

Secretless pastry chefs on Instagram: the disclosure of culinary secrets on social media

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Abstract

Purpose – Informed by Mihaly Csikszentmihalyi's systems view of creativity and Chad Borkenhagen's conceptualization of open source cooking, this study explored how a group of extraordinary pastry chef used Instagram to openly express creativity, disseminate knowledge and reveal culinary secrets. The subsequent impacts of such actions were also assessed.

Design/methodology/approach – A qualitatively driven mixed-method approach was conducted using a nested mixed-method design. A total of 2,456 Instagram posts were visually analyzed alongside a series of interviews with elite pastry chefs over a two-year period.

Findings – Analysis distilled three themes that delineated how elite pastry chefs express creativity and share knowledge mindfully, ethically and altruistically on Instagram. The findings also converged to form a new theoretical model, "systems view of culinary creative sharing," which accounts for the multifaceted considerations of culinary knowledge sharing on social media.

Research limitations/implications – Findings converged to form a systems view of culinary knowledge sharing. This is peculiarly useful for scholars who are interested in developing a greater understanding about "where and how" creative ideas and knowledge originate, disseminate and receive corroborations in the contemporary digital era.

Originality/value – This study highlighted that a new praxis of open sharing looms large in the culinary profession. This praxis symbolizes a movement away from the traditional mindset of safeguarding culinary secrets and toward a more transparent and open philosophy toward knowledge sharing in the culinary community.

Keywords Qualitative research, Knowledge sharing, Social media, Culinary creativity, Qualitatively driven mixed methods, Systems view of culinary creativity, Systems view of creativity

Paper type Research paper

1. Introduction

A chef's creative capacity has been a popular topic for debate in hospitality and culinary studies recently (Lee *et al.*, 2019, 2020; Stierand, 2020; Stierand *et al.*, 2014, 2019). Creativity to a chef, emulates an aesthetic expression, one that is not an instantaneous emission, but a convoluted and emancipating process that involves numerous considerations (Lee *et al.*, 2020; Stierand *et al.*, 2014). In cases where creativity is allowed to flourish, it potentially becomes one of the most cited gratifications that keeps chefs contented (Cain *et al.*, 2018; Tongchaiprasit and Ariyabuddhiphongs, 2016). However, recent studies have noted that there is more to culinary creativity than meets the eye (Lee *et al.*, 2019, 2020; Stierand *et al.*,



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2014, 2019). To be creative in the culinary sector requires a set of preliminary skills and rudimentary knowledge, which are viewed traditionally as sacred intellectual property for culinary practitioners (Fauchart and von Hippel, 2008; Stierand, 2014). For a chef to learn and garner such capacities require more than just a quality culinary education; it also requires years of professional exposure.

One of the most common ways to develop one's culinary knowledge is through culinary apprenticeships alongside elite chefs, trusting that over the course of the apprenticeship, the chef-mentor will unselfishly share and pass on their culinary knowledge (Stierand, 2014). While this mode of learning remains prevalent in the industry, a new emergent praxis of knowledge sharing is developing, one that is altruistic in nature, counteracting conventional wisdom. Borkenhagen (2017) calls this praxis *open source cooking*, a phenomenon in which chefs openly share their creative intellectual property in public venues such as personal blogs, online culinary forums and social media platforms, signifying a paradigmatic shift in the culinary industry's sharing customs and the "death of the secret recipe" in the culinary industry (Borkenhagen, 2017, p. 53). In this study, the term "praxis" is used to describe the phenomenon, as it symbolizes a hefty philosophical movement in the culinary industry that disrupts the conservative customs of withholding knowledge. This praxis is led by elite chefs and driven by strong philosophical groundings, symbolizing a synthesis of theoretical conception and real-world authentication.

This study explores the extent of the open sharing praxis among chefs within a heavily safeguarded domain – pâtisserie (i.e. contemporary pastry arts). Pâtisserie is often segmented distinctly from other cookery categories due to its unique set of rules, philosophies and work systems (Lee, 2020). A proficient pastry chef requires not only the aesthetic touch of an artist but also the scientific reasoning and physicochemical properties of different pastry ingredients, leaving many to consider pastry as a science, rather than a work of art (Lee et al., 2019, 2020). Interestingly, while the pastry field is built on hard-earned knowledge and experimentations, some of the most prolific pastry chefs tend to openly disclose their creative secrets on social media, especially Instagram. This study explores this puzzling phenomenon.

As the open sharing praxis and usage of social media increasingly permeates the pâtisserie domain, the dynamics of how creativity is expressed and how knowledge is disseminated inevitably changes. Some relevant existing studies include the ways how celebrity chefs use social media to reach out and connect with their followers (Clarke et al., 2016; Giousmpasoglou et al., 2020; Zopiatas and Melanthiou, 2019). Others have explored how knowledge is shared and transferred among high-end restaurants and chefs (Chowdhury et al., 2020; Fauchart and von Hippel, 2008). However, to the best of our knowledge, no studies have explored how professional culinary producers use Instagram as means for idea dissemination and secret disclosure, especially in a domain as highly specialized and safeguarded as pâtisserie (Lee, 2020).

Focusing on a group of extraordinary pastry chefs, this study investigated the extent of the open sharing phenomenon on Instagram using a theoretical framework informed by Csikszentmihalyi's (1997, 2014/1988) *systems view of creativity* and Borkenhagen's (2017) praxis of *open source cooking*. The aim was to explore and theorize how elite pastry chefs use Instagram to share knowledge and express creativity, alongside the subsequent impacts of such actions. Two objectives were addressed:

- uncover the creative content and knowledge shared by chefs on Instagram; and
- to assess the effectiveness of each creative content in the pâtisserie domain.

2. Theoretical framework

The theoretical framework was informed by Mihaly Csikszentmihalyi's (1997) *systems view of creativity* and Chad Borkenhagen's (2017) notion of *open source cooking*. In the coming sections, the two theoretical concepts are introduced and integrated alongside relevant literature.

2.1 Csikszentmihalyi's systems view and culinary creativity

Commonly referred to as *the systems view/model of creativity*, Mihaly Csikszentmihalyi (2014/1988) proposes that creativity is not a lone act of individual brilliance, but an intricate and relative phenomenon that must be recognized in its sociocultural context. This sociocultural context comprises of three systems – *the domain*, *the person* and *the field* – and creativity is theorized as a process in which the three systems interact (Csikszentmihalyi, 1997, 2014/1988).

The domain represents the cultural environment, a symbolic system grounded by cultural rules (Csikszentmihalyi, 1997). Domains can be broad or specific, transmitting and supplying a set of symbols for the individual *person* to operate with. For example, gastronomy can be classified as a broad domain, covering a wide terrain of food sourcing, preparation, eating and commensality (Ferguson, 1998). Likewise, the domain can be narrowed to reflect a more specific symbolic context such as *haute cuisine* or *contemporary pâtisserie*, stipulating respectively, to the culture of elite restaurants (de la Lastra *et al.*, 2020) or modern pastry (Lee, 2020). The creative *person* operates within this domain, playing to its symbolic system and using its rules to seek new creative patterns in attempts to contribute to the cultural system (Csikszentmihalyi, 1997). However, not all new ideas are contributory, as one's idea needs to be corroborated by a *field* of experts. It is the *field's* role in the systems model to evaluate the appropriateness of the *person's* creative idea, functioning as gatekeepers that determine what qualifies as a contribution to the domain and what does not (Csikszentmihalyi, 2014/1988).

Stierand *et al.*'s (2014) study is a prime example of how the three elements of the systems model interact. Using Csikszentmihalyi's systems view, Stierand *et al.* (2014) indicated that a chef's creative idea in the haute cuisine domain is assessed by two co-dependent gatekeepers – customers and restaurant guides. Customers serve as the primary gatekeeper to the chef's culinary creation, reflecting a commercial relationship whose payments sustain the chef's and the establishment's fiscal health. Restaurant guides, on the other hand, represent a rigorous and institutionalized field of experts that explicitly evaluates the chef's creative capacity. In the haute cuisine domain, two influential restaurant guides play this role – the Michelin Guide and the Gault Millau (Lane, 2013). Not only do these two restaurant guides pose a substantial influence on the domain's progress but they also induce customer's behaviors and perceptions (Stierand *et al.*, 2014). In brief, Stierand *et al.*'s (2014) study indicate that chefs in the haute cuisine domain need to seek harmony with the two fields (i.e. customers and restaurant guides), producing innovations that warrant attention from leading restaurant guides without losing sight of the expectations of paying customers.

Apart from restaurant guides, there are numerous other fields that act as gatekeepers of the domain. For example, chefs could seek creative corroborations from prestigious culinary competitions such as *The Bocuse d'Or* (Ferguson, 2010) and the *Coupe du Monde de la Pâtisserie* (Lee, 2018, 2020); while others resolve to the evaluations of food writers, critics and other relative media sources (Goodsir *et al.*, 2014). In brief, the arguments presented here denote that the merit of a chef's creative idea does not rest alone in its intrinsic qualities but also on its social appropriateness (Stierand *et al.*, 2014), particularly on the idea's ability to

contribute to the domain it plays in, which rests on the verdict of its relative gatekeepers (Csikszentmihalyi, 1997, 2014/1988).

2.2 Open source cooking: implications on the systems model

Introduced by Chad Borkenhagen (2017), *open source cooking* represents a praxis in which chefs openly share their creative intellectual properties in public venues such as printed publications, personal blogs, culinary forums and social media platforms. This praxis symbolizes a movement away from the traditional culinary mindset of safeguarding and withholding culinary knowledge and toward a more transparent and open philosophy to knowledge sharing among the culinary community; ultimately, signifying the “death of the secret recipe” (Borkenhagen, 2017, p. 53).

Borkenhagen’s (2017) study focused primarily on the domain of *modernist cuisine*, which is a niche culinary sector where chefs strive to break the grounds of culinary development by blending scientific theories and culinary arts together (Cousins *et al.*, 2010). Through the praxis of open source cooking, modernist chefs openly publicize their intellectual property to the modernist community. This allows for chefs’ conceptual ideas, recipes, works in progress and final products to disseminate publicly in the culinary community, allowing others to build upon their work (Borkenhagen, 2017). One of the core benefits of open source cooking is that chefs are able to secure a sense of authorship for their creations and incomplete works. This is particularly useful, given the numerous complexities involved in securing a patent or copyright for menu items/culinary innovations in the restaurant industry (Vargas-Sánchez and López-Guzmán, 2018). Hence, the open sharing praxis empowers chefs to affix their names alongside their discoveries upon sharing, bestowing a sense of copyright for their creative efforts (Borkenhagen, 2017).

Integrating open source cooking to the overall theoretical framework, the praxis adds two layers of complexity to Csikszentmihalyi’s (1997, 2014/1988) systems model. First, the creative *person* is granted greater access to an abundance of new symbolic knowledge in the domain, increasing the chances for creators to seek new patterns and possibilities (Csikszentmihalyi, 2014/1988). Second, the praxis introduces a new system of peer-based evaluation, creating a new *open field* of gatekeepers that consists of fellow culinary practitioners. This allows culinary practitioners to earn appraisals through an “internally oriented system of recognition” (Borkenhagen, 2017, p. 63). In this new open field, fellow practitioners of a domain collectively become the authoritative voice that determines the merits of new ideas, bypassing traditional gatekeepers. Nonetheless, Borkenhagen (2017) explicitly noted that this new open field “does not replace the field’s traditional, critic-based status order,” rather, it instills new implications for those actively practicing the praxis in the field (p. 63). By integrating Csikszentmihalyi’s *systems model* together with Borkenhagen’s praxis of *open source cooking*, the present research has facilitated a deployable theoretical framework to analyze how culinary creativity and knowledge sharing is disseminated on Instagram.

3. Research design and methods

A *nested mixed method design* was used, in which a quantitative research component was embedded (*nested*) within a larger qualitatively driven inquiry (Hesse-Biber, 2010). Epistemologically, the nested design prioritizes the philosophical commitments of the qualitative inquiry (Hesse-Biber *et al.*, 2015), in which this study is framed under the epistemological lens of *constructionism* and the *interpretivism* theoretical frame of inquiry. As interpretivists, the researchers navigated through the inquiry acknowledging that all

meanings and notions of truth are relative, varied and construed by the *interpretivist* epistemic perspective.

3.1 Project origins, sampling and data collection

This study was part of an ongoing two-year qualitative project that investigated the creative lives of nine extraordinary Malaysian world pastry chefs, including the 2019 World Pastry Champions (Lee, 2018, 2020; Lee *et al.*, 2019, 2020). All nine chef-participants from the project heavily referenced Instagram as an essential source of creative dwelling and inspiration, claiming that the platform served as a primary space to “reveal, showcase and share” their creative works, echoing the praxis of open source cooking. This discovery precipitated the emergence of the present study, prompting an investigation that inquires how these extraordinary pastry chefs use Instagram to share knowledge and express creativity.

The researchers began by visiting all nine chef-participants’ Instagram profiles and found that five of the nine chef-participants were heavily engaged in open sharing on the platform, while four were less engaged in general. The five chefs who were heavily engaged explained that Instagram served as a core medium to share ideas and knowledge, while also referencing the platform as an important site for inspiration. Following this, the researchers began revisiting past interview transcripts with the five chefs, which were conducted regularly since December 2017. Dialogues that contained mentions of Instagram and knowledge sharing were isolated and set aside for further analysis, which included conversations about the chef-participants’ personal creations posted on Instagram, their routine use of Instagram and how they adopted ideas from other chefs on Instagram. These isolated transcripts provided the researchers with a better contextual understanding of how the chef-participants used Instagram in their careers and creative endeavors.

Consents were gathered from each chef to extract information from their Instagram profiles. After explaining the project’s intentions, all five chef-participants recommended the inclusion of Chef Paul Hayward – a multi-award-winning pastry chef – as an exemplar practitioner of *open source cooking*. As a result, and upon consent, Chef Paul Hayward was included in the present study as a “snowball,” bringing the total participants to six. Each chef-participant represented an exemplary “creative person” and practitioner of “open source cooking,” which aligned with the present study’s theoretical agenda (Borkenhagen, 2017; Csikszentmihalyi, 1997, 2014/1988). In other words, the chef-participants represented a “theoretical sample,” reflecting information-rich cases purposefully selected “on the basis of their potential manifestation or representation of important theoretical constructs” (Patton, 2015, p. 287). In addition, these chefs also reflect what Dörfler and Stierand (2019) refer to as “investigating the extraordinary,” which are outlier samples who possess a “formidable explanatory power” (p. 575), “an outstanding group of culinary creators on steroids” (Lee *et al.*, 2020, p. 3020).

Several data points were extracted from the sample’s Instagram profiles, including each chef participants Instagram handle (username), number of followers and the individual links to each Instagram post from January 1, 2017, to April 25, 2019 (844 days), which totaled to 2,456 Instagram posts (in both video and static image forms). The captions and number of likes associated with each Instagram post were also recorded. Table 1 lists all participating chefs, alongside a brief account of their professional background and relevant Instagram information.

3.2 Qualitative data analysis

The analysis was conducted in *layers*. First, a series of visual analyzes were conducted on all 2,456 Instagram posts by applying Spyer and Steedly’s (2013) theoretical notion of

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Participant name ¹	Participant Instagram handle ¹	Brief description	No. of followers ²	No. of posts ³
Breadpitt	@breadpitt	Executive pastry chef of a pastry consultancy and innovation lab in Malaysia; Won 6th place in 2017 World Pastry Cup	33,300	326
ChinKheng Lim	@lim.c.kheng	Executive pastry chef of a culinary institute in Malaysia; Won 6th place in 2017 World Pastry Cup	8,111	599
Lawrence Bobo	@lawrence_bobo	Executive pastry chef of a pastry consultancy and innovation lab in Malaysia; Won 4th place in 2015 World Pastry Cup	10,600	98
Otto Tay	@otto_tay	Executive pastry chef of a chocolate innovation center in Vietnam; Champion of 2019 World Pastry Cup	24,000	458
Paul Hayward	@chefpaulhayward	Multi-award-winning consultant pastry chef based in Dubai, UAE; Strongly referenced as an <i>open source cooking</i> practitioner by the present study's participants	50,700	737
WeiLoon Tan	@weiloon0418	Executive pastry chef and co-director of a culinary institute in Malaysia; Champion of 2019 World Pastry Cup	25,800	238
			<i>Total posts:</i>	2,456

Table 1.
List of participants

Notes: 1. All identifiers with consent are *not anonymized*. 2. Number of followers is updated as of 10th May 2019. 3. Number of posts were collected from 1st of January 2017 to 25th of April 2019 (844 days)

“enframement.” Enframement refers to how a photographer purposefully contextualizes an image within a frame by “foregrounding” and “separating” the object of the photo from its general environment (p. 19). Each Instagram post was analyzed by asking two analytical enframement questions:

- “What does this post tell us about the chef’s creativity?” and
- “What are the intentions for posting this content?”

Based on these two questions, each post was assigned several short phrases and descriptions as topic codes. Exemplar topic codes included “recipe with instructions,” “recipe with no instructions,” “video of the process,” “flavor combination,” “technique reveal,” “citations,” “perfunctory” and “throwbacks.” These preliminary codes were then subjected to a second cycle coding process, which categorized the initial topic codes into broader labels according to each topic’s underlying concept and resonance. As a result, five

categories emerged: presence, creative ethics, flavor disclosure, process disclosure and recipe disclosure.

Based on these categories, post-analysis interviews were conducted with the initial five chefs to gain greater insights into each topic. These included topical questions about why they engaged in open sharing, their intentions behind each Instagram post, as well as how Instagram and the creative content shared impacted them as creators in the pâtisserie domain. These interviews were unstructured to maintain a conversational flow while also serving as a “member check” to allow participants to review the researchers’ interpretations and conceptualizations (Lincoln and Guba, 1986). During these interviews, the five categories were agreed to be reflective of their Instagram content and intentions.

After the coding and post-analysis interviews, a final round of content analysis was conducted. This final phase aimed to weave together the past interview transcripts, Instagram data, visual analysis and post-analysis interviews, while also staying mindful of the theoretical underpinnings informing the project. As a result, three themes emerged: *presence*, *creative ethics* and *the disclosure of culinary secrets* which by itself, carries three subthemes: *flavor disclosure*, *process disclosure* and *recipe disclosure*. Each theme is elucidated in full light in later sections.

3.3 Quantitative data analysis

Hierarchical regression models were developed and nested within the qualitative research design to assess the effectiveness of each creative content. The *number of likes* a post received was used as the dependent variable in the regression models. The *number of followers*, *number of accounts that the chefs followed* and *number of posts* that each chef possessed were entered as control variables to control for the confounding effects, as these variables may affect the *number of likes* that each post generated. Furthermore, five dummy variables were created as the independent variables in which 1 = *a post contained a specific creative content* and 0 = *a post did not contain such creative content*. The dummy variables represented the five creative content categories identified in the qualitative phase: *T1 presence*, *T2 creative ethics*, *T3 flavor disclosure*, *T4 process disclosure* and *T5 recipe disclosure*.

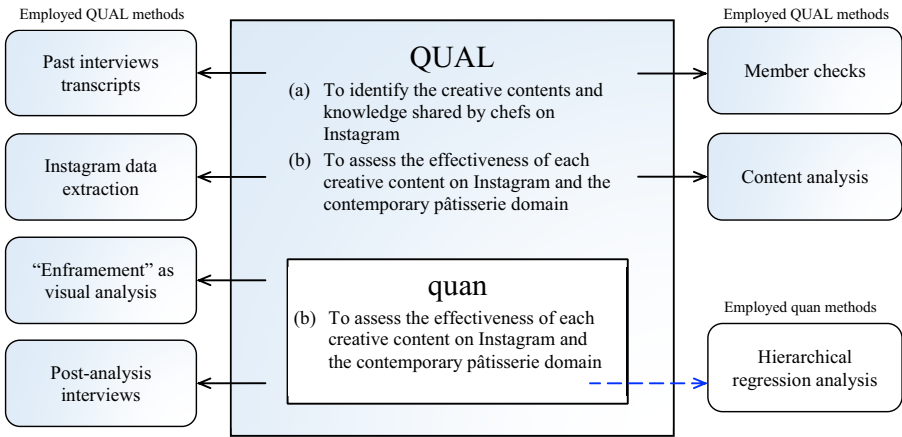
3.4 Summary of research design and analysis

Figure 1 illustrates the overall nested mixed-method design and the different data collection and analytical methods used. The overall design is qualitatively driven (displayed in all caps – QUAL) through the usage of past interview transcripts, Instagram data, visual analysis, post-analysis interviews, content analysis and member checks. In addition, a nested quantitative component (displayed in lowercase letters – Quan) through a hierarchical regression analysis was embedded strategically into the overall design to assess the effectiveness of each creative content. The findings were also linked with the study’s theoretical framework, using both Csikszentmihalyi’s (1997, 2014/1988) systems model and Borkenhagen’s (2017) open source cooking as an *a priori* to conceptualize the final findings. The overall design reflects a gestalt in which each analytical method was brought to a dialogue with the other (Hesse-Biber, 2010; Hesse-Biber *et al.*, 2015). In essence, the research design displayed both *data and analytical diversity*, which served essential for triangulation, and thus, establishing trustworthiness (Lincoln and Guba, 1986; Patton, 2015).

4. Findings

Three themes best describe the chef-participants creative content on Instagram: *presence*, *creative ethics* and *the disclosure of culinary secrets*. In the following sections, each theme is

Figure 1.
The nested mixed-
method design



portrayed alongside relevant literature, interview quotes and four exemplar Instagram posts (Figures 2–5). Each figure/post was selected purposefully due to their resonances to the presented theme. The links are listed as follows:

- Chef ChinKheng’s *Ispahan*: www.instagram.com/p/B5xZ3X6gFNf/
- Chef Lawrence Bobo’s *King Kong*: www.instagram.com/p/BqHMfsSH2ZH/
- Chef WeiLoon Tan’s *Dalmatian*: www.instagram.com/p/BX8R-6zDnWc/
- Chef Otto Tay’s *Giraffe*: www.instagram.com/p/B_7uvPgyIB/

The findings section ends with the nested quantitative analysis, which evaluated the effectiveness of each creative content in relation to the number of likes generated on Instagram.

Figure 2.
Chef ChinKheng’s
“Ispahan” and Chef
Lawrence’s “King
Kong”



4.1 Presence

The first type of creative content reflects a sharing practice that reassures each chef's *presence* on Instagram. In many respects, these contents are best described as perfunctory posts, which require less effort. The purpose of such content is to keep their Instagram profiles alive and engaging and to avoid image relegation in the pâtisserie domain. These posts do not detail much about the creation, often providing only a static image that is captured aesthetically to entice followers. The captions associated with such posts entail only basic descriptors of the creation, omitting details about its creative underpinnings. An example includes Chef ChinKheng's *Ispahan* (Figure 2: Frame 1). In this Instagram post, Chef ChinKheng shares an appealingly captured image of the *Ispahan*. He does not go into detail about the specific creation, neither does the creation reflect something new or developmental in the pâtisserie domain. Instead, the *Ispahan* was published as a reassurance of the chef's social media presence, informing his followers that content is still regularly emerging from his profile.

Another type of post that also helps reassure a chef's presence is "throwbacks." To the pastry chef creator, throwbacks refer to reposted content of past creations and events, which preserves its memories and resonance, bringing a sense of creator-nostalgia to the present. Chefs Otto Tay and WeiLoon Tan, after their 2019 World Pastry Cup win, collectively expressed the importance of preserving their content and creative legacies:

[...] as creators, we need our content to circulate. We will not hold the titles of world champions forever. The next champion will soon take that limelight and we will be a thing of the past. So, we need to stay relevant and we need to show our followers who we *are*, who we *were* and what we are doing [paraphrased].

All creations have a life cycle. The chef-participants in this study not only understand this fact but also strategically disrupt the life cycle through sharing "throwback" content, which keeps their old creations and ideas alive and relevant. These "throwbacks" are purposefully perfunctory and "published for the sake of publishing" to help reinstate the creative statuses and legacies of past outcomes.

4.2 Creative ethics

The second type of shared creative content concerns the *creative ethics* that are honored, practiced and upheld by the pâtisserie domain. In these shared contents, chefs pay tribute to other culinary producers by ethically citing the recipes and initial conceptions of the creator-predecessors before them. This ethical awareness represents powerful social norms that are strongly enforced by the people of the pâtisserie domain and community. In a previous study, Fauchart and von Hippel (2008) explains the ways how haute cuisine chefs ethically oblige to three core principles when dealing with culinary intellectual property. The study noted that a violation of any of these three principles would bring considerable dishonor to one's creative stature (Fauchart and von Hippel, 2008). The three principles are:

- (1) Principle 1. never exactly imitate another chef's creation;
- (2) Principle 2. never share another chef's creation with others without permission; and
- (3) Principle 3. always acknowledged and give credit when using another chef's creation.

The present study found that three principles are also practiced by elite pastry chefs in the pâtisserie domain. Looking once again at the *Ispahan* post (Figure 2: Frame 1), Chef ChinKheng ethically cites the original creator, Chef Pierre Hermé, by tagging his Instagram handle @pierrehermeofficial. This citation served two purposes for Chef ChinKheng. First, he announced publicly that the *Ispahan* is not his original creation, but a replica of another

chef's, hence ethically honoring [Fauchart and von Hippel's \(2008\)](#) third principle. Second, he tagged Pierre Hermé's Instagram handle, allowing the public to visit Pierre Hermé's Instagram profile, if interested. This example shows that not all shared content is purely original conceptions but rather built on a community of creators in the pâtisserie domain. To further illuminate, Chef Breadpitt stated:

To label me as an artist is a mistake. I am an imitator; I copy ideas from others. But I do not steal, I always acknowledge who I steal from.

Another thread that fits under this theme is how chefs “flex who they know” in the pâtisserie community. Chefs would post Instagram content that showcases their collaborations with other elite chefs, which establishes their reputation as *a creator among creators*. [Figure 2](#): Frame 2 shows a prime example of this occurrence, as Chef Lawrence Bobo, posted a chocolate showpiece named, *King Kong*, alongside Chef Christophe Morel. His caption reads:

King Kong made in chocolate, collaborations in the @pastry_school_malaysia with the fabulous @cmorelchocolatier.

In this post, Chef Lawrence “flexes” to the pastry domain that he is among the very best creators in the world, as he worked alongside an eminent pastry figure, Christophe Morel. By doing so, he makes an imprint of himself as *a creator among creators*. Most importantly, he does this ethically and mindfully, paying tribute that the showpiece was not an individual act of brilliance, but a collaboration with another.

4.3 The disclosure of culinary secrets

The final form of creative content entails the holy grail of culinary secret revelations and the epitome of open source cooking – *the disclosure of culinary secrets*. Here, chefs altruistically disclose culinary secrets, sharing and exposing the details of their intellectual property such as the procedures of the creation process, glimpses of associated techniques and even complete recipes on Instagram. This disclosure entails three subthemes: flavor, process and recipe disclosures.

4.3.1 Flavor disclosure. The first disclosure – *flavor* – concerns with how chefs openly disclose the main taste components of their creations, breaking them down into comprehensible layers for their Instagram followers. In [Figure 2](#)'s *Ispahan*, Chef ChinKheng conspicuously discloses the layers of the *Ispahan* in bullet form: “*Italian Macaron, Rose Butter Cream, Lychee and Raspberry.*” This reveal, although subtle, is described as the most sacred knowledge by the study's chef-participants. Depending on a culinarian's level of culinary experience, one could easily deduce ChinKheng's Instagram post down to its elemental essences. To better understand how this mode of deduction works, we drew upon the conceptual premises of [Page and Dornenburg's \(2008\)](#) “flavor equation.” The flavor equation breaks down dishes to their elemental components. For example, the flavor equation breakdown for the *Ispahan* could be depicted in the following variations:

- v1. Macaron + Rose + Lychee + Raspberry = *Ispahan*
- v2. [Almond + Meringue] + Rose + Lychee + Raspberry = *Ispahan*
- v3. [Nuts] + [Meringue] + [Floral element] + [Tropical fruit] + [Berries] = *Ispahan*

Depending on a chef's level of experience, the flavor equation of the *Ispahan* post could be deconstructed and analyzed from its higher-order constructions (v1: Macaron, Rose) to its elemental form (v3: Nuts, Meringue, Floral element). The different variations of the

Ispahan's could potentially serve as a source of ideas for other culinarians to tinker with, by adding, subtracting or substituting elements in the equation.

In the post-analysis interviews, each chef-participant shared that the true secret behind every great dish/dessert lies in its concoction of *flavors*. This notion is in line with previous studies, denoting that the ability to conceptualize and harmonize different flavor entities resemble "a chef's ultimate weapon" (Lee *et al.*, 2020, p. 3023), echoing the true essence of the culinarian's creative journey (Page and Dornenburg, 2008; Stierand and Dörfler, 2012). World Pastry Champion, Chef WeiLoon Tan explains:

Our ability to find and develop new flavors is what makes a chef, a chef. It is our job, to explore, discover and to find new flavor possibilities [...] It is all for our consumer's experience[...] That's our purpose. It is what makes a chef, a chef. The flavor is always our number one priority. [paraphrased]

4.3.2 Process disclosure. The second disclosure exposes the *process* of making, revealing the *culinary techniques* associated with the creation. Culinary techniques here refer to the psychomotor skills and knowledge required to perform a particular culinary task (Ruiz *et al.*, 2013). These types of posts reveal how a product is made, unveiling the psychomotor techniques, the tools used and the ingredients/components used. A prime example of a process reveal is Chef WeiLoon Tan's *Dalmatian*, an Instagram video made entirely from isomalt sugar (Figure 3). Analyzing the visual, Chef WeiLoon discloses three key elements. First, he revealed the different tools and utensils needed to produce the creation, which included a flat-dome-shaped silicon mold, a jug for casting and a blow-torch. Second, he discloses the ingredients/components necessary for the creation, which included three different variations of isomalt: clear liquefied isomalt, black crystalized isomalt discs and white liquefied isomalt.

Third and most importantly, Chef WeiLoon unveiled the psychomotor techniques associated with producing the *Dalmatian*'s spotted pattern, demonstrating the specificities of how each layer was constructed. Chef WeiLoon demonstrated a culinary technique known as "reverse mounting," a method associated with multilayered frozen desserts in



Figure 3.
Chef WeiLoon Tan's
"Dalmatian"

which layers are built (mounted) from the upside-down. Applying this method, he first casted a layer of clear isomalt in the silicon mold, followed by a scatter of crystalized black isomalt discs and then finishing the process by casting a final layer of white liquified isomalt (Figure 3: Frame 1–2). Finally, he also demonstrated the finishing touches as he torched the surface of the unmolded dome to achieve a shine (Figure 3: Frame 3–4).

While this exemplar Instagram post disclosed the psychomotor intricacies tied to the making of the *Dalmatian*, it also selectively omitted details, particularly the tacit knowledge involved in the crystallization process of preparing isomalt. In other words, this Instagram post assumed that the viewer would possess the basic knowledge of the physicochemical properties of isomalt, echoing what Lee *et al.* (2019) referred to as “the science behind the making of art” (p. 26) in the culinary creative process. Nonetheless, this step-by-step reveal openly shared the process behind his creations to viewers of the public and the pâtisserie domain.

4.3.3 *Recipe disclosure.* The third disclosure exposes the complete *recipe* of a product. In these posts, chefs openly reveal the flavor components, the precise measurements of each ingredient and the necessary instructions to replicate the product. Some chefs share their recipes by including them in the captions, while others explicitly share an image of the entire recipe as part of the Instagram post. Chef Otto’s *Giraffe* presents a prime example of the latter. The *Giraffe* is an Instagram “album” post that comprises three images: the first displays the creation (Figure 4: Frame 1), while the second and third detail the recipe (Figure 4: Frames 2–3).

Focusing on Frames 2–3 (Figure 4), Chef Otto disclosed several elements to the public. Not only did he reveal the *Giraffe*’s flavor properties (i.e. Chocolate Streusel, Coconut Biscuit, Coconut Cream, Milk Chocolate Mousse and Milk Chocolate Chantilly) but he also exposed the ingredient lists, specific measurements and written instructions to produce the *Giraffe*. This reveal represents the ultimate revelation of creation, as it lays out the complete blueprint for other chefs to adopt and replicate. However, the post is also a carefully calculated one. Similar to Chef WeiLoon’s *Dalmatian*, the *Giraffe* selectively omitted details, especially the tacit knowledge involved in producing each element and assembling the product. For example, the written instructions for the *Giraffe*’s *Milk Chocolate Mousse* read:



2

Chocolate Streusel
Melt in the butter into brown sugar, almond powder and flour together until consistency becomes like a paste. Cool down, add sea salt, flakeline, brown sugar and mix in dark chocolate.

Coconut Biscuit
Whisk up egg white and brown sugar. Measure remaining ingredients by all dry ingredients.

Coconut Cream
Mix well sugar with starch and add in puree while cold. Bring to boil, add in gelatin and desiccated coconut and thicken.

Milk Chocolate Mousse
Make Ganache (or other fill in whipped cream is)

Milk Chocolate Chantilly
Make ganache method, keep in chiller for at least 8 hours, whip it up for piping.

Ingredients	Quantity	Unit (Grams)	Remark	Note
Chocolate Streusel	Can get 15mm			
Unsalted Butter	85	g		
Cosmo Brown Sugar (20)	85	g		
Almond Powder	85	g		
Sea Salt Flak	1	g		
Cake Flour	50	g		
Dark Chocolate 70%	75	g		
Cholesterol	25	g		
Sea salt Flak	1	g		

3

Ingredients	Quantity	Unit (Grams)	Remark	Note
Half Tray (Sheet)	275	g		
Brown Sugar	75	g		
Almond Powder	60	g		
King Sugar	200	g		
Cake Flour	60	g		
Desiccated Coconut	150	g		PRETOASTED
Coconut Cream	Can get 15 mm	1.3		
Puree Coconut	300	g		
Desiccated Coconut	40	g		PRETOASTED
Brown Sugar	30	g		
Potato Starch	10	g		
Gelatin	5	g		
Water	15	g		Do not fire scale
Milk Chocolate Mousse	Can get 15mm			
Whipping Cream	150	g		
Milk chocolate 33.6%	250	g		
Whipping Cream	200	g		
Gelatin	5	g		
Water	20	g		
Sea Salt Flak	1	g		
Milk Chocolate Chantilly				
Whipping Cream	500	g		
Milk Chocolate 33.6%	250	g		

Cocoa Butter Milk Chocolate = 200g Milk Chocolate + 150g Cocoa Butter + Yellow Powder (Gelatin)
Cocoa Butter Dark Chocolate = 200g Dark Chocolate + 150g Cocoa Butter

Figure 4.
Chef Otto Tay’s
“Giraffe”



otto_tay Giraffe 🦒 Inspired by
Giraffe, Natural, Leaf 🌿
Flavours combination of 🥥 Coconut, 🍫
Milk Chocolate, 🧂 Sea Salt, Hazelnut .

“Make ganache (a), then fold in whipped cream (b)” (Figure 5: Frame 2). Although the instructions are provided, they contain minimal details such as how to make a *ganache*, which entails specific steps. The instructions also contained encrypted pastry chef symbols “(a) and (b),” which are specifically targeted for fellow pastry chefs and not the general public. This phenomenon implies that the open sharing of recipes may although appear as an altruistic act; however, the knowledge and information shared are only decipherable and comprehended by a limited few (Borkenhagen, 2017).

While the praxis of open sharing may appear to invite potential imitations from competitors, the chef-participants in this study, however, remained unthreatened by this issue. This is because the content shared is encrypted with tacit knowledge pertaining to contemporary *pâtisserie*, making it almost undecipherable to commoners and less experienced culinarians. Even if an individual were to fully understand the lexicon of the shared content, acting upon the information also presents numerous practical considerations. As Chef Otto explained:

I have yet to see anyone replicate my product exactly. They don't have the tools and lab equipment I have. You need my toys (referring to his tools and equipment) to make my toys (referring to his creations). [paraphrased]

Chef Otto's explanation is in line with Borkenhagen (2017), who noted that the reproduction of an elite chef's creation is not a simple task, as it requires a series of infrastructure, “dramatically limiting the number of people capable of following these instructions” (p. 60).

4.4 Quantifying the impact of creative content

To this end, this study has uncovered five different creative contents (represented in three themes) shared by the chef-participants. Nonetheless, the question remains whether the shared content is socially valued. Thus, hierarchical regression models were developed to evaluate each creative content's impact on the number of likes on Instagram. The results in Table 2 indicated that all three control variables significantly predicted the number of likes at the $p < 0.001$ level. Among the five creative contents, T4 process disclosure ($\beta = 0.273, p < 0.001$) and T5 recipe disclosure ($\beta = 0.043, p < 0.05$) significantly predicted the number of likes, suggesting that the disclosure of the culinary production processes and recipes (i.e. the traditionally safeguarded knowledge) are more likely to be socially valued by the Instagram community.

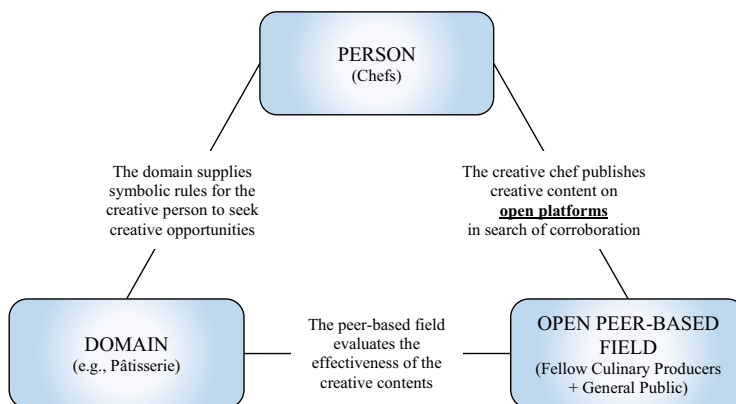


Figure 5.
Systems view of
culinary knowledge
sharing

Table 2.
Results of
hierarchical
regression analysis
predicting the
number of likes

Variables	No. of likes	
	Model 1	Model 2
Control variables		
<i>Number of followers</i>	−0.115**	−0.262***
<i>Number of accounts followed</i>	−0.360***	−0.402***
<i>Number of posts</i>	0.074**	0.114***
Independent variables		
<i>T1 Creative presence</i>		0.053
<i>T2 Creative ethics</i>		0.030
<i>T3 Flavor disclosure</i>		−0.038
<i>T4 Process disclosure</i>		0.273***
<i>T5 Recipe disclosure</i>		0.043*
R^2	0.080	0.132
Adjusted R^2	0.079	0.129
ΔR^2	0.080	0.052
F	70.871***	100.024***
ΔF	70.871***	29.153***
Notes: $n = 2,456$, * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$		

Based on the findings from the qualitative and quantitative phases, culinary knowledge sharing consisting of these two specific disclosures (process and recipe) increases their social influence on Instagram the most. In contrast, flavor disclosure was not statistically supported to affect the number of likes. One plausible explanation for flavor reveal’s insignificance is the imperceptibility of flavors on Instagram’s virtual interface. Given the virtual setting and the absence of the human’s gustatory senses when consuming this particular disclosure, it is, perhaps, challenging for the followers to get a deeper sense impression of the shared flavor disclosure.

5. Discussion

5.1 Systems view of culinary knowledge sharing

The purpose of this study was to theorize how chefs used social media as a platform to share knowledge and express creativity. The specific goals were to uncover the creative content and knowledge shared by chefs on Instagram and to assess the effectiveness of each creative content in the pâtisserie domain. Not only did the findings answered the two objectives but they also converge to form a new theoretical model that accounts for the multifaceted considerations of culinary knowledge sharing on Instagram. This model is labeled as *the systems view of culinary knowledge sharing* (Figure 5).

Overall, the proposed model aligns with Csikszentmihalyi’s (1997) systems perspective, acknowledging that culinary creativity is not a lone act of brilliance, but an interplay of three systems: the domain, the creative person and the open peer-based field. The dynamics between the three systems are presented as a series of circular causalities with an arbitrary starting point, meaning that each system affects one another in a non-sequential systemic process.

The *domain* represents the symbolic system in which the *creative person* operates, supplying the rules and boundaries. The *creative person* (the chef) operates within this domain, using its rules in search of new creative opportunities to contribute to the domain. What makes this study’s conceptualization unique is the introduction of a new *open peer-based* field, which is attributed to the changing technological landscapes and the growth of

open sharing among practitioners in the industry (Borkenhagen, 2017). The *open peer-based field* represents the gatekeepers, signifying a metaphoric “sieve” that “sifts out” the non-contributory from the contributory, ultimately determining what qualifies as creative and what does not (Csikszentmihalyi, 2014/1988, p. 52). This new field is based on a peer-based evaluation system that comprises culinary professionals and the general public. The rise of the open sharing praxis and popularization of social media are the main driving forces that precipitated this new open peer-based field, which instigates a new authoritative voice that openly consumes, critiques and shares content that they believe has creative merits. Nonetheless, this new system does not replace the traditional critic-based field, but rather it adds a new dimension to the conventional gatekeepers of culinary creativity (Borkenhagen, 2017). The following sections discuss the dynamics between each system, using the empirical findings from the present study to explain how one system interacts with another on Instagram.

5.1.1 The person-field dynamic. For the most part, this study unraveled three themes, each signifying different types of creative content deployed by chefs on Instagram. Each theme reflects different intentions from the creative person, which are inadvertently consumed by the new open peer-based field of gatekeepers. The first theme – *presence* – keeps chefs’ Instagram profiles alive and engaging, ensuring that a steady stream of creative content is released. This is done so by posting old content such as “throwbacks”. The second theme – *creative ethics* – represents the ways chefs oblige to the social norms and ethics of the *pâtisserie* domain. They do so by ethically citing previous work that informs their creative ideas, while also acknowledging other creators who collaborated in respective creative projects. The third theme – *the disclosure of culinary secrets* – signifies carefully calculated reveals, exposing different facets of their creative properties to the public. The disclosure of culinary secrets entails three subthemes – *flavor*, *process* and *recipe disclosures* – each of which exposes different facets of their creative secrets and knowledge to the public.

Each theme represents carefully calculated actions that seek validation from the new field, delineating how elite pastry chefs share knowledge and express creativity *mindfully*, *ethically* and *altruistically* on social media. The findings expanded Borkenhagen’s (2017) initial conception of open source cooking, showcasing the minutiae of how elite chefs openly share creative ideas and knowledge to the open peer-based field of contemporary *pâtisserie*. This study posits that through Instagram, culinary producers are able to bypass conventional critic-based gatekeeping systems, allowing creators to openly share their ideas to the open peer-based field, which comprises fellow practitioners and the general public.

5.1.2 The field-domain dynamic. The new open peer-based field possesses the authority to popularize content on social media (by consuming, liking, critiquing and (re)sharing) that they believe has creative merits. The nested quantitative component supplied statistical evidence to this proposition, examining the effectiveness of each theme in generating a number of likes. Results from Table 2 showed that *the disclosure of culinary secrets* was found to be the most socially valued content among the open peer-based field when compared to the other two themes (*presence* and *creative ethics*). Specifically, the disclosure of culinary *processes* and *recipes* were positively associated with the posts’ number of likes. This greater number of likes implies a greater appreciation from the field for these two particular shared contents, as “likes” resemble a form of social currency. In contrast, *flavor disclosure* was not statistically supported to affect the number of likes. One plausible explanation for *flavor disclosure*’s insignificance is the imperceptibility of flavors on the Instagram virtual interface. In

essence, while the open sharing phenomenon has triggered an influx of new content production, it does not necessarily mean that all contents are equally valued by the field. Hence, this study provided a glimpse in explaining this phenomenon, showcasing which content is more socially valued than others on Instagram.

5.1.3 The domain-person dynamic. In its aftermath, the proliferation of new information and creative ideas on Instagram have nourished the pâtisserie domain with an abundance of new symbolic capital. This engenders two implications for the domain-person dynamic. First, the creative person has greater access to a plethora of symbolic capital in the domain. This offers an abundance of opportunities and creative angles for chefs to build off on. However, this proliferation also saturates the domain, causing certain ideas to turn into short-lived and valueless fads. Ideas that are circulating with popularity on social media may not necessarily possess the adequate merit that is on par with the professional domain. Hence, this may prompt some less experienced chefs to misguidedly adopt and advance valueless threads, churning a cycle of futility.

Second, given the potential surplus of ideas, the creative person needs to be more mindful of other creator-predecessors before them. As findings have shown, elite chefs are meticulously careful when claiming new knowledge, as they ethically cite ideas that stimulate their own (e.g. Chef ChinKheng and *The Ispahan*). This process mindfully honors other creators' creations in the domain, ensuring that one is not engaged in creative misconduct (Fauchart and von Hippel, 2008). In essence, although the proliferation of new knowledge and creations on social media seemed to be advantageous to the creative person, creators still need to be mindful when consuming and adopting such information.

Overall, the findings converged in harmony with the proposed theoretical conception, supplying empirical evidence on how the praxis of open sharing has permeated the linkages between each system. Figure 6 graphically delineates a summary of the present study's findings, depicted specifically in coherence with the view of the proposed system of *culinary knowledge sharing*.

6. Conclusion

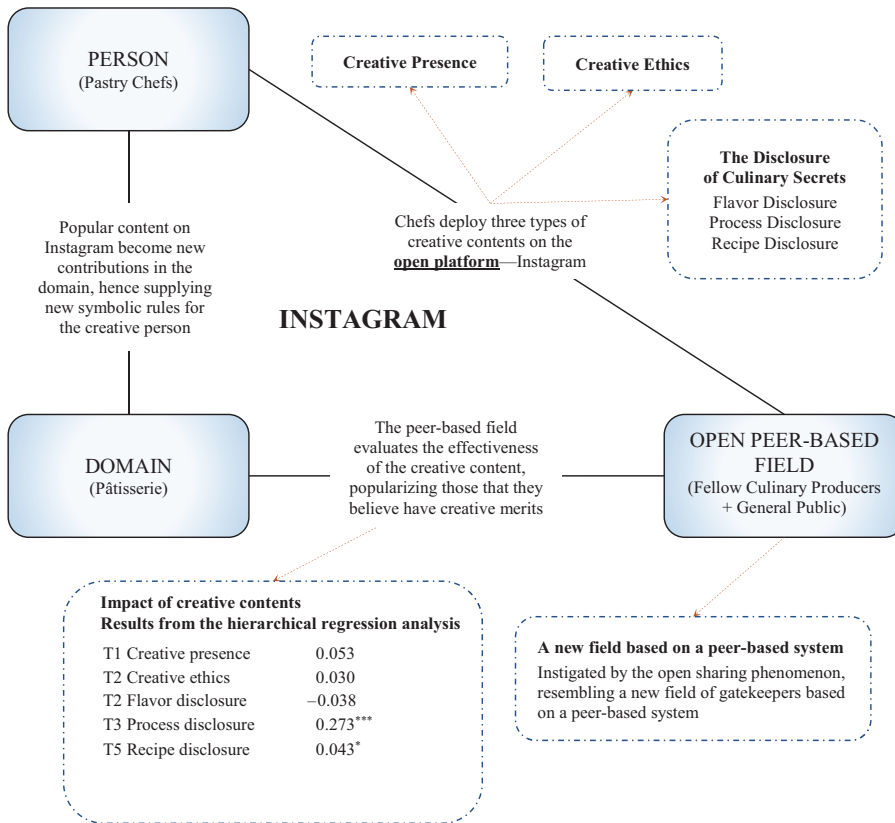
6.1 Theoretical implications

Summarizing the abovementioned, this study contributes through the supply of a new open systems model – the systems view of culinary knowledge sharing (Figure 5) – which explains how culinary creativity and knowledge sharing are manifested on social media. The future researcher should find this model peculiarly useful for developing a greater understanding about “where and how” knowledge and ideas originate (from the domain), disseminate (from the person) and obtain corroborations (from the open peer-based field) in the contemporary digital era. The model is in congruence with Csikszentmihalyi's (1997, 2014/1988) systems theory and its previous applications in the culinary field (Stierand *et al.*, 2014), but distinct in the introduction of a new open peer-based field of gatekeepers, which serves as an alternate gatekeeper to the institutionalized body of restaurant guides. As the mobility of ideas continues to burgeon from one platform/source to another, this model could serve as a starting point for future researchers interested in developing a greater understanding of creativity in its contextual terrain.

6.2 Practical implications

The *systems view of culinary knowledge sharing* can assist chefs, managers, culinary organizations and culinary educators to better understand culinary creativity and how

Secretless pastry chefs on Instagram



Notes: $n = 2,456$, $*p < 0.05$, $**p < 0.01$, $***p < 0.001$ (the nested quan component)

Figure 6.
Summary of findings
depicted in coherence
with the *systems view*
of culinary knowledge
sharing

knowledge is disseminated in the modern digital era. Specifically, the theoretical model highlights that creativity is not centered on an individual, but through the dynamic interactions between the three systems. By understanding these dynamics, practitioners can better locate, manage and adopt creative stimuli and knowledge to facilitate their creative endeavors. Recognizing that content consumption is observer relative, culinary producers and relative stakeholders are advised to adopt the present study's findings as a lens to strategically extract creative content from public domains. Whether on Instagram or other platforms, the conceptualized themes could help practitioners better identify which content is meaningful, which is perfunctory and the specific particularities that are disclosed. For example, as the findings illustrated, some disclosures are highly explicit (e.g. recipe and process disclosures), which allows culinary producers to immediately adopt them into their future creative endeavors. Conversely, other disclosures (e.g. flavor disclosure) are subtle, but may potentially possess more merit than their initial impression. By knowing what information to look out for, culinary producers could better locate, extract and adopt valuable knowledge from the domain.

From an educational standpoint, the open systems view could serve as a useful framework to help culinary curriculums and training programs better design creative learning objectives. As creativity continues to reign as a core gratification that keeps chefs contented at their jobs (Cain *et al.*, 2018; Lee *et al.*, 2020; Tongchaiprasit and Ariyabuddhiphongs, 2016), the systems view could serve as a useful theoretical tool that explains where creativity happens (boundaries of the domain), what is considered as creative (determined by the open peer-based field) and who creates (the creative person). For example, individual case studies about chefs' creations (the creative person) could be embellished with the symbolic contexts from which they transpired; while also considering the many contextual grounds (the domain) and the relative authoritative gatekeepers during the given time and context (the field). By focusing on these systemic intricacies, future culinary producers would be more critical and conscious in their respective domains.

Finally, the researchers would like to emphasize the imperative role of *creative ethics*. In today's day and age, culinary producers need to be mindful of what they produce and claim as their own. As portrayed, the culinary community possesses strong social norms that could bring considerable disrepute upon violation (Fauchart and von Hippel, 2008). Hence, culinary producers need to be mindful and acknowledge the source(s) of their ideas and when necessary, seek consent and permission from relevant creator-predecessor before publishing creative content. Only through such ethical considerations could the culinary creative community flourish and advance in the right direction.

6.3 Future research, limitations and final remarks

The *systems view of culinary knowledge sharing* could serve as a springboard for future research endeavors. Future studies are encouraged to further refine and develop the existing framework by pertaining specifically to the person, the domain and the open peer-based field; as well as the dynamics between each of them. The following questions could serve as potential directions:

- Q1. How does the open peer-based field impact the ways chefs initiate and perceive the creative process?
- Q2. How does the open peer-based field function alongside the conventional field (i.e. restaurant guides, critics and customers)?
- Q3. Within the open peer-based field, which social group/subgroups are more influential in corroborating creative content; and how would these groups/subgroups influence the domain and the creative person?
- Q4. As the praxis of open sharing continues to burgeon, what is the future of culinary creativity and knowledge sharing customs in the larger domain of culinary arts?

As with most interpretivist studies, the conceptualizations are exclusive to the theoretical sample; hence readers need to be attentive when adopting and forming interpretations. This study specifically extracted data from an extraordinary group of elite Asian chefs (apart from Paul Hayward), which was particularly selected given the group's global recognition. Future studies could consider expanding the reach and investigate chefs from different statuses, cultures and countries to better understand the extent of the open sharing phenomenon among the global culinary community. Future studies may also consider exploring the potential (dis) similarities in content creation and knowledge sharing among different knowledge-sharing platforms (e.g. YouTube and Pinterest), while carefully tailoring their methodological approaches to fit the platform's context.

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