

In the case of Goiania, Brazil, the Hippie Fair holds historical and cultural heritage value for the city, driving the entire productive chain and having a significant impact on the local economy, including the hotel and travel agency sectors (Carvalho, Wendland & Mota, 2007). Additionally, it holds the status of being the largest open-air market in Latin America (Silvestre, 2016; Silva, 2020). Although its origins in 1969 are linked to the hippie movement, with the sale of handicrafts, children's activities and traditional foods (Maia & Coelho, 1997), it is now primarily characterized by the sale of a variety of low-cost clothing items, such as underwear, jeans, knitwear, children's clothing and more, most of which are produced by the vendors themselves (Sobrinho, 2012).

Although a significant portion of street market workers operate informally, many are officially registered as Individual Microentrepreneurs (MEI) (Beckman, 2017; Oliveira, 2019; Silva, 2020). Additionally, in the Brazilian state of Goiás, thousands of businesses are operational, with 98.5% of them classified as Micro and Small Enterprises (MSEs), accounting for 54% of employment contracts and 27% of the Gross Domestic Product (GDP) (SEBRAE, 2018). These figures also reflect the national reality, as shown on the Ministry of Economy's website (2023). Thus, there is a clear need for generating information to support the continuity of such entities, one way being the use of managerial artifacts (Feil & Haberkamp, 2020).

Managerial artifacts assist in the planning and development of businesses (Frezatti, Bido, Cruz & Machado, 2015), being characterized as tools, management philosophies, among others (Soutes, 2006), including, but not limited to, inventory control, cost control and balance sheets (Lima & Soares, 2022). Their use also helps increase profit and reduce the likelihood of bankruptcy for Micro and Small Enterprises (Feil & Haberkamp, 2020). Oyadomari, Cardoso and Perez (2010) also consider them important for supporting the innovation management process in these organizations.

According to David, Carvalho and Penteado (2011), innovation can contribute to achieving better results for MSEs, helping ensure their survival in the market (Falaster & Costa, 2020). Radical innovation refers to a completely new idea, unparalleled in the market, such as the creation of the USB flash drive, which offered higher quality, capacity and speed compared to its predecessor, the CD. Incremental innovation, which is more common, results from significant improvements or enhancements to an existing product or service, achieved through additions or substitutions of new materials (Reis, Carvalho & Cavalcante, 2011). Despite these benefits, Souza and Heinzmann (2014) and Oliveira et al. (2021) state that MSEs struggle with effective innovation management due to their lack of managerial artifacts in their businesses.

In this context, this study aims to address the following question: Is there a correlation between the use of managerial artifacts and the level of innovation management among vendors at the Goiania Hippie Fair? Accordingly, the general objective of the research is to verify whether there is a positive relationship between the use of managerial artifacts and the degree of innovation among vendors at the Goiania Hippie Fair.

This research is theoretically justified by the fact that, although the topics of managerial artifacts and innovation are present in several studies, such as those by Lima and Soares (2022), Callado and Melo (2018), Bontempo, Witotovicz and Yoshitake (2019) and Silva et al. (2018), Brazilian literature lacks studies that analyze the relationships between the use of managerial artifacts and the innovation management process, especially concerning street market vendors. Therefore, this study aims to address this gap. Its practical justification lies in investigating the characterization of the Hippie Fair vendors and describing their main managerial and innovative practices, potentially serving as a source of information for future practices and training to help them improve in these contexts. Finally, its social justification considers the importance of the vendors' activities for the local economy and the livelihood of approximately 6,884 registered vendors in Goiania (Prefeitura de Goiania, 2023) and their families.

2. THEORETICAL FRAMEWORK

2.1 Managerial artifacts

Accounting is essential for facilitating congruence between the activities performed by employees and the fundamental purposes of the organization (Oyadomari, Ferreira, Vicente, Neto & Luz, 2008). Accordingly, according to Padoveze (2012), the managerial accountant plays a key role in providing and monitoring information so that managers can make more informed decisions. Due to its intrinsic characteristics, managerial accounting must innovate and introduce new elements and techniques within the organization and its analyses to create the most suitable plan for that institution. Therefore, to assist in the processes of generating and interpreting information, instruments known as managerial artifacts are utilized (Souza, Lisboa & Rocha, 2003).

According to Simon (1996), an artifact is an object that helps humans achieve specific goals. In the following century, Leodoro (2008) explored the etymology of the term, which originates from the Latin “*arte factus*”, interpreted as “a product made with art”. In the context of managerial artifacts, these can be classified as activities, management philosophies, instruments, or models used by managerial accountants, following historical evolution (Soutes, 2006). The information generated by these instruments must be relevant for managerial decision-making (Costa, Cruz & Espejo, 2011). Finally, Espejo (2008) states that these artifacts should facilitate organizational processes, particularly in optimizing resources in the long term.

From the perspective of Brazilian MSEs, Feil and Haberkamp (2020) argue that the use of managerial artifacts can not only boost the profitability of small businesses but also minimize the occurrence of premature failures in these companies. Similarly, Santos, Azevedo, Lima and Lucena (2017) assert that their use significantly reduces resource wastage in organizational operations, while their misuse can compromise value creation by these entities. Finally, the lack of managerial artifacts can result in delays in meeting demands and a loss of productivity, which consequently leads to lower profitability (Maciel & Iarozinski, 2022).

Lima and Soares (2022) subdivide artifacts into five categories: a) production control artifacts, b) operational artifacts, c) financial artifacts, d) prospecting artifacts, and e) heritage artifacts. In this research, these characterizations were considered, along with those by Rosa, Soares and Iudícibus (2018), Birk, Fedato and Pires (2020), Callado and Melo (2018) and Feil and Haberkamp (2020). Adapting them to the reality of vendors in Goiania, the following categories were selected: a) commercial artifacts, b) financial artifacts, c) planning artifacts, and d) heritage and results artifacts. The types of artifacts, their main definitions and the foundational authors are summarized below.

Table 1 - Managerial artifacts

type of artifact	artifacts	definition	authors indicated
commercial artifacts	AC1 - inventory control	All organization and storage of commercialized products (Dias, 2010).	Birk et al. (2020); Feil & Haberkamp (2021); Lima & Soares (2022)
	AC2 - sales control	Sales volume required to generate profit after covering expenses (Feil & Haberkamp, 2020).	Feil e Haberkamp (2020)
financial artifacts	AF1 - cost and expense control	Monitoring of expenses related to the commercialization and management of companies (Garrison, 2013).	Rosa et a. (2018); Feil & Haberkamp (2020); Lima & Soares (2022)
	AF2 - break-even point	The sales level at which all costs are covered, but profit is zero. From this point, every additional unit sold increases the company's profit (Garrison, 2013).	Birk et al. (2020); Feil & Haberkamp (2020)
planning artifacts	AP1 - business budget	A plan expressed in financial and operational terms to control performance and resource allocation (Malmi e Brown, 2008).	Rosa et al. (2018); Feil & Haberkamp (2020); Lima & Soares (2022)
	AP2 - business plan usage	A document that outlines strategies, operations and projections (Salim et al., 2005).	Rosa et al. (2018)
heritage and results artifacts	APR1 - balance sheet	A reflection of the company's assets, liabilities and equity (Rosa et al., 2018).	Callado & Melo (2018); Feil & Haberkamp (2020); Lima e Soares (2022)
	APR2 - income statement (IS)	A comparison of the company's expenses and revenues, providing the result (Marion, 2009).	Callado & Melo (2018); Feil & Haberkamp (2020); Lima & Soares (2022)

Source: The authors (2024)

In addition to the previously mentioned benefits that managerial artifacts offer to entities, they can also be considered important monitoring tools, aiding in the visibility and operation of innovations (Oyadomari et al., 2010), which also contribute directly to business growth (Bessant & Tid, 2019). Frezzati et al. (2015) demonstrated the influence of managerial artifacts on the innovation process within organizations, while also highlighting the ability to configure and adjust management systems to foster a culture of innovation, enhancing employee creativity and entrepreneurship.

2.2 Innovation management

The term “innovation” originates from Latin, with *in* and *novare* meaning “to make something new”. A more detailed definition is “the successful exploitation of new ideas” (Bessant & Tid, 2019). From this perspective, according to the Oslo Manual (1997), innovation involves the introduction of a product or service that may be entirely new or simply improved, contributing to better results for the company and, consequently, to its growth in the market. Furthermore, Dickel and Moura (2016) state that innovation management is usually present in organizations with a competitive and dynamic profile.

In the context of MSEs, David, Carvalho and Penteado (2011) compiled various examples of how innovation can support these organizations. Some increased their profits, others enhanced production agility and some even reduced operational costs, for instance, by changing the order in which steps in clothing production are performed. Despite these benefits, Souza and Heinzmann (2014) and Oliveira et al. (2021) state that small business owners typically do not use managerial artifacts, which hinders effective innovation management.

Lubatkin, Simsek, Ling and Veiga (2006) discuss the two branches of innovation: exploration or radical, and exploitation or incremental. Radical innovation is associated with terms such as “taking risks”, “discovery” and “experimentation”, focusing on new investment possibilities. Incremental innovation, on the other hand, is related to terms like “efficiency”, “execution” and “refinement”, involving continuous improvements derived from established certainties (March, 1991). Finally, the Oslo Manual (1997) adds that radical innovations significantly impact the sector and the economic activities of companies, whereas incremental innovations can be implemented in a less formal manner in the market.

Caliope and Filho (2015) state that, in the context of street markets, the most commonly used type of innovation is incremental, in the form of creative imitation, where designs from shopping malls and other vendors are replicated with modifications, such as changes in fabrics and trimmings. In these cases, designers are free to reproduce the pieces as long as they associate the products with their own brands, carefully avoiding crossing the line into counterfeiting (Tiwari, 2014). There is also the presence of a cycle: someone creates a piece, which leads to its reproduction, followed by market saturation of that item, eventually driving the development of new incremental innovations to ensure the survival of the businesses (Caliope & Filho, 2019).

For this research, after categorizing innovations as radical and incremental (Lubatkin et al., 2006; March, 1991), the characterizations of Bontempo et al. (2019), Silva et al. (2018), the Oslo Manual (1997), Caliope and Filho (2015) and Carvalho, Reis and Cavalcante (2011) were considered to identify the most suitable innovation opportunities for micro and small entrepreneurs associated with the Goiania fair. Below is a summarized presentation of the types of innovations, their main definitions and the foundational authors:

Table 2 - Innovations

type of innovation	innovation	definition	authors indicated
radical innovations	IR1 - product and/or service innovation	New products or services offered to consumers (Oslo Manual, 1997)	Bontempo et al. (2019) ; Silva et al. (2018); Oslo Manual (1997); Carvalho et al. (2011)
	IR2 - process innovation	Methods, equipment and/or skills for developing new services (Oslo Manual, 1997)	Bontempo et al. (2019); Silva et al. (2018); Oslo Manual (1997); Carvalho et al. (2011)
	IR3 - platform innovation	A set of common methods for the technological assembly of a product portfolio (Silva et al., 2018)	Silva et al. (2018)
incremental innovations	II1 - product and/or service innovation	Products or services offered to consumers with substantial improvements (Oslo Manual, 1997)	Bontempo et al. (2019); Silva et al. (2018); Oslo Manual (1997); Carvalho et al. (2011)
	II2 - marketing innovation	Changes in the appearance or packaging of a product, creating a new design (Carvalho et al., 2011).	Silva et al. (2018); Oslo Manual (1997); Carvalho et al. (2011); Caliope & Filho (2015).
	II3 - creative imitation	Copying designs from soap operas, shopping malls, or other vendors, modifying fabrics and trimmings (Caliope & Filho, 2015).	Caliope & Filho (2015)

Source: The authors (2024)

Typically, investments in innovation are made to find solutions for remaining in the market and ensuring survival (Falaster & Costa, 2020). In small businesses, Oliveira, Ferreira, Silva and Lima (2016) state that its use tends to reduce debt and increase sales, revenue, customer base and product quality, thereby ensuring success in their operations. Thus, the innovation process contributes to organizational survival and increases the likelihood of continuity in a competitive and dynamic sector (Hogan & Coote, 2014).

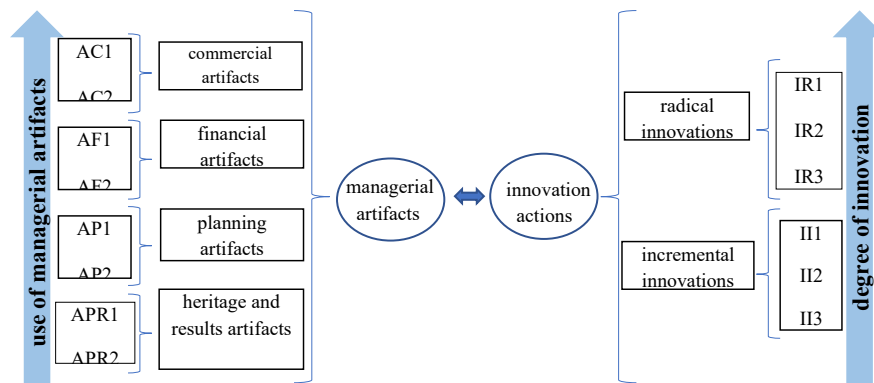
2.3 Research hypotheses

Nisiyama and Oyadomari (2012) conducted research to link managerial accounting and innovation, analyzing various studies that relate these two perspectives. The authors emphasize that the innovation process must be managed for organizations to achieve success. Frezatti et al. (2015), in turn, sought to demonstrate the use of accounting artifacts by formulating hypotheses regarding their influence on the innovation process within organizations, which yielded positive results.

In this context, considering that the use of managerial artifacts can boost MSEs (Feil & Haberkamp, 2020; Santos et al., 2017; Maciel & Neto, 2022), that innovation is essential for the survival of these businesses (Hogan & Coote, 2014; Falaster & Costa, 2020; Oliveira et al., 2016), and that the use of managerial artifacts has a positive impact on innovation management (Nisiyama & Oyadomari, 2012; Frezatti et al., 2015), the following hypotheses are formulated, as also illustrated in Figures 1, 2, 3 and 4:

H1: There is a positive relationship between the use of managerial artifacts and the degree of innovation among vendors at the Goiania Hippie Fair.

Figure 1: Research hypothesis (H1)



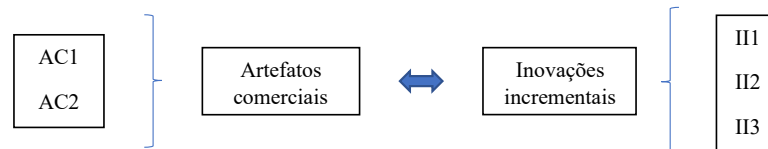
Source: The authors (2024)

2.3.1 Complementary hypotheses

Information on inventory control and sales control can help entrepreneurs determine when to implement incremental innovation and which aspects need improvement. For instance, if the stock of a specific item does not sell frequently, or when considering the pricing of a product, the entrepreneur chooses to change specific elements that could reduce costs and increase the product's margin. Therefore, the following hypothesis is proposed:

H1 a) There is a positive relationship between the use of commercial artifacts and the degree of incremental innovation among vendors at the Goiania Hippie Fair.

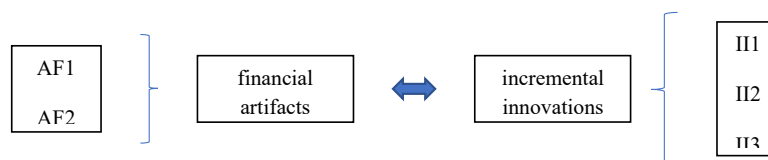
Figure 2: Research hypothesis (H1 a)



Source: The authors (2024)

Information on cost and expense control and break-even points can help entrepreneurs determine when to implement incremental innovation and which aspects need improvement. For example, when a company's revenue does not meet expectations and fails to surpass the break-even point of its operations, it may prompt vendors to consider improvements in their business to not only minimize costs and expenses but also increase revenue. Therefore, the following hypothesis is proposed:

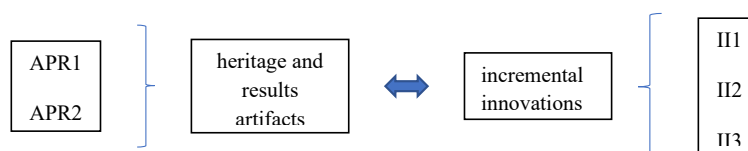
H1 b) There is a positive relationship between the use of financial artifacts and the degree of incremental innovation among vendors at the Goiania Hippie Fair.

Figure 3: Research hypothesis (H1 b)

Source: The authors (2024)

Information from the balance sheet and income statement (IS) can help entrepreneurs determine when to implement incremental innovation and which aspects need improvement. For instance, it can assist vendors in identifying a high financial expense liability on their balance sheet when analyzed, prompting them to apply incremental innovations to reduce such a deficit. Therefore, the following hypothesis is proposed:

H1 c) *There is a positive relationship between the use of heritage and results artifacts and the degree of incremental innovation among vendors at the Goiania Hippie Fair.*

Figure 4: Research hypothesis (H1 c)

Source: The authors (2024)

3. RESEARCH METHODOLOGY

3.1 Methodological aspects

The present research methodology was based on Cooper and Schindler (2016), classifying it as a study with a quantitative approach. It was applied to the vendors at the Goiania Hippie Fair, aiming to deeply understand the relationship between the use of managerial artifacts and the degree of innovation at the fair, thereby addressing the research hypotheses. Table 3 presents the methodological aspects of this study:

Table 3 - Descriptors of research design

category	stage characterizing the research
degree to which the research question was crystallized	exploratory study
data collection method	physical questionnaire
researcher's ability to produce effects on variables	ex post facto
study objective	descriptive
time dimension	cross-sectional
scope of the topic – breadth and depth – of the study	statistical study
research environment	field environment
participants' perceptions of the research activity	real routine
data collection period	from 05/28/2023 to 06/18/2023

Source: Adapted from Cooper and Schindler (2016, p.128)

3.2 Population and sample

According to the Goiania City Hall website (2023), the Hippie Fair has approximately 6,884 registered vendors. However, as Sobrinho (2012) points out, there are numerous informal traders at the site. Thus, the population is represented by the total number of vendors at the Hippie Fair and the sample was census-based by adherence, excluding invalid or incomplete responses.

3.3 Data collection procedure

The data collection procedure consisted of three stages: a) identifying the respondents' profiles and characterizing the vendors' activities, b) assessing the intensity of managerial artifact usage and c) assessing the intensity of innovation usage.

The variables related to the use of managerial artifacts and innovation were measured using 5- and 6-point Likert scales. Managerial artifacts were categorized as "never", "annually", "semiannually", "monthly", "weekly" and "daily," adjusted according to the specific needs of each question. Innovations were measured on a scale from 0 to 4, where "0" corresponded to never and "4" represented very frequently. Table 4 presents the research variables.

Table 4 - Research variables

	construct	factors	variables
managerial artifacts	commercial artifacts	AC1 - Controle de estoque	Com qual frequência você realiza controle de estoque (produtos para venda)?
		AC2 - sales control	How often do you perform inventory control (products for sale)?
	financial artifacts	AF1 - cost and expense control	How often do you perform sales control?
		AF3 - break-even point	How often do you control your costs and expenses (e.g., purchasing items for sale, vendor costs, etc.)?
	planning artifacts	AP1 - business budget	How often do you create your business budget?
		AP2 - use of business plan	How often do you use credit lines, such as loans, financing, etc.?
	heritage and results artifacts	APR1 - balance sheet	How often do you use information from a Balance Sheet?
		APR2 - income statement (IS)	How often do you use information from the Income Statement (IS)?
innovations	radical innovations	IR1 - product and/or service innovation	How often do you create new products or services to sell?
		IR2 - process innovation	How often do you use new methods, equipment, or skills to develop new products or services?
		IR3 - platform innovation	How often do you start using new sales and marketing platforms (e.g., Instagram, flyers, etc.)?
	incremental innovations	II1 - product and/or service innovation	How often do you improve products or services already offered to your customers?
		II2 - marketing innovation	How often do you change the appearance or packaging of a product, creating a new design?
		II3 - creative imitation	How often do you draw inspiration from movie themes, shopping malls, or other vendors by changing fabrics and trimmings?

Source: The authors (2024)

3.4 Data analysis technique

The questionnaire underwent a pre-test with seven researchers from the Laboratory of Accounting, Innovation & Society (LACIS/UFG) between February 7, 2023 and February 11, 2023. Following feedback, 77 contributions were received, of which 48 were accepted.

The data were analyzed using the SPSS statistical software, applying the following tests to address the research hypotheses: descriptive statistics and Pearson correlation analysis.

4. PRESENTATION OF RESULTS

4.1 Descriptive statistics

4.1.1 Descriptive statistics of vendors and their stalls

During the field research, 54 responses were collected, with 27 women and 27 men participating. Additionally, 50% had an active CNPJ registration, 79.6% cited the Hippie Fair as their primary source of income and 90.7% operated only one activity at their stall. Furthermore, 1.85% reported having no formal education, 29.63% completed elementary school, 53.70% finished high school and 14.81% attained higher education. Tables 5 and 6 detail the remaining characteristics surveyed:

Table 5 – Descriptive statistics of vendors and their stalls

variable	mean	standard deviation	minimum	maximum
age	47	13.6	19	75
years as an entrepreneur	18	10.42	1	41
years at the hippie fair	15	8.93	1	30
number of people working with the vendor	4	6.20	0	40
number of stalls at the fair	1	0.86	1	5

Source: The authors (2024)

It is observed that the average age of the respondents is 47 years. The average number of years as entrepreneurs among the respondents is 18 years, which exceeds the average of 15 years working at the Hippie Fair. This indicates that many vendors started their entrepreneurial activities before working at the Goiania Hippie Fair. On average, vendors have four assistants, including salespeople and seamstresses who produce items specifically for their stalls. Overall, vendors manage an average of one stall at the fair.

Table 6 – stall activities

	frequency	percentage
men's clothing	6	11.1%
women's clothing	30	55.6%
children's clothing	4	7.4%
intimate apparel	3	5.6%
footwear	1	1.9%
accessories	3	5.6%
women's and children's clothing	2	3.7%
women's and men's clothing	2	3.7%
women's, men's, and intimate apparel	1	1.9%
unisex hoodies	1	1.9%
bedding	1	1.9%

Source: The authors (2024)

Regarding stall activities, more than half of the respondents sell women's clothing, followed by men's clothing in second place and children's clothing in third. The least frequent sales include footwear, women's, men's and intimate apparel, unisex hoodies and bedding.

4.1.2 Descriptive statistics of managerial artifacts

Regarding managerial artifacts, the second-order factor most frequently used was commercial artifacts, with an average of 3.05, followed by financial artifacts with an average of 2.86, planning artifacts with 0.98 and, finally, heritage and results artifacts with an average of 0.62. The overall average of the construct, as a third-order factor, is 1.88, with a standard deviation of 0.90.

Table 7 – Descriptive statistics of managerial artifacts

	mean	standard deviation	median	min.	max.	skewness	kurtosis
managerial artifacts	1.88	0.90	2.00	0.00	3.38	-0.68	-0.32
commercial artifacts	3.05	1.43	3.75	0.00	5.00	-0.98	-0.12
inventory control	2.59	1.83	4.00	0.00	5.00	-0.62	-1.50
sales control	3.50	1.49	4.00	0.00	5.00	-1.57	1.57
financial artifacts	2.86	1.71	4.00	0.00	5.00	-0.97	-0.84
cost and expense control	2.93	1.72	4.00	0.00	5.00	-1.03	-0.71
break-even point	2.80	1.81	4.00	0.00	5.00	-0.82	-1.10
planning artifacts	0.98	1.06	0.50	0.00	3.50	0.50	-1.15
business budget	1.35	1.81	0.00	0.00	5.00	0.75	-1.22
use of business plan	0.61	1.09	0.00	0.00	4.00	1.66	1.56
heritage and results artifacts	0.62	1.10	0.00	0.00	3.00	1.52	0.67
balance sheet	0.59	1.09	0.00	0.00	3.00	1.61	0.97
income statement (IS)	0.65	1.14	0.00	0.00	3.00	1.47	0.45

Source: The authors (2024)

It is observed that 50% of the managerial artifacts have values above 2, meaning they are used at least semiannually. Furthermore, all factors had responses equivalent to 0, which was selected by vendors who never used the artifact in question. This indicates that different management methodologies can coexist within the same environment.

4.1.3 Descriptive statistics of innovations

Regarding innovations, the second-order factor most frequently used was incremental innovations, with an average of 1.80, followed by radical innovations with an average of 1.50. The overall average of the construct, as a third-order factor, is 1.65, with a standard deviation of 0.68.

Table 8 – Descriptive statistics of innovations

	mean	standard deviation	median	min.	max.	skewness	kurtosis
SECOND-ORDER FACTOR: INNOVATION	1.65	0.68	1.75	0.00	2.83	-0.59	-0.54
FACTOR: RADICAL INNOVATIONS	1.50	0.83	1.67	0.00	3.33	-0.27	-0.75
radical innovation in products and/or services	2.22	1.30	3.00	0.00	4.00	-0.59	-1.09
radical process innovation	0.46	0.69	0.00	0.00	3.00	1.55	2.43
platform innovation	1.81	1.42	2.00	0.00	4.00	-0.07	-1.50
FACTOR: INCREMENTAL INNOVATIONS	1.80	0.80	2.00	0.00	3.33	-0.39	-0.58
incremental innovation in products and/or services	2.22	1.38	3.00	0.00	4.00	-0.33	-1.28
marketing innovation	0.48	0.91	0.00	0.00	3.00	1.72	1.69
creative imitation	2.70	1.55	3.00	0.00	4.00	-0.81	-0.97

Source: The authors (2024)

It can be stated that 50% of the innovations surveyed have values above 2, meaning they are used at least occasionally. Furthermore, all factors had responses equivalent to 0, which were selected by vendors who never utilized the innovation in question. This indicates that, overall, vendors make limited use of innovation artifacts.

4.2 Hypothesis testing

4.2.1 Main research hypothesis

H1 aimed to establish a positive relationship between the use of managerial artifacts and the degree of innovation among vendors at the Goiania Hippie Fair.

Table 9 - Result H1

factor 1	factor 2	Pearson correlation	significance	result
managerial artifacts	innovations	0.435	0,001	confirmed

Source: The authors (2024)

The Pearson correlation indicates a moderate association of 0.435 between the factors managerial artifacts and innovation. Thus, the hypothesis in question was confirmed, considering a p-value ≤ 0.01 . This means that, in the collected sample, the greater the use of managerial artifacts, the greater the use of innovation by vendors at the Goiania Hippie Fair.

4.2.2 Complementary research hypotheses

The complementary hypotheses aimed to achieve similar insights to the main hypothesis but at the level of second-order factors. The three hypotheses asserting a positive relationship between incremental innovation and commercial artifacts (H1a), financial artifacts (H1b) and heritage and results artifacts (H1c) were confirmed.

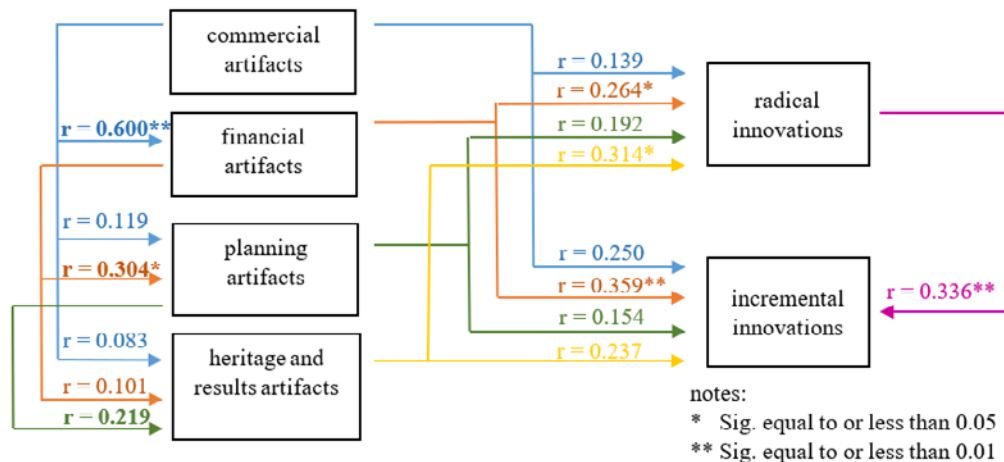
Table 10 - Results of complementary hypotheses

complementary hypothesis	factor 1	factor 2	Pearson correlation	significance	result
H1a	commercial artifacts	incremental innovations	0.250	0.069	confirmed
H1b	financial artifacts	incremental innovations	0.359	0.008	confirmed
H1c	heritage and results artifacts	incremental innovations	0.237	0.084	confirmed

Source: The authors (2024)

5 DISCUSSIONS

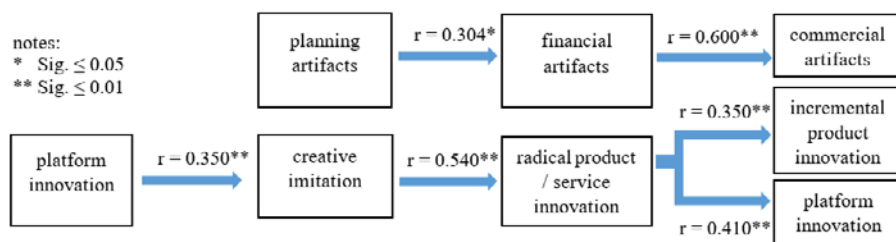
The hypotheses of this study sought to verify and understand the relationship between managerial artifacts and innovations within the context of vendors at the largest open-air market in Latin America, the Goiania Hippie Fair. The results of the tests supported the main hypothesis, aligning with the findings of Nisiyama and Oyadomari (2012) and Frezatti et al. (2015), as well as the three complementary hypotheses. Furthermore, radical innovations showed a positive relationship with both financial artifacts and heritage and results artifacts. However, no positive relationships were identified between this type of innovation and planning artifacts or commercial artifacts.

Figure 5 - Pearson correlations of managerial artifacts and innovations

Source: The authors (2024)

Furthermore, during on-site data collection, respondents shared several impressions previously discussed in this study, such as the fact that many vendors produce their own goods, as noted by Sobrinho (2012). Additionally, some respondents mentioned that innovation, such as offering new or improved products, helps them survive in the market, confirming the findings of Falaster and Costa (2020). Finally, many expressed feeling neglected by the local government. Despite being the largest fair in Latin America and promoting local tourism, they feel they lack governmental support for the fair's promotion and structural maintenance.

Additionally, as shown in Figure 6, the greater the use of planning artifacts, the greater the use of financial artifacts. Moreover, the more frequently financial artifacts are used, the more consistent the use of commercial artifacts becomes. Therefore, if vendors sought or were provided with knowledge about heritage and results artifacts, this population would likely enhance the use of all managerial artifacts discussed in this study. Following this logic, understanding that financial statements can provide valuable information for business decision-making would possibly encourage them to plan their business more effectively and better manage their financial and commercial information.

Figure 6 - Pearson correlations of second- and third-degree factors

Source: The authors (2024)

Finally, it is reasonable to understand from Figure 6 that the greater the use of platform innovation, the greater the use of creative imitation and, consequently, the greater the use of radical innovation in products and/or services. The more frequently radical innovation is used, the more consistent the use of incremental innovation in products and/or services becomes, as well as platform innovation once again. Therefore, if vendors were trained in the importance of innovating their product promotion platforms, this population would likely increase the use of all the innovations mentioned above. Following this logic, understanding how the use of new promotion platforms can improve their businesses would possibly encourage them to creatively imitate current trends, develop new products and continuously improve them to always have something novel to promote.

6. FINAL CONSIDERATIONS

The main objective of this research was to analyze whether greater use of managerial artifacts by vendors at the Goiania Hippie Fair corresponds to greater use of innovation. The secondary objectives focused on specifically analyzing

the types of artifacts in relation to the types of innovations. To achieve this, the administration of questionnaires was essential, with responses collected in person on fair days to gather the necessary data.

After organizing the data, descriptive statistical tests were conducted to better understand the reality of the vendors, along with Pearson correlation tests to evaluate the hypotheses. As a result, the main hypothesis—that there is a positive relationship between the use of managerial artifacts and the degree of innovation among vendors at the Goiania Hippie Fair—was confirmed, as were the three complementary hypotheses linking incremental innovations to commercial artifacts, incremental innovations to financial artifacts and incremental innovations to heritage and results artifacts. Additionally, it was suggested that increasing the use of heritage and results artifacts and platform innovation would trigger a rise in the use of several other factors by the vendors.

Addressing the research limitations, it is important to note that the results cannot be generalized, as the study sample was census-based by adherence and did not encompass all vendors. Furthermore, due to time constraints, it was not possible to cover all the fair's corridors during data collection, which may have limited perspectives from different sections of the fair. Lastly, the temporal scope is restricted to the cross-sectional data collected in 2023.

This study sought to address theoretical gaps regarding the relationship between managerial artifacts and innovation, particularly within the context of street markets, serving as a source of information for future studies, practices and training to aid in advancing these contexts. Additionally, it characterized vendors in the aftermath of the global Covid-19 pandemic, providing a theoretical foundation for future research. For further studies, it is recommended to expand data collection to cover the entire fair, aiming to determine the influence of managerial artifacts and innovations on the success and revenue of vendors at the Goiania Hippie Fair. From a theoretical perspective, it is suggested to conduct studies with an anthropological approach to explore the meaning, symbolism and significance of accounting information from the vendors' perspective. Such an approach could provide more robust data to support stakeholders' decision-making within these organizations while also underpinning interventions aimed at advancing these commercial ventures.

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APPENDIX**Appendix A - Hippie Fair Corridor**

Fonte: Os autores (2023)

Appendix B - Hippie Fair at Christmas

Source: Fernando Leite / Jornal Opção (2018)