Functional Customization in Looter Shooters and Roguelikes

Crafting the Meta Build

Alex Maddox | Cohort 34 | Producer

Agenda

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Situating the Case

Customization

Customization is defined as activities where users modify some aspect of an interface to a certain degree to increase its personal relevance [1].

Aesthetic

Aesthetic customization involves altering a player's character's appearance like their hair color, or types of clothes they are wearing [1]. **This games user research does not touch on aesthetic customization.**

Functional

Functional customization is defined as using or altering features designed mainly to fulfill task-based goals such as equipping a new weapon in a videogame or changing one's strategy [1].

Why Functional Customization?

Functional customization (FC) is the primary way players express skill, strategy, and identity in action games. It sits at the intersection of game design and player psychology, yet no existing framework breaks it down into measurable subcategories. This study seeks to fill that gap.

FC was examined across two action subgenres:

Looter Shooters

Roguelikes

What is a Looter Shooter?

A distinct subgenre of action games

Definition

Characterized by the combination of shooter mechanics, procedurally generated weapons and loot, fast-paced mechanics, and a grind to progress through the game to upgrade equipment [2], [3].

Core Gameplay Loop

Customizing your character with long term rewards (guns and equipment) that are usually randomized gear drops ranging from common to legendary rarity [2], [4].

Rarity Systems

Item tiers commonly range from common, uncommon, rare, epic, to legendary, each offering progressively greater benefits to the player [4].

What is a Roguelike?

A distinct subgenre of action games

Definition

Defined primarily by mechanics that have players frequently experience failure, encouraging repeated attempts, learning from mistakes, and gradual mastery [5], [6].

Permadeath

When a player's character dies, they do not respawn. The player must restart the game from the beginning, creating significant stakes for every decision and encounter [5].

Runs

A scenario a player goes through that ends with a victory or player death, where the player begins from scratch or at a much lower point of power [7]. Customization changes per run.

Failure Gameplay Loops

These subgenres were selected because failure loops helps create different conditions for FC

What is a Failure Gameplay Loop?

Roguelikes are designed with the expectation that players will frequently experience failure. The loop of failure and retrying is important to the roguelike experience, impacting both player progression and engagement [6]. This forms a gameplay loop centered on repetition, adaptation, and incremental mastery [5], [6].

Looter Shooters

Customization follows basic kill-and-loot gameplay loops. Progress is retained. Players build power over time through accumulated gear and upgrades [8].

Minor/No failure loops

Roguelikes

Customization plays a crucial role within failure gameplay loops, where repeated defeat factors into the customization players can engage with [8].

With failure gameplay loops

Research Questions

RQ 1 How does customization in games shape a player's motivational experience?

RQ 2 In what ways do failure gameplay loops influence how players engage with customization?

RQ 3 Does customization in games meaningfully affect players' confidence?

Theoretical Foundations

Self-Determination Theory (SDT)

A model of human motivation describing what encourages and dissuades people. SDT includes three core psychological needs [9].

Autonomy

The experience of volition and willingness when doing a task. Satisfied when activities are done for interest or personal value [9].

Competence

The experience of effectiveness and mastery when engaging in a task. Satisfied when individuals feel capable of overcoming challenges [9].

Relatedness

The experience of closeness, connection, and belonging. Satisfied when individuals feel understood and valued by others [9].

Self-Efficacy Theory (SET)

An individual's belief in their capability to organize and execute actions required to achieve specific goals [10]. Unlike competence (real-time feeling), self-efficacy is forward-looking and predicts future performance [10], [11].

Mastery Experiences

Successful completion of tasks [10], [11].

Vicarious Experiences

Observing others succeed [10], [11].

Verbal Persuasion

Being told you can succeed [10], [11].

Physiological States

Anxiety or stress influence [10], [11].

Deconstructing Functional Customization

Functional Customization Framework

The researcher deconstructed functional customization into three categories:

Offensive

Weapons, damage types, gun attachments, combat tools that let players engage enemies

Abilities

Skill trees, class specializations, character capabilities that provide unique actions

Defensive

Armor, shields, gear, consumables that enhance survivability and resilience

Games in This Study

LOOTER SHOOTERS

Borderlands 3 & 4

Destiny 2

The Division 2

Escape from Tarkov

Warframe

Minor/No failure loops

ROGUELIKES

Risk of Rain 2

Hades

The Binding of Isaac

Slay the Spire

With failure gameplay loops

FC Deconstruction: Looter Shooters

How functional customization was identified and categorized in each looter shooter title.

Borderlands 3 & 4

First-person looter shooters where players choose from four Vault Hunters, each with distinct action skills and multiple skill trees, progressing through quests and looting procedurally generated gear [12], [13].

FC: Character selection, weapon traits/classes, skill tree point allocation, and procedurally generated loot (guns, shields, equipment) that interacts with class abilities to produce diverse playstyles [12], [13], [14].

Destiny 2

First-person looter shooter where players take on the role of Guardians, choosing from three classes with subclass trees and customizable loadouts across PvE and PvP modes [15].

FC: Armor/gear, weapons, mod systems, and classes/subclasses. Weapon perks and armor mods affect handling, stability, damage profiles, and elemental resistance [15], [16].

The Division 2

Third-person looter shooter where players create a Division agent and choose from various specializations, completing missions and collecting loot in PvE and PvP environments [17], [18].

FC: Modular gear systems, weapon attachment slots, class specializations, and skills (drones, turrets). Gear modifies critical hit chance, armor, and skill cooldowns [17], [18].

Escape from Tarkov

First-person hardcore extraction shooter where players enter as PMC or Scav characters aiming to survive, loot, and extract gear under permadeath conditions [19].

FC: Weapon mod system (barrels, receivers, stocks, optics, grips, sights), armor, and gear like backpacks. Customization affects engagement range, movement speed, and inventory capacity [19].

Warframe

Third-person looter shooter where players control the Tenno, ancient warriors equipped with biomechanical suits called warframes, completing procedurally generated missions [20], [21].

FC: Warframe selection, weapon choice, and a mod system that augments weapon and warframe stats including damage, shields, and abilities [20], [21], [22].

FC Deconstruction: Roguelikes

How functional customization was identified and categorized in each roguelike title.

The Binding of Isaac

Top-down roguelike where players control Isaac through procedurally generated dungeons with randomized item drops. Each run ends in victory or full restart, forming a failure gameplay loop [23].

FC: Active items, passive items, unlockable characters, and trinkets. Items alter projectile behavior, movement, health, and damage, creating emergent build strategies through combinations [23].

Hades

Isometric roguelike where players control Zagreus attempting to escape the underworld through procedurally generated combat encounters, with death resulting in full restart [24], [25].

FC: Boons from Olympian gods, infernal arms (weapons), artifacts, and keepsake upgrades. Boons stack to create combination effects like damage-over-time with critical multipliers [25].

Risk of Rain 2

Third-person roguelike where players choose from a roster of survivors with unique abilities, surviving increasingly difficult waves of enemies [26].

FC: Item collection and survivor selection. Items alter damage, movement, health with no stacking cap, enabling exponential build growth [26].

Slay the Spire

Turn-based roguelike deck builder where players choose from four characters with unique starting decks, ascending a procedurally generated map through card-based combat [27].

FC: Deck construction, relics, and card upgrades. Each character provides a different set of possible decks. Relics offer persistent modifiers that alter playstyle [27].

Mapping FC Subcategories to SDT Example

Each subcategory was evaluated by how well it supports autonomy (player choice), competence (skill mastery), and relatedness (social connection).

High Classification: Borderlands 3 (Autonomy)

Games rated High in autonomy have plentiful, deep systems that give players meaningful choices across customization layers.

Offensive	High: Millions of gun variations with attachments and elemental damage types [12]
Abilities	High: Branching skill trees enable each character to have a deeply customized playstyle [12]
Defensive	High: Wide variety of shield and gear mods that block varying damage types [12]

Low Classification: Binding of Isaac (Competence)

Games rated Low in competence have minimal or absent systems, limiting how much the player can express build mastery.

Offensive	Low: Limited to random drops, reducing opportunities to master item combinations [23]
Abilities	Low: Zero customization options; mastery comes only from learning what the game gives you [23]
Defensive	Low: Limited to random drops, reducing opportunities to master defensive combinations [23]

High Classification: Borderlands 3 (Relatedness)

Games rated High in relatedness integrate multiplayer into customization and support social connection through co-op play or online discussion.

Offensive	High: Weapon variety lets players engage in different combat ranges in cooperative play [13]
Abilities	High: Skill trees and character selection let players spread out team roles [13]
Defensive	Low: Shields and gear don’t affect how players interact with each other [13]

**Two-of-three rule: if 2+ sub-categories rated High, overall construct = High*

Methodology

Study Overview

Platform	Qualtrics online survey, anonymous links
Recruitment	Reddit, Discord communities, SMU Guildhall/Esports/Game Club
Participants	180 total across 10 game titles
Limitations	**Small sample size**,~7.3% margin of error at 95% confidence, or ~82% confidence at a 5% margin of error. Uneven distribution: *The Division 2* (n=72) vs *Borderlands 4* (n=4). **Recruitment** via gaming communities may skew toward engaged, experienced players.

Measures & Survey Design

BPNSFS (SDT)

24 five-point Likert-scale items, from 'not true at all' to 'completely true'. 6 subscales measuring satisfaction and frustration for autonomy, competence, and relatedness. Composite score = satisfaction + reversed frustration [28].

NGSES (Self-Efficacy)

8 five-point Likert-scale items, from 'strongly disagree' to 'strongly agree'. Averaged across all 8 items to produce a single self-efficacy score [29], [30].

Free Response

3 open-ended questions created by the researcher for autonomy, competence, and relatedness. All items operationalized to reference functional customization and specific game contexts.

Demographics

2 items: Age (screened out under 18) and Gender Identity. Participants also confirmed they had played the selected game title.

Reliability

Cronbach's α: NGSES (0.91), BPNSFS composite (0.83). Autonomy Satisfaction (0.53) and Relatedness Frustration (0.55) fell below the 0.70 threshold; all other subscales ≥ 0.72. Per established protocols with this scale, a combined Cronbach's α is used.

Operationalized: Autonomy

BPNSFS Autonomy Subscale (8 items, Likert 1-5)

	Original (Pre-Operationalized)	Operationalized for Functional Customization in This Study
Satisfaction	I feel a sense of choice and freedom in the things I undertake.	I feel a sense of choice and freedom in how I customize and approach challenges in games.
Frustration	Most of the things I do feel like "I have to".	Most of the functional customization I do feel like "I have to".
Satisfaction	I feel that my decisions reflect what I really want.	My customization choices feel like my decisions reflect what I really want.
Frustration	I feel forced to do many things I wouldn't choose to do.	I feel forced to customize my character in a way I wouldn't choose to do.
Satisfaction	I feel my choices express who I really am.	My functional customization decisions express who I really am.
Frustration	I feel pressured to do too many things.	I feel pressured to functionally customize my character too many times.
Satisfaction	I feel I have been doing what really interests me.	I feel that functionally customizing my character is what really interests me.
Frustration	My daily activities feel like a chain of obligations.	Functionally customizing my character feels like a chain of obligations.

Operationalized: Competence

BPNSFS Competence Subscale (8 items, Likert 1-5)

	Original (Pre-Operationalized)	Operationalized for Functional Customization in This Study
Satisfaction	I feel confident that I can do things well.	I feel confident that I play well when I can functionally customize my character.
Frustration	I have serious doubts about whether I can do things well.	I have serious doubts about whether I can do things well even after I functionally customize my character.
Satisfaction	I feel capable at what I do.	I feel capable in games where I can functionally customize my character.
Frustration	I feel disappointed with many of my performances.	I feel disappointed with many of my performances, even when I can functionally customize my character.
Satisfaction	I feel competent to achieve my goals.	I feel competent to achieve my goals by functionally customizing my character.
Frustration	I feel insecure about my abilities.	I feel insecure about my abilities even when I functionally customize my character.
Satisfaction	I feel I can successfully complete difficult tasks.	I feel I can successfully complete difficult in-game tasks when I can functionally customize my character.
Frustration	I feel like a failure because of the mistakes I make.	I feel like a failure because of the functional customization mistakes I have made.

Operationalized: Relatedness

BPNSFS Relatedness Subscale (8 items, Likert 1-5)

	Original (Pre-Operationalized)	Operationalized for Functional Customization in This Study
Satisfaction	I feel that the people I care about also care about me.	I feel that the people I play with also care about me.
Frustration	I feel excluded from the group I want to belong to.	I feel excluded from player communities that focus on the games I play or the functional customization I use.
Satisfaction	I feel connected with people who care for me, and for whom I care.	I feel connected to other players who value teamwork and respect my functional customization preferences.
Frustration	I feel that people who are important to me are cold and distant towards me.	I feel like some players or community members are cold and distant to how I play or functionally customize.
Satisfaction	I feel close and connected with other people who are important to me.	I feel close and connected with other players who also functionally customize their characters.
Frustration	I have the impression that people I spend time with dislike me.	I have the impression that players I interact with dislike how I choose to functionally customize.
Satisfaction	I experience a warm feeling with the people I spend time with.	I experience a warm feeling with the players I spend time with, who also functionally customize.
Frustration	I feel the relationships I have are just superficial.	I feel the relationships I have with other players are just superficial.

Operationalized: Self-Efficacy

NGSES Scale (8 items, Likert 1-5, averaged)

Original (Pre-Operationalized)	Operationalized for Functional Customization in This Study
I will be able to achieve most of the goals that I set for myself.	I will be able to achieve most of the goals that I set for myself by functionally customizing how I play.
When facing difficult tasks, I am certain that I will accomplish them.	When facing difficult tasks in game, I am certain that I will accomplish them by adjusting my build.
In general, I think that I can obtain outcomes that are important to me.	In general, I think that I can obtain outcomes in game that are important to me by personalizing my build.
I believe I can succeed at most any endeavor to which I set my mind.	I believe I can succeed at most any gameplay challenge to which I set my mind.
I will be able to successfully overcome many challenges.	I will be able to successfully overcome many challenges where I can functionally customize my build.
I am confident that I can perform effectively on many different tasks.	I am confident that, because I can functionally customize my build, I can perform effectively at many different gameplay tasks.
Compared to other people, I can do most tasks very well.	Compared to other people, I feel I use functional customization very well.
Even when things are tough, I can perform quite well.	Even when gameplay is difficult, I can perform quite well using a build that I functionally customized.

Operationalized: Free Response

3 open-ended questions created by the researcher

Autonomy

Thinking about the game you selected, how does functional customization affect your sense of control while playing? Feel free to describe any moments, features, or feelings that stood out.

Competence

Thinking about the game you selected, how does functional customization affect your sense of your own skill while playing? Feel free to describe any moments, features, or feelings that stood out.

Relatedness

Thinking about the game you selected, how does functional customization affect your sense of connection to others while playing? Feel free to describe any moments, features, or feelings that stood out.

Game Categorization by SDT Construct

Game	Genre	Autonomy	Competence	Relatedness
Binding of Isaac	Roguelike	Low	Low	Low
Borderlands 3	Looter Shooter	High	High	High
Borderlands 4	Looter Shooter	High	High	High
Destiny 2	Looter Shooter	High	High	High
The Division 2	Looter Shooter	High	Low	High
Escape from Tarkov	Looter Shooter	Low	High	Low
Hades	Roguelike	High	High	Low
Risk of Rain 2	Roguelike	Low	Low	Low
Slay the Spire	Roguelike	Low	Low	Low
Warframe	Looter Shooter	Low	Low	Low

**Two-of-three rule: if 2+ sub-categories rated High, overall construct = High*

Results and Discussion

Results Overview

H1 High functional customization → more autonomy

Supported

H2 High functional customization → more competence

Supported

H3 High functional customization → more relatedness

Not Supported

H4 High functional customization → more self-efficacy

Not Supported

H5 Failure gameplay loops → more autonomy

Not Supported

H6 High FC in failure loop games → more self-efficacy

Not Supported

H1: Autonomy & Functional Customization

H1: Players with high functional customization will feel more autonomy.

Rationale: Choosing gear, abilities, or builds gives players meaningful control over how they engage with the game [1].

Supported (p = 0.0025)

Welch's ANOVA confirmed (p = 0.015)

I found that autonomy was significantly related to functional customization overall, but no single subcategory was individually significant.

This is consistent with the idea that autonomy comes from the overall breadth of customization, not any single system. Roguelike players described autonomy as real-time adaptation rather than pregame planning [31].

Discussion: Autonomy

Game	Mean	SD	n	FC Level
Risk of Rain 2	31.36	3.54	22	Low
Borderlands 4	30.75	8.14	4	High
The Division 2	30.69	4.58	72	High
Borderlands 3	29.75	4.35	20	High
Escape from Tarkov	28.70	7.21	10	Low
Hades	28.43	2.51	7	High
Warframe	27.60	1.34	5	Low
Destiny 2	26.13	6.69	31	High
Slay the Spire	25.80	6.06	5	Low
Binding of Isaac	25.50	6.35	4	Low

The implication is that producers should design for breadth across multiple customization layers rather than depth in any single one.

For example, *Risk of Rain 2* had the highest autonomy mean despite being categorized as low, while *Destiny 2* had the third lowest mean despite being categorized as high.

Thus, I can extrapolate that a player's sense of control depends on how free they feel across the whole experience, not just one system.

Qualitative: Autonomy Themes

Autonomy Themes

Real-time adaptation

Roguelike players described autonomy as improvising with whatever the game provides, adapting builds on the fly rather than following a predetermined plan.

The illusion of choice

Destiny 2 players noted that meta optimization narrows meaningful choices, creating a tension between perceived freedom and competitive pressure to conform.

Randomness as ownership

Risk of Rain 2 players described adapting to randomized items as a way of making each run feel personally owned, turning chance into self-expression [31].

H2: Competence & Functional Customization

H2: Players with high functional customization will feel more competence.

Rationale: Customization allows players to align challenges with their skill level, increasing control and proficiency [32].

Supported (p = 0.0001)

I found that competence was highly significantly related to functional customization overall, but also offensive customization had a significant positive relationship with competence, while abilities customization had an inverted relationship.

This is consistent with previous research showing that clear and immediate feedback on player actions is a core driver of competence in games [9], [32]. Offensive systems provide the most visible feedback during gameplay.

Discussion: Competence

Game	Mean	SD	n	FC Level
Borderlands 4	37.25	3.20	4	High
The Division 2	35.97	4.27	72	Low
Borderlands 3	34.75	4.25	20	High
Destiny 2	34.65	5.54	31	High
Warframe	34.20	4.60	5	Low
Risk of Rain 2	33.45	4.07	22	Low
Binding of Isaac	33.25	3.77	4	Low
Escape from Tarkov	28.50	4.60	10	High
Hades	28.00	5.16	7	High
Slay the Spire	25.80	3.70	5	Low

The implication is that producers should prioritize offensive customization depth while being careful not to overload players with too many ability systems.

For example, *Borderlands 3*, which offers billions of procedurally generated weapons, had one of the highest competence scores.

Thus, I can extrapolate that when players feel their weapon choices, damage types, and combat tools are effective, it directly feeds their sense of mastery.

Qualitative: Competence Themes

Competence Themes

Build knowledge as skill

Participants described theory crafting as its own form of skill expression, not just reflexes.

Customization boosts, but does not replace

Players differentiated building well from playing well. Customization acts as a multiplier on skill.

Emotional payoff

Players used words like "validated," "satisfying," and "accomplishment" when self-designed builds succeeded.

Hypotheses 3-6: Not Supported

H3: Relatedness

p = 0.2985

Players with high functional customization will feel more relatedness.

H4: Self-Efficacy (Game)

p = 0.1346

Players with high functional customization will feel more self-efficacy.

H5: Autonomy (Genre)

p = 0.8732

Players in failure gameplay loops will feel more autonomy.

H6: Self-Efficacy (Genre)

p = 0.8659

Players with high functional customization in failure loop games will feel more self-efficacy.

Discussion: Relatedness & Self-Efficacy

Relatedness

I found that functional customization had no significant relationship with relatedness. For many players, customization is personal and does not carry over into social connection. Including primarily single-player roguelikes may have influenced this result.

Self-Efficacy

I found that neither game-level nor genre-level analysis showed a significant relationship. This is consistent with previous research that found relationships using game-contextualized measures [33]. The implication is that the NGSES may be too general to capture game-specific confidence. **Thus, I can extrapolate** that a player can feel highly competent with a build, but this does not translate to scoring higher on a general self-efficacy scale.

Post-Hoc: Subcategory Analysis on Competence

Which specific types of functional customization drove the significant results?

Competence Offensive Customization

Positive relationship with competence
p = 0.0225

Games with more offensive depth (weapons, damage types, combat options) had higher competence scores.

Competence Abilities Customization

Inverted relationship with competence
p = 0.0552

Games with fewer ability systems had higher competence scores. Too many skill trees may dilute mastery.

Discussion: Recategorization

Process

1. I only used the significant competence subcategories
2. Set the low group competence mean as an empirical threshold
3. Compared each game's competence mean to the cutoff to re-rate the offensive subcategory
4. Applied changes to the overall competence classification using the two-of-three rule

Offensive: 5 games changed subcategory ratings

Abilities: 3 games changed subcategory ratings

Competence Offensive Subcategory

Game	Original	Recat.
Escape from Tarkov	High	Low
Hades	High	Low
Warframe	Low	High
Risk of Rain 2	Low	High
Binding of Isaac	Low	High

Competence Abilities Subcategory

Game	Original	Recat.
Borderlands 4	High	Low
Binding of Isaac	Low	High
Escape from Tarkov	Low	High

Note: *Recategorization used a single threshold (low group mean). Small per-game sample sizes (n=18) may limit the reliability of these subcategory-level comparisons.*

Discussion: Evaluating the Taxonomy

I found that the three-part taxonomy (offensive, abilities, defensive) served as a useful descriptive framework but was not predictive of player constructs.

For example, when recategorizing games using the empirical threshold from the competence offensive ANOVA, five games changed subcategory ratings but **only *Hades* changed overall classification.**

This is not consistent with the original expectation that the taxonomy could classify games into reliable high/low categories for predicting player outcomes.

The implication is the taxonomy is better suited as a descriptive tool for breaking down what a game offers rather than a predictive tool for how players will respond.

Thus, I can extrapolate that future research needs to refine how functional customization is measured, possibly distinguishing pre-game vs. during-game customization.

Subjective Ratings: Researcher's high/low ratings are inherently subjective, which may have contributed to misclassifications within the taxonomy.

Discussion: Failure Loops & Qualitative Insights

I found that the genre comparison found no significant difference in autonomy or self-efficacy between looter shooters and roguelikes, suggesting failure loops alone do not change how customization affects these constructs.

However, for example, qualitative responses from *Hades* players hinted at a connection. One participant said that "gradually unlocking upgrades over many failed runs" allowed their customization ability to grow alongside their skill.

This is consistent with the initial expectation that failure loops would help roguelike players feel more in control by forcing meaningful choices after each death.

The implication is that the specific design of a game's customization system matters more than the genre it belongs to.

Thus, I can extrapolate that failure loops may serve as a method for both competence and autonomy to grow in players over time, but this needs further quantitative investigation.

Future Research & Conclusion

Future Research

1. Expand the definition of functional customization: distinguish pre-game vs. during-game customization
2. Isolate multiplayer-specific games for relatedness analysis
3. Use game-contextualized self-efficacy measures rather than general scales, Investigate how learn by failure gameplay loops (learn by death) may not affect mastery experiences
4. Explore environmental customization and difficulty modifiers (e.g., *Slay the Spire* ascension system)
5. Larger, more evenly distributed samples with participant compensation

Key Takeaways for Producers

What I learned about competence: invest in offensive customization depth. Weapons, damage types, and combat tools give players clear feedback on their skill. Theory crafting becomes its own form of mastery.

What I learned about autonomy: design for breadth across customization layers. Players feel more control when the whole experience offers meaningful choices, not just one deep system.

Use randomization as a tool for player agency. Procedural elements let players adapt in real time, turning chance into self-expression and personal investment.

Customization that satisfies competence and autonomy predicts retention. When players feel skilled and free, they enjoy the game more and keep playing.

Thank You!

Questions?

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